The growth trajectories of Argentina, Brazil, Chile and Mexico: a comparative view through the framework space lens

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Abstract

This paper discusses different growth trajectories in a selection of Latin American economies, namely Argentina, Brazil, Chile and Mexico, comparing the phase of import substitution growth strategies with the more recent period of financial integration into the world economy. Our working hypothesis is that different growth trajectories result from the linkages between macroeconomic conditions and changes in production structures. When policy space becomes narrower, long-term growth performance is impaired and structural change will not usually enhance growth potential. We carry out an analysis based on the framework space methodology, which serves to compare phases of growth described as an evolving coupling of the dynamic profile of productivity growth (a supply-side condition) with the behaviour of capital accumulation (a demand-side condition). In light of the framework space comparative analysis, our main conclusion is that economic opening in the 1990s did nothing to further the catching-up process in any of the four economies.

Keywords

Economic growth, import substitution, economic liberalization, economic integration, economic policy, economic history, comparative analysis, Argentina, Brazil, Chile, Mexico

JEL classification

E44, O11, O54

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I. Introduction

Until the late 1970s, State-led import substitution industrialization was the dominant developmental strategy in most Latin American economies. This strategy was abandoned after the external debt crisis of the 1980s, which it took almost the whole decade to recover from. The ending of the long economic recession that followed the debt crisis (known as the "lost decade") is associated with economic opening and a deepening process of financialization in the region.[1]

As part of the financialization process, trade liberalization, privatization and financial deregulation became the main economic policy recommendations, and the management of monetary and fiscal policies came to be largely subordinated to the views of the international financial markets. As argued by Ocampo and Vos (2008), policy space in developing economies, and in Latin American economies in particular, has narrowed greatly since economic opening.[2] According to these authors, this narrowing has meant a loss of autonomy for economic authorities when it comes to implementing "effective countercyclical macroeconomic policies consistent with longer-term development objectives and developmental policies" (p. 29).[3] Their main argument is that, capital flows being procyclical, economic opening restricts the authorities' ability to manage countercyclical economic policy in response to booms and busts. Indeed, Ocampo (2007) argues that capital flows to developing countries "exacerbate rather than dampen both economic booms and recessions" (p. 9).

Interest in the growth strategies of Latin American economies has recently revived, with Bárcena and Prado (2016), for example, presenting a discussion of the different phases of Latin American growth since the 1980s. On the basis of the region's economic cycles, which have mostly been determined by external shocks, the study proposes a criterion for identifying different growth periods. In the structuralist tradition, structural change is assumed to depend on the strength and continuity of investment in capital accumulation, this being the main force driving and sustaining growth. Since investment is the most dynamic component of aggregate demand, short-term macroeconomic policy management, conducted in the interests of higher long-term growth, must succeed in curbing volatility in the main macroeconomic prices and in maintaining a countercyclical fiscal stance, a low and stable long-term inflation rate, low real interest rates and a real exchange rate that is competitive over time.

Our main focus in this paper is on the different growth trajectories of four Latin American economies, namely Argentina, Brazil, Chile and Mexico,[4] comparing the period of import substitution growth strategies with the more recent period of financial integration into the world economy. Our working hypothesis is that different growth trajectories result from the linkages between macroeconomic conditions and changes in the production structure. In this light, economic policy plays an important role in explaining the growth process, thus influencing the long-term trajectory. When policy space diminishes, long-term growth performance is impaired and structural change does not contribute to an increase in growth potential. In other words, we assume that structural change is important in explaining long-term growth performance, but that it does not occur smoothly and generally results in unbalanced growth with consequences for internal and external equilibria. For potential output to increase, then,

[1] Financialization can broadly be defined as taking place when financial markets, actors, practices and representations have a growing impact on social structures and dynamics (see Epstein, 2005).

[2] China and India are rare examples of cautious financial integration, and it is no coincidence that they have performed better than other developed and developing economies since the international financial crisis. See Nassif, Feijo and Araújo (2016) for a discussion of the economic performance of Brazil, Russia, India, China and South Africa (BRICS) since the financial crisis.

[3] Rey provides another way of looking at the loss of autonomy in financially integrated developing countries' economic policies. In a recent and influential paper, the author argues that independent monetary policies are possible in developing economies only if the capital account is managed (Rey, 2015).

[4] See, for instance, Moreno and Pérez (2009), who mention that these were the economies that followed a State-led industrialization strategy. They were also responsible for over 50% of total manufacturing value added in Latin America in the 2010s.

the policy space should be enlarged so that long-term policies (such as industrial and technological policies) can be closely coordinated with short-term macroeconomic policies.[5]

To argue this point, we shall conduct our analysis on the basis of the framework space methodology, which will allow us to compare phases of growth, described as an evolving coupling of the dynamic profile of productivity growth (a supply-side condition) with the behaviour of capital accumulation (a demand-side condition). Interaction between these two drivers naturally generates a non-linear growth trajectory, punctuated by discrete jumps or discontinuities, and of course this trajectory need not tend towards any predetermined equilibrium position (as predicted in conventional theory). As a bonus, the framework space methodology will allow us to interpret the phases of economic growth with reference to either the Kaldorian or the neo-Schumpeterian position, and classify accordingly the various structural changes Latin American economies have undergone. Thus, the main contribution of this paper is to provide an analytical interpretation, based on the framework space methodology, of the differences in the growth trajectories of these four Latin American economies.

After this Introduction, section II introduces the framework space methodology. Section III identifies three periods associated with different growth trajectories, and these are analysed in section IV for each individual economy, the contribution of this section being to interpret each country's historical growth record on the basis of the empirical framework space evidence, thereby providing an overview of each economy. Our main conclusion in the light of the framework space comparative analysis is that economic opening in the 1990s did nothing to further the catching-up process in any of the four economies. Section V summarizes our main conclusions.

