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**Argentina's Current Phase of Economic Development:  
A Comparison with Australia**

**Dr Eduardo Pol**

**School of Accounting, Economics, and Finance**  
**Faculty of Business, University of Wollongong**

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# **“Argentina’s Current Phase of Economic Development: A Comparison with Australia”**

**Eduardo Pol**

**School of Accounting, Economics, and Finance**

**Faculty of Business, University of Wollongong**

## **Abstract**

**This paper carries out a contemporary comparison between Argentina and Australia with a view to outlining a sensible action plan for economic development in Argentina. The analytical structure consists of three elements: development is envisaged as a sequential process; the organizing framework is Porter’s theory of economic development; and the data are based on the World Economic Forum reports on competitiveness. Our study identifies and measures barriers to economic development in Argentina with respect to Australia. The proffered methodology is both new and of general applicability.**

## **Keywords**

Stage economic development; barriers to economic development; action plan; key connections principle

## **JEL codes**

**O11, O12, O20, P52**

## 1. Introduction

The empirical evidence supports the view that “convergence” in the sense that all non-rich countries will converge on the income levels of the richest is not guaranteed. This prompts the simple, yet fundamental question: why some countries are rich and others never achieve (or maintain) membership into the rich club of nations? Beyond any doubt, this is an extraordinarily difficult question to answer with precision. There is consensus, however, around two general points: history matters and the roots of economic prosperity are complex.

The question just posed presupposes a cross-country dimension. For example, in the early 20<sup>th</sup> century Argentina and Australia were both members of the rich club of nations, and both economies were based on primary products. Unfortunately, Argentina lost the rich-country status. In 2000, Australian GDP per capita was 76% of the US figure and Argentina only 30%. In a nutshell, “Just as there is no iron law that all developing countries will converge on the income levels of the richest, there is no certainty that having once attained rich-country status it will be maintained indefinitely.” (McLean 2013, p. 14)

Why we observe variation in levels of economic prosperity between countries? Formal growth theories provide frameworks in which economists discuss possible insights leading to the answer of this awkward question. These theories emphasize the role of the immediate determinants of growth, namely: investment in physical capital, human capital accumulation –especially formal education– and technological change.<sup>1</sup> However, economists recognize that it is necessary to go into the black box of the immediate determinants and explore deeper reasons of economic prosperity. It is generally agreed that institutions, culture, geography, and even luck are fundamental determinants of economic prosperity. In particular, institutional change plays a major role in explaining which countries are rich and which are not.<sup>2</sup>

Before going into the topic of the paper an interjection about different styles of economic theorizing seems appropriate. While the hallmark of formal growth theories is an abstract structure set up to analyse logical connections between a small number of key variables with testable implications, the theories of economic development tend to be expressed verbally and close to the empirical nitty-gritty. A case in point is Porter’s narrative theory of economic development first introduced in Porter (1990). Much of Porter’s work seeks to comprehend the unfolding of economic development with a view to policy implications. It is no exaggeration to say that if the ability of a theory to illuminate policy issues is a principal criterion to judge its merit, Porter’s theory meets this criterion exceedingly well.

Our paper is about the comparative economic development of Argentina and Australia. The fact that Australia is a natural candidate for comparison with Argentina has long been recognized by economic historians such as, for example, Diaz-Alejandro (1985), Dingle and Merret (1985), and McLean (2013). One feature shared by both the Argentinian and Australian economies is that they are resource-abundant in the sense of possessing a high ratio of natural resources relative to population, and thereby, the comparison of the economic developments of these countries seems reasonable.<sup>3</sup>

Are Argentinians better at economic development than Australians? Regrettably for Argentinians, the answer is no. Many pages have been written to confirm this unfortunate answer, mainly from an historical perspective. Argentina has been lagging behind Australia for a century. However, historical trends are not inevitable. There is no reason to believe that Argentina cannot evolve successfully along the development path.

Any comparison between the economic developments of real economies requires an explicit definition of economic development, a theoretical framework compatible with the definition, and relevant empirical data. Without this analytical structure the comparison lacks definiteness. This paper carries out a contemporary comparison between Argentina and Australia with a view to outlining a sensible action plan for economic development in Argentina. The analytical structure of the paper consists of three elements: development is envisaged as a sequential process; the organizing framework is Porter's theory of economic development; and the data are based on the most recent World Economic Forum reports on competitiveness.

The paper adds to the literature stage economic development by introducing the Porter economic development path, stating the Porter's law of economic development, and contributing an empirical procedure to compute the height of the barriers to economic development. Our study identifies and measures the barriers to economic development in Argentina with respect to Australia. To the best of our knowledge, no previous author has adopted this approach to frame a comparison between Argentina and Australia. As will become apparent, the methodology used in this paper can be applied to study impediments of economic development in other countries.

Section 2 of the paper sets forth the theoretical background for the comparison between Argentina and Australia. Section 3 makes contact with the Global Competitiveness Index and introduces a principle for guiding research about barriers to economic development. Section 4 provides an empirical appraisal of the barriers to economic development in Argentina with respect to Australia and sketches a plan for action. Section 5 offers a summary and some concluding remarks.

## **2. Theoretical Background**

'Economic development' is a term which quite obviously is capable of a variety of meanings. For example, many years ago the term was used "in relation to movements in income per head and to potential in this respect" (Robbins 1968, p. 4). Nowadays, it is generally agreed that the essence of economic development is the process of structural transformation, including institutional change, financial development, labour market reform, etc. I will not attempt to review the different meanings of economic development here, since the job has been done admirably by Arndt (1981).<sup>4</sup> It suffices to outline a working definition of the term useful for the purposes of this paper. Economic development means that the economy follows a pattern of evolution consisting of different stages accompanied by a clear specification of both the order in which the economy progresses through the stages and the conditions required for the transition from one stage to another.

Porter's approach to economic development is a framework which articulates the three ingredients of the preceding definition (stages, transitions, and conditions of transition) into a narrative theory of economic development as a sequential process. His theory started in an embryonic form in Porter

(1990) and was subsequently refined in Porter (2002) and Porter (2005). It is a theory derived from direct empirical observation that follows Marshall's dictum to the letter: "It is the business of economics, as almost every other science, to collect facts, to arrange and interpret them, and to draw inferences from them." (Marshall 1966, p. 24).

Porter's theory can be described in terms of a hypothetical economy that follows three stages of economic development