II. The framework space methodology

The conventional approach to long-term growth implicitly assumes that real-world economies tend in the long run to a particular path forming part of a stable regime, and that this is so strong an attractor that any shorter-run dynamics are transient movements and practically irrelevant.[6] However, observed data fluctuate all the time, so growth patterns should be evaluated against the dynamics of related variables. To deal with this issue, the framework space methodology incorporates a menu of growth models, and it is from this menu that actual patterns of growth are constructed.[7]

The framework space is an analytical device used to focus on variables such as capital accumulation, employment and productivity. The primary justification for choosing these is, of course, that they are the variables employed by the growth theories familiar to us. The framework space takes only the rate of growth in investment per employee (on the vertical scale) and the rate of growth in labour productivity (on the horizontal scale) (see Böhm and Punzo, 2001, p. 48). The purpose of this selection is to explain the relationship between the dynamics of fluctuations in productivity and the dynamics of fluctuations in investment per employee. Construction of the framework space starts with the GDP or value added (va), real-term gross fixed capital formation (i) and employment (e) series. Thus, it is defined as:

$$\frac{d\left(\log va - \log e\right)}{dt} = gv \tag{1}$$

[5] Following the Kaleckian tradition, Titelman and Pérez (2016, p. 162) express this as follows: "A first important implication to arise from the analysis is that macroeconomics for development should not present cycle and trend or the short and long run as dichotomous elements. Short-term fluctuations do affect long-term outcomes."

[6] This prediction is crystal clear in neoclassical theory, which holds that the rate of economic growth in the steady state eventually arrived at will depend only on population growth and technical progress. It was this clarity that brought it to prominence as a theory and as a set of econometrically falsifiable propositions.

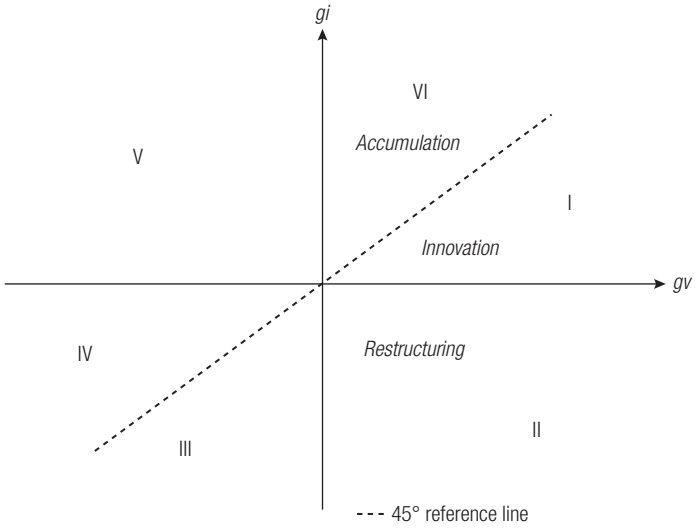
[7] A full presentation and discussion of the framework space approach can be found in Böhm and Punzo (1992, 1994 and 2001), Brida and Punzo (2003), Gaffard and Punzo (2005) and Feijo, Punzo and Lamonica (2012).

$$\frac{d(\log i - \log e)}{dt} = gi \tag{2}$$

where gv is the growth rate of output per employee (a measure of productivity growth) and gi is the growth rate of investment per employee. The variables gv and gi provide the coordinates for the dynamic trajectory of a given economy in the plane (figure 1). Changes in coordinate levels (gv, gi) represent changes in the dynamic relationship of the economy analysed and may signify a shift in the intensity of changes in the variables or the regime, i.e. structural change.[8]

Figure 1 shows how to interpret growth trajectories and their phases in the framework space apparatus. Six standard growth regimes and one special growth regime are dealt with in this framework. The latter is the line that intersects the plane of the coordinates (gv, gi) at 45 degrees; this is the so-called Harrodian corridor[9] separating regime IV above the line from regime I below the line. Both regime VI (accumulation) and regime I (innovation) are in the first quadrant where economic growth occurs, i.e. where rates of productivity growth (gv) and investment per employee (gi) are positive. Regime II (restructuring), in the second quadrant, combines a positive gv and a negative gi. The other regimes, III, IV and V, are treated in the analytical structure of the framework space as reflections of the regimes mentioned above.

Figure 1
Growth regimes in the framework space



Source: Prepared by the authors.

[8] Structural change is interpreted differently in other approaches. It can occur when there are changes in the composition of GDP or economic aggregates, or when there is a change in the organizational and institutional structure of an economy. In Kaldor's view, structural change is observed when there are changes in the composition of manufacturing industry in respect of technological intensity, captured by the elasticities of demand for exports and imports. Thus, according to the Kaldor-Thirlwall model, a structural change might be favourable or unfavourable to the growth of an economy in which the balance of payments is in equilibrium. See Dixon and Thirlwall (1975) and Thirlwall (1979). Also, structural change implies an interrelation between supply and demand forces accounting for growth trajectories. A large body of literature associated with endogenous growth theory supports this approach (De Long and Summers, 1991; León-Ledesma, 2002; Syverson, 2010). León-Ledesma (2002), for instance, estimated a structural model for a set of Organization for Economic Cooperation and Development (OECD) countries over the period 1965–1994. In addition to the impacts of investment and the traditional Kaldor-Verdoorn law, the paper also captures the direct and indirect effects of innovation and technical progress on the behaviour of labour productivity. In the author's words, "innovation not only leads to a higher degree of product differentiation and quality but also to process innovation leading to increased productivity" (León-Ledesma, 2002, p. 204).

[9] Harrodian behaviour is represented by the steady-state trajectories. The coordinates (0,0) are associated with the exogenous growth trajectory (Böhm and Punzo, 2001, p. 53) with a zero rate of technological progress (see below).

The relevant interpretation for our argument is that the framework space is endowed with three categories of growth regimes: (i) steady state; (ii) accumulation, where the focus is on changes in the intensity of investment, with productivity rising with capital accumulation (assuming technical progress is incorporated);[10] and (iii) innovation, which is functionally independent of capital accumulation, growth in this case being explained by innovations, be they new organizational forms or processes or the introduction of new products that increase the gap between unit costs and the final price. The growth trajectory is given by the sequence formed as a function of the pairs of gv and gi, distributed in the framework space plane. Each point in the framework space where these coordinates intersect is associated with a growth trajectory.

The framework space can be related straightforwardly to the predictions of the conventional theories. For example, neoclassical theory identifies a unique global attractor, a steady-state path in which the growth rate g_{NC} is defined as:[11]

$$g_{NC} = n + \lambda \tag{3}$$

where n is the rate of population growth and λ is technical progress. However, the observed rate of economic growth g will usually be different from this exogenous growth. The framework space thus attempts to explain the endogenous rate of growth g_{EN} as the deviation from the steady-state growth rate.[12]

$$g_{EN} = g - \left(n + \lambda\right) \tag{4}$$

The framework space takes the g_{NC} rate as the starting point for figure 1, i.e. the coordinates (0,0), in order to carry out the analysis of the endogenous growth rate. We thus assume that the behaviour of the effective rate g influences the long-term trajectory and thence that the endogenous growth rate can be explained by two regimes or growth models: capital accumulation and innovation.

In sum, all long-term theories are present in the two-dimensional framework space. The Solow (1957) model is the starting point, and the observed points lying elsewhere are associated with endogenous growth[13] that can be explained by both the theory, i.e. capital accumulation, and the innovation regime.

[10] See Kaldor (1957) and Kaldor and Mirrlees (1962), among others.

[11] It should be noted that in the neoclassical theory there is no clear distinction between a growth accumulation regime and a growth innovation regime when technical progress is assumed to be exogenous. To incorporate technical progress into modern growth theory, the production factors of capital (K) and labour (L) are modified, and the traditional aggregate production function $Y = Y(K,L)$ can be written with the addition of a time-dependent multiplier $A(t)$ that incorporates overall technical progress. Thus, according to Romer (2012, p. 10), the neoclassical aggregate production function incorporating technical progress can be written as: $Y(t) = F(K(t), A(t)L(t))$, where t denotes time. According to Aghion and Howitt (2009), however, this modification of the traditional production function to incorporate technical progress still leaves unexplained how this is incorporated. Thus, $A(t)$ can be seen as a useful modelling device, but one with little explanatory power.

[12] León-Ledesma and Thirlwall (2002) tested the hypothesis of the endogeneity of the natural rate of growth for a group of 15 OECD countries, as did Libânio (2009) for the group of the 12 largest economies in Latin America, in both cases successfully. The natural rate of growth rises in periods of expansion and declines during periods of contraction because the labour force and productivity growth are elastic to the growth of demand and output.

[13] Endogenous models with an emphasis on situations of imbalance are inspired by the contributions of Richard Goodwin. See Punzo (2006).

III. Growth trajectories in the period 1951–2014: an overview of the growth performance of the four selected economies

To shed some light on how to identify distinct phases which may be associated with distinct growth regimes in the selected economies, we shall first draw on some indicators related to the evolution of the manufacturing sector.

In the Kaldorian tradition, development is not sectorally neutral, and a special role is assigned to manufacturing industry in driving and sustaining long-term growth rates. Table 1 presents some indicators for the evolution of the share of manufacturing value added and international manufacturing trade over time.

Table 1
Argentina, Brazil, Chile and Mexico: selected manufacturing sector indicators, selected years
(Percentages)

	Share of total Latin American manufacturing[a]		Manufacturing as a share of GDP				Manufacturing exports as a share of GDP				Manufacturing imports as a share of GDP			
	1990	2015	1965	1980	2000	2015	1965	1980	2000	2015	1965	1980	2000	2015
Argentina	7.4	8.7	41.2	29.5	17.8	17.2	5.6	23.2	32.5	29.3	62.2	77.3	87.0	82.0
Brazil	39.0	32.1	26.2	33.5	15.3	11.4	7.7	37.2	58.4	38.1	50.3	40.8	73.3	75.9
Chile	2.5	3.5	24.0	21.5	16.9	11.9	3.9	9.1	16.2	14.4	63.7	59.6	71.4	74.7
Mexico	22.5	26.3	19.5	22.3	20.3	18.4	16.3	11.9	83.5	82.4	82.4	74.9	83.5	81.8
Total	71.4	70.5	24.9	27.1	17.5	14.0	9.3	18.5	51.3	50.8	70.9	64.4	77.2	78.1

Source: World Bank, World Development Indicators [online database] https://datacatalog.worldbank.org/dataset/world-development-indicators.
[a] Manufacturing value added in constant 2010 dollars.

The first two columns (estimates for Brazil are available from 1990 onward) show the relative contribution of each country to the manufacturing industry total in Latin America. Although Brazil's share declined during the 1990s and 2000s, it is still the most industrialized economy in the region.

The next four columns present the GDP share of manufacturing industry for each country and the whole region. The industrialization trend is illustrated in the last row, the manufacturing share of GDP. For the region as a whole, it increased from 1965 to 1980 and decreased afterwards. At the country level, it increased in Brazil and Mexico from 1965 to 1980, while it decreased in all the selected Latin American countries in the ensuing decades. The early 1980s can be identified as a period when deep changes occurred in the growth trajectory of Latin American economies, all of which were badly hit by the debt crisis.

The remaining eight columns present the evolution of the share of manufacturing goods in total exports and imports. This increased in all the selected economies from the 1960s to 2000. The share of manufactures in Mexican exports decreased from 1965 to 1980, but had sharply increased again by 2000, following the signing of the North American Free Trade Agreement (NAFTA) in 1994. The share of manufacturing exports decreased in all the economies from 2000 to 2015. If compared with 1965, however, it was still significantly higher in the latter year, mostly as a result of the industrialization process. If the beginning and end dates are taken, the share of manufacturing imports also generally increased. However, it decreased from 1965 to 1980 everywhere except Argentina.

Between 1980 and 2000, manufacturing imports generally increased, following the analogous movement in exports. From 2000 to 2015, while the shares of manufacturing exports decreased,

shares of manufacturing imports increased everywhere except Argentina. As far as flows of trade in manufacturing goods are concerned, therefore, the time period from 1980 to 2000 exhibits a significant change in the trade balance of the region's economies that might point to a significant change in the growth regime as well.

Table 2 presents GDP growth rates for the economies concerned in selected time periods. These have been chosen to capture different growth trajectories and transition periods for a single indicator, the average GDP growth rate over the time interval (the phase). Table 3 provides a summary of the main characteristics of each.

Table 2
Argentina, Brazil, Chile and Mexico: gross domestic product (GDP)[a] growth rates, selected periods
(Percentages)

	Phase 1 (1951–1981)	Phase 2 (1982–1999)	Phase 3 (2000–2014)
Argentina	2.9	2.1	3.3
Brazil	7.0	2.3	3.3
Chile	3.6	4.6	4.2
Mexico	6.6	2.1	2.5

Source: University of Groningen, Penn World Tables 9.0 [online database] https://www.rug.nl/ggdc/productivity/pwt/pwt-releases/pwt9.0?lang=en.
[a] Real GDP at constant prices in millions of 2011 dollars.

Table 3
Proposed phases of economic growth

	Period	Description
Phase 1	1951–1981	Growth regime based on State-led import substitution industrialization
Phase 2	1982–1999	Debt crisis and consolidation of economic opening
Phase 3	2000–2014	Growth regime based on economic integration in an asymmetrical world

Source: Prepared by the authors.

Phase 1, the period of State-led industrialization, captures the period that was most dynamic in Brazil and Mexico, the most industrialized countries in the region. Phase 2 covers the "lost decade", as it was in most Latin American economies, plus the period of greatest instability in foreign markets, associated with the Asian and Russian crises of the 1990s. The movement from phase 1 to phase 2 was a time when policy space narrowed in most economies, owing among other things to the shortage of international liquidity for heavily indebted economies. Phase 2 is thus treated as a transition to a new growth regime. Phase 3, on the other hand, is characterized by the consolidation of this new growth regime, marked by greater financial and trade integration.[14] The phases thus involve different growth models.

In sum, within the overall period, the two main phases are the first and the third, the second representing a transition. The phase of State-led import substitution industrialization was characterized by industrialization as the engine of development. State intervention in different domains of economic activity was the main driver of investment decisions, and development had a strong orientation towards the domestic market. However, this rapid industrialization led to external imbalances that culminated in the external debt crisis. Economic opening was the strategy for overcoming the shortage of external

[14] The third phase was characterized by deeper financial integration of the economies. Contrary to the assumptions of neoclassical theory, structural change towards more diversified and technologically advanced production sectors was not observed. Indeed, as Amsdem (2001, p. 85) has shown, "as a catching up strategy, free trade policies seem to have been limited to Switzerland and Hong Kong." Chang (2003, p. 2) also emphasized that most developed countries "adopted industrial and commercial policies" considered bad "in the assessment of the neoclassical current, such as protection of nascent industry and export subsidies."

liquidity. The transition period was characterized by structural and market reforms that occurred mostly during the 1980s and 1990s along the lines of the Washington Consensus. They were characterized by liberalization that unleashed market forces, seen as the most efficient way of allocating resources. This phase stood in sharp contrast to the orientation of the first phase, as the State and other non-market institutions were considered a "second-best" solution. Phase three was one of a new growth regime in which the economies were more integrated with one another and globally but also more susceptible to external shocks.

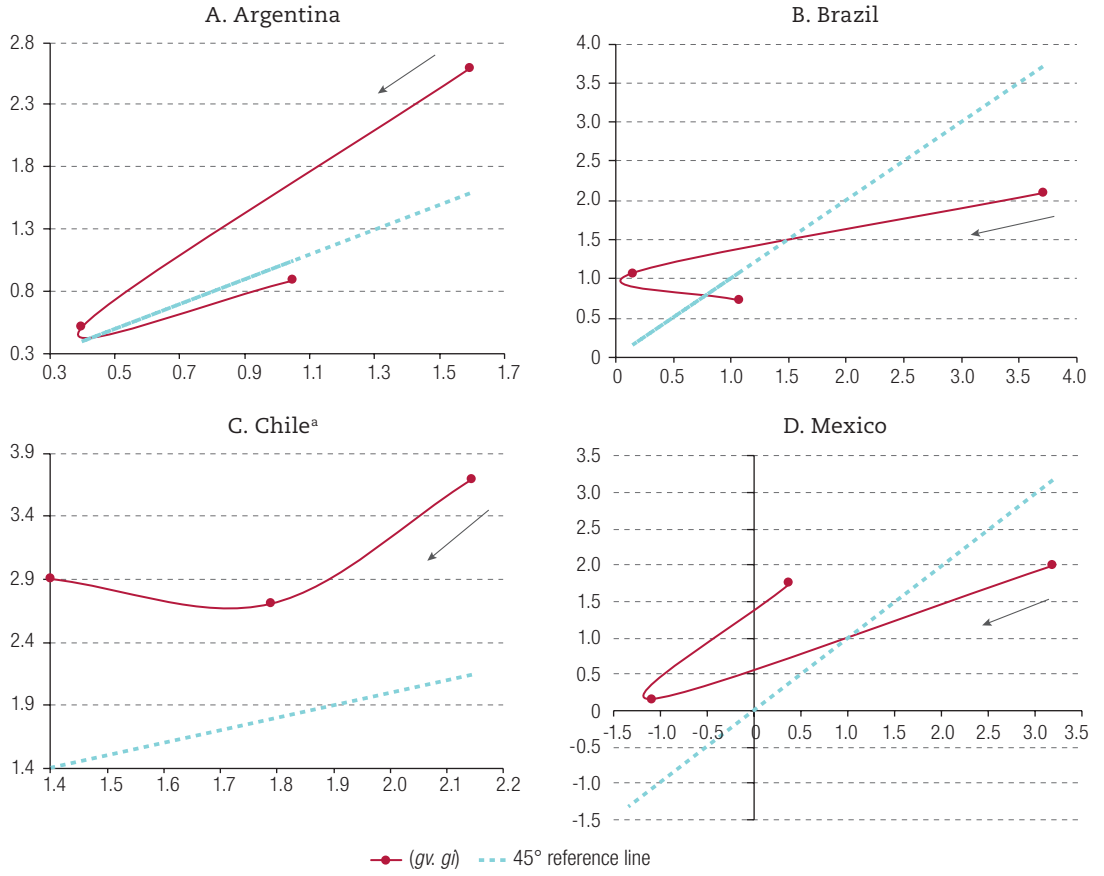
IV. Interpreting growth trajectories in the framework space

A growth regime qualitatively identifies a specific growth dynamic, generated by a given growth model. Hence, while a trajectory is any generic sequence of growth paths, a growth regime dynamic is the representation of a trajectory's qualitative features distilled via the properties of its regime representation (Böhm and Punzo, 1992 and 1994; Brida and Punzo, 2003). In the framework space, therefore, an economy's actual trajectory (its historical growth experience) is sequenced as a string of growth paths within or across regimes, or both. When growth paths span more than one regime, we talk of a change in regime as a qualitative change in the growth model, and this discontinuity is understood as a manifestation of an underlying structural change, rendered explicit or "emerging" through certain qualitative aspects of the economy's observed dynamics. Combining the notions implied in the framework space methodology with our predetermined segmentation into historical phases, we get a variety of possible ways of accounting for long-term growth trajectories.

It is the combination of qualitatively distinct growth trajectories, the regime dynamics, that we want to examine. Using the framework space, we can analyse the growth trajectories of the four selected economies under the assumption (introduced hereafter) that they were to a great extent operating under the same external economic conditions. Thus, different country trajectories might be interpreted as specific responses to domestic macroeconomic policy management measures impacting both productivity and investment performance. Figure 2 presents the trajectory of our four economies (Argentina, Brazil, Chile and Mexico) in the predefined growth phases. Table 4 summarizes their growth trajectories as seen through the framework space instrument.[15]

[15] See annex A1 for a description of the variables in figure 2.

Figure 2
Argentina, Brazil, Chile and Mexico: framework space diagrams, 1951–2014



Source: Prepared by the authors.
Note: See annex A1 for explanations of the terms.
[a] Starts in 1952.

Table 4
Argentina, Brazil, Chile and Mexico: Summary of growth trajectories

	Argentina	Brazil	Chile	Mexico
Phase 1 (1951–1981)	Accumulation	Innovation	Accumulation	Innovation
Phase 2 (1982–1999)	Accumulation	Accumulation	Accumulation	Retrenchment
Phase 3 (2000–2014)	Innovation	Innovation	Accumulation	Accumulation

Source: Prepared by the authors.

1. Phase 1: the State-led import substitution industrialization growth regime (1951–1981)

After the Second World War, the large countries of Latin America embarked on a process of industrialization based on import substitution in industry[16] and strict control of exchange rates. External borrowing was stimulated and was reflected in high investment rates. The 1960s and 1970s are often seen as a golden age in Latin American economic history.[17]

[16] Industrialization based on protectionist policies favouring infant heavy industries received a strong impetus in the 1950s, with Prebisch's centre-periphery model being a strong influence.

[17] See, for instance, Bértola and Ocampo (2012).

As a growth regime, State-led industrialization centred on a set of institutional arrangements aimed at promoting structural change with a view to catching up more quickly with mature economies. Brazil and Mexico are examples of successful import substitution industrialization strategies. Figure 2 shows that this phase was the one in which productivity growth rates were the highest on average for these economies. In both cases, the growth trajectory falls in the innovation quadrant, with average aggregate productivity growth exceeding average growth in investment per worker over the period. This result can be seen as a clear indication that the increase in aggregate productivity resulted from the intensification of the industrialization process. In both countries, industrialization was based on protectionist policies, i.e. at each step of the import substitution process, governments targeted certain industries as priorities for industrial policy and used both import licences and high tariffs to protect the manufacturing sector.[18]

The Argentine industrialization process took a different route. Argentina has comparative advantages in its agricultural sector because it is endowed with large areas of fertile land. Thus, industrialization entailed displacement of the dynamic centre of agricultural and livestock activities to manufacturing. Industrialization ended in 1976 (see Ferrer, 2004; Câmara and Vernengo, 2013), when a neoliberal economic policy agenda took over the economy, leaving the process unfinished. In the period from 1951 to 1981, Argentina's growth trajectory falls into the accumulation quadrant (figure 2), and the striking feature of the Argentine pattern of development since the War is not so much State-led industrialization as the political instability marking the country's development (see Câmara and Vernengo, 2013, pp. 115–116). Indeed, the 1976 military coup was an attempt to return Argentina to the economically liberal agricultural export growth model of the country's "glorious past" (Ferrari and Cunha, 2008, p. 27). Orthodox methods were used in an attempt to curb persistently rising inflation,[19] and the economy had stagnated by the end of the decade.[20]

The Chilean growth pattern in 1952–1981 also falls into the accumulation quadrant, indicating that the structural change promoted by the import substitution industrialization strategy did not alter the most important characteristics of the economy, with its heavy dependence on mineral extraction. In fact, the State–led orientation of the Chilean economy reached into all economic sectors. Between 1964 and 1973, Chile implemented a process of agrarian reform that affected 50% of agricultural land. In 1971, all mineral wealth was nationalized and the National Copper Corporation of Chile (CODELCO) was created and became the country's largest exporter, as it still is. Financial markets were regulated by the State. However, the military coup of 1973 moved the economy to a radical neoliberal agenda, very quickly reducing the presence of the State through an extensive privatization programme that encompassed public enterprises, banks and even social security, the promotion of private health insurance and the expansion of private education. Economic opening entailed internationalization of the financial sector. These economic reforms exposed the economy to movements in international financial markets, and consequently the Mexican default of 1981 badly hit Chilean GDP, which dropped by over 10% in 1982.[21]

The import substitution industrialization strategy was virtually abandoned by Brazil after Mexico's external default of 1982. Indeed, State-led strategies of this type were eventually to be abandoned in

[18] In Brazil, industrial policy actively fostered industrialization, and national development plans were launched to deal with major disequilibria in the trade balance, mainly during the 1970s. Brazilian industrialization was largely dependent on foreign savings; paradoxically, balance-of-payment crises reinforced government arguments in favour of renewing the use of protectionist instruments and import substitution. The import substitution strategy followed by Mexico, which was also based on protectionist policies, followed a different route from the 1960s, with the protectionist regime relying increasingly on import licences and less on tariff protection. According to Ros (1993), the essential criterion for granting import licences was the availability of domestic supplies.

[19] In 1978, the plan implemented by the neoliberal minister José Alfredo Martínez de Hoz failed completely and there was a banking crisis.

[20] Before the Mexican moratorium, Argentina had the highest ratio of external debt to GDP in Latin America.

[21] According to the World Development Indicators, in 2005 dollars at purchasing power parity (PPP).

most Latin American countries, their main flaw being that they relied on running external deficits and resorting to increasing amounts of external borrowing, a strategy that was unsustainable mainly because of the high volatility associated with external financing. Their abandonment was thus the result of the behaviour of both the trade and capital balances, as this meant that investment, the main variable when it comes to expanding aggregate income and output, was unsustainable. A common criticism of the import substitution strategy is that it left little room for export-led growth because excessive protectionism generated inefficiencies in industrial production. The lack of dynamism in export earnings became a major bottleneck for import substitution industrialization, since the industrial sector was import-intensive (Sapelli, 2003).

The golden age of the Latin American economies, during which structural change favoured industrialization, came to an end with Mexico's external moratorium.

2. Phase 2: the debt crisis, the consolidation of economic opening and the transition to a new growth regime (1982–1999)

The virtual abandonment of the developmentalist agenda guiding Latin American growth strategies after the Second World War was the result of the external debt crisis.[22] The increase in foreign debt after the sharp rise in international interest rates led to the implementation of recessionary policies in pursuit of external adjustments in all indebted countries. Sharp devaluations of domestic currencies following balance-of-payments crises led to rising domestic prices. In a word, policy space narrowed substantially in the Latin American economies once developmentalist policies were departed from.

According to the framework space (figure 2), all the economies entered a process of reduction in the growth rates of both productivity and investment per worker during phase 2.

Following the Mexican external moratorium of 1982, and as the financial fragility of the public sector worsened, Brazilian inflation became entrenched. High inflation dominated the macroeconomic situation in the mid-1980s and early 1990s, during which time several anti-inflationary plans were launched, though with little or no success. At the same time, development strategies lost ground in the economic debate as renegotiation of the external debt became the main economic policy priority. High inflation was eventually defeated with the Real Plan of 1994, while trade liberalization reforms were introduced in the early 1990s, relatively late in comparison with the other economies selected. However, they were implemented very quickly: between 1988 and 1994, most non-trade barriers were banished and the nominal import tariff was reduced from 39.6% to 11.2% (simple average), with the standard deviation dropping from 14.6% to 5.9% (Kume, Piani and De Souza, 2003, p. 11). Of all the economic reforms adopted in Brazil, though, the opening up of the short-term capital account was probably most responsible for exposing the domestic economy to the instability of the world economy and also for reducing the contribution of monetary, fiscal and exchange-rate policies to the maintenance of growth. If, on the one hand, opening up the economy helped to stabilize chronic inflation, on the other, it contributed to the emergence of a new cyclical trend of real-term currency appreciation that made the economy more vulnerable to external shocks. Lastly, financial integration and a fixed exchange-rate regime proved to be inconsistent with each other, and speculative attacks against Asian currencies and the Russian rouble forced Brazil to adopt a flexible exchange-rate regime in January 1999. New economic policy arrangements that included inflation targeting, a primary surplus and a flexible exchange rate were implemented in June the same year.

[22] Moreno and Pérez (2009, p. 37) state: "By the 1980's, the debt crisis which caused the largest drop in output growth in the region's history and affected most of Latin American countries, was used as the leitmotif to launch a devastating critique of earlier developmental policies and to recommend policies based on the mantra 'stabilize, privatize and liberalize'."

The Mexican reaction to the debt crisis was to begin reversing the State intervention policies implemented in the previous phase. Thus, the first "globalization phase" of the Mexican economy started in the mid-1980s, when trade liberalization policies began to be implemented. In 1986, Mexico acceded to the General Agreement on Tariffs and Trade (GATT). The government quickly began to dismantle the system of trade protection, liberalize the financial market and shrink the public sector by carrying out privatizations and reducing public spending. Consistently low inflation became the main macroeconomic goal, as this was seen as a necessary and largely sufficient condition for setting the economy on a path of strong and lasting export-led, labour-intensive growth. Liberal policies did not achieve the results hoped for, however, and integration into the world economy resulted in low growth and increase dependence on oil exports. Indeed, the growth path from 1982 to 1999 was the worst for the Mexican economy since the Second World War. In 1994, Mexico entered NAFTA, and an immediate consequence was the dismantling of the country's production chains, which made room for the maquilas. The specialization of Mexican industry in high-technology sectors actually led to deindustrialization in basic manufacturing, which in turn limited the growth of domestic demand (Levy-Orlik, 2012, p. 246). Besides the intensification of the deindustrialization process, a speculative attack on the domestic currency in 1994 exposed, according to Ibarra and Blecker (2014), the very limited ability of domestic policy to anchor monetary stabilization in a fixed exchange-rate regime. The recovery of the Mexican economy due to its integration into North American supply chains is observed in the following phase.[23]

Argentina was the economy with the worst growth trajectory of the four in phase 1, and a sequence of economic plans changed its economic landscape dramatically during phase 2. As we have seen, the movement towards liberal economic policies started earlier in Argentina, when the liberal economic platform centred on monetarist policies was established. In 1982, Argentina occupied the Falkland Islands (or Malvinas) and came into conflict with the United Kingdom. The result was a massive depreciation of the peso, severe inflation and the accumulation of sizeable external debts. During the 1980s, growth rates were low, and persistently high inflation became a chronic problem which was aggravated by serious episodes of capital flight towards the end of the decade. In 1991, a controversial plan to fight inflation was launched, whereby the peso was made fully convertible with the dollar at a fixed rate.[24] This reduced inflation sharply, but the fixed exchange rate lowered the cost of imports, leading to the flight of dollars from the country and a massive loss of industrial infrastructure and employment. The recovery of the Argentine economy in the early 1990s was associated with the stabilization of inflation and economic opening. Cunha and Ferrari (2009) claim that Argentina pushed neoliberal policies to an extreme with its adoption of the currency convertibility system in 1991. While the convertibility programme eliminated hyperinflation, it evinced little ability to absorb external shocks (Cunha and Ferrari, 2009, p. 7). The fixed exchange rate stimulated the expansion of private consumption, which was financed with increasing external borrowing. In a context of greater instability in international financial markets during the 1990s, Argentina became more and more dependent on official resources, financial packages led by the International Monetary Fund (IMF) and funding from the private debt market. The unsustainability of this macroeconomic arrangement came to a head with the 2001 moratorium: in December 1991, Argentina's total external debt was US$ 62 billion, equivalent to 32% of GDP, but by 2001 debt exceeded US$ 140 billion, more than 50% of GDP (Cunha and Ferrari, 2009, p. 14).

The Chilean economy was the most integrated in the 1980s, since Chile had abandoned the import substitution-based model in the early 1970s. Like all other Latin American economies, though,

[23] Since Mexico entered the international market via global supply chains, multinational corporations have taken on a central role in production. Thus, structural change in the country during the most acute phase of economic liberalism did not prevent it becoming financially and technologically dependent (mainly on the United States), although it did lead to diversification and to an increase in industry's share of the economy and the technology content of exports (Levy-Orlik, 2012, p. 237).

[24] It should be noted that the early years of convertibility were very buoyant in terms of domestic income growth and success in fighting chronic inflation (Ferrari and Cunha, 2008, p. 50). Between 1991 and 1998, the annual average growth rate of Argentina was around 6%.

Chile suffered a severe external crisis in the aftermath of the Mexican moratorium. Its currency was heavily devalued in 1982, sending the economy into a steep recession. GDP shrank by 13.2% in 1982 and 2.8% in 1983. The economic authorities adopted a number of measures to attract foreign capital, and much of the country's private external debt was turned into public external debt as a result of interventions in the financial system. To reduce this debt, the government opted for so-called debt for equity swaps, a mechanism whereby it offered to repurchase the bonds of foreign investors holding Chilean debt at par, but in Chilean pesos and provided that the capital was reinvested in the country. Years later, when the economy had stabilized, the merits of this Chilean solution to the crisis were recognized. Economic opening and early integration into the world economy led to resources being reallocated to industrial sectors targeting the external market (Carton and Slim, 2012). The relatively good economic performance of Chile in the 1990s, based on the expansion and diversification of natural resource exports, was the result of structural reforms in previous decades. According to Díaz (2013, p. 219), liberal macroeconomic policies were consolidated in the 1990s and underlay the recovery of the economy.

In summary, trade and financial liberalization policies became the main planks of most Latin American economies, and of the four leading economies in particular, decisively inaugurating a new pattern of growth led by market forces.

3. Phase 3: a new growth regime of economic integration in an asymmetrical world (2000–2014)

Phase 3 began in the 2000s and was a time of greater integration into the world economy for all four economies. Growth in productivity and investment per worker recovered.[25]

The new growth regime of economic integration was the result of the market-oriented economic policies implemented in the 1980s and 1990s. These contributed to structural change that led to greater specialization in commodity production and, in the case of Mexico, involvement in global supply chains. With the support of liberal economic policies, Argentina, Brazil, Chile and Mexico underwent an industrial reorganization that allowed exports to increase from the 1980s to 2000, although the income effects of exchange-rate appreciation and the heavy dependence of industry on imported inputs in all the countries meant that imports grew even faster (see table 1). Even in 2003–2007, the period of fastest growth in Latin America since the Second World War, none of the four economies was able to reverse the structural trend and reduce the technological gap with more developed economies.

In the case of Brazil, the recovery in the growth trajectory from 2000 onward can be judged weak. The growth trajectory is in the innovation part of the framework space, but productivity growth was lower than in phase 1 on average. This result can be interpreted as an inability on the part of policymakers to closely coordinate productivity-enhancing policies such as industrial, technological and trade policies with short-term macroeconomic policies (especially monetary and exchange-rate policies) (Bresser-Pereira, Nassif and Feijo, 2016; Nassif, Bresser-Pereira and Feijo, 2018). In other words, Brazil's macroeconomic policy regime, which combines an inflation and fiscal targeting regime with a floating exchange-rate regime, has not been successful in increasing policy space for growth policies. The very conservative modus operandi of this Brazilian macroeconomic policy "tripod" has not been able either to bring short-term domestic interest rates down to anywhere near international levels or avoid a cyclical tendency to overvaluation of the Brazilian currency in real terms.

[25] Carvalho (2008, p. 122) questions the resilience of liberal choices in view of the problems that most Latin American economies faced in the 1990s. According to the author, the deep crises of the 1990s did not alter the main characteristics of the financial regimes created in the liberalization process.

The macroeconomic policy orientation of the Mexican economy intensified the consolidation of the country's export industries in the 2000s. Indeed, manufacturing exports expanded continuously at annual rates of over 10% until the outbreak of the international financial crisis in 2008 and 2009. According to Moreno (2016), this achievement is far from having translated into high and sustained growth free of financial or balance-of-payments crises. This is because all the efforts of the Mexican economy to integrate into NAFTA resulted in denationalization of the economy, with multinationals transferring very little to Mexico by way of technology and research and development facilities. The growth of the maquila sector entailed deindustrialization and, according to Ocampo (2016), all this happened despite a competitive real exchange rate, arrived at through wage repression and contractionary economic policies. In figure 2, Mexico is positioned in the accumulation part of the framework space.

In the case of Argentina, the economy plunged into a severe depression lasting from 1999–2002 when the convertibility plan proved unsustainable. Recovery came from 2003 onward with the Kirchner administration and the implementation of policies to sustain aggregate demand. However, as pointed out by Porta (2016, p. 394), by late 2007 the growth trajectory was showing signs of considerable imbalances, most of which were rooted in the Argentine production structure. This diagnosis is based on the evidence that the Argentine production structure is centred on low-technology production (Porta, 2016, p. 402). Moreover, as pointed out by Cunha and Ferrari (2009), the process of economic recovery in the 2000s, involving a change of course in macroeconomic policy with respect to the neoliberal model in force until 2001–2002, should not be understood as a return to a developmental growth strategy. In a longer-term historical perspective, the authors suggest, the ending of the Kirchner era has shown that Argentine society remains much more willing to adhere to the liberal model, in its different versions, than to development strategies that seek to structurally change the production base (Cunha and Ferrari, 2009, p. 21).

The Chilean economy is the only one of the four economies that can be seen to have benefited from economic opening and specialization in natural resources. However, the country's growth trajectory did not signal a change in growth regime from the 1950s. The Chilean economy's growth capacity and export dynamism increased, then, although economic opening led to greater instability. Increased inflows of foreign capital and "Dutch disease" associated with copper exports have led to a prolonged cycle of real exchange-rate appreciation affecting the competitiveness of production and exports of goods and services with higher value added. Thus, productivity in the production structure is very heterogeneous and the Chilean economy is still very dependent on copper exports. Although macroeconomic indicators have been stable thanks to the implementation of consistent macroeconomic policies since the 1990s, the same progress has not been made with developmental or policy instruments to promote economic development (Díaz, 2013, pp. 246–252).

V. Concluding remarks

From the comparative analysis of the growth trajectories of Argentina, Brazil and Mexico we can conclude that the recent poor performance of these economies should not be seen as a cyclical phenomenon, but as the result of the way each was integrated into the world economy. In all cases, changes in the growth regime since the 1950s have entailed a narrowing of policy space and a scaling down of growth potential associated with increasing external vulnerability.

Structural changes from the first phase (phase 1) to the last (phase 3) involved the development of industries specializing in commodities and low-technology manufactured goods (Argentina and Brazil) and high-technology maquila (Mexico). Furthermore, the framework space shows that productivity growth in all four economies was lower than in phase 1. Argentina showed the most unstable growth pattern, as its growth trajectory was close to the Harrodian corridor.

The long-term growth performance of Chile is quite distinct to all the others', since it has maintained the same growth pattern for the last fifty years and has been able to diversify its production structure, although it is still essentially natural-resource-based.

Furthermore, the opening up of these economies before they could catch up with developed ones deepened their dependence on international capital flows. The long transition from phase 2 to phase 3, that of economic integration, substantially changed the role of the State, which became less interventionist. Private investors with access to international financial markets became the main actors guiding investment decisions and capital accumulation. Thus, it can be said that the commitment to a developmentalist approach prevailing during the State-led industrialization phase gave way to criteria of short-term profitability. Stabilization policies became the priority for economic policymakers, and these narrowed the space for long-term economic policies. Their implementation resulted most of the time in higher real interest rates and lower real exchange rates, disincentivizing real-term capital accumulation. Thus, specialization in the production of low value added goods and increased financialization are phenomena that occurred together after economic opening reduced the policy space.

Lastly, the boom in international trade in the 2000s "unleashed a wave of prosperity for developing economies, and Latin America in particular, that influenced their development and external trade and investment strategies" (De Souza and Ferraz, 2016, pp. 375–376). The 2008 international financial crisis brought about a sudden change in this situation. An open question is whether the semi-industrialized economies of this study are prepared for the period of lower international trade and greater financial uncertainties resulting from the hitherto slow recovery of developed economies. This question also raises a further issue, that of how much room for manoeuvre each economy has been left with in the effort to sustain growth. Now that market-oriented macroeconomic policies have been put in place and structural change has resulted in a shift towards low-technology industries, are these economies better placed to deal with an international slowdown in trade?

A menu of policy recommendations aimed at promoting a structural shift towards more technologically advanced sectors should provide for a consistent macroeconomic policy capable of widening the scope for industrial policy to achieve the best results in terms of dynamic economic change. Macroeconomic policies should be countercyclical, and accordingly management of capital flows should be an option to avoid capital volatility, which negatively affects nominal and real exchange rates. As for industrial policy, it should be designed to allow strategic decisions to be made about long-term economic development.

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Annex A1

The framework space variables (see table A1.1) are constructed with data from the Penn World Tables, version 9.0, as follows:

- *gv* is the rate of growth in the ratio of real GDP at constant local prices (in millions of 2011 dollars) to the number of persons employed (in millions).
- *gi* is the rate of growth in the ratio of capital stock at constant 2011 local prices (in millions of 2011 dollars) to the number of persons employed (in millions).

Table A1.1
Estimated *gv* and *gi* as geometric means

Phase	Argentina		Brazil		Chile		Mexico	
	gv	*gi*	*gv*	*gi*	*gv*	*gi*	*gv*	*gi*
1951–1981	1.5922	2.5927	3.70870	2.09340	2.1660	3.7082	3.18720	2.0081
1982–1999	0.3963	0.5124	0.14949	1.069462	1.8098	2.7287	–1.0925	0.1594
2000–2014	1.0488	0.8914	1.060694	0.721482	1.4214	2.9241	0.3756	1.7549

Source: Prepared by the authors, on the basis of University of Groningen, Penn World Tables 9.0 [online database] https://www.rug.nl/ggdc/productivity/pwt/pwt-releases/pwt9.0?lang=en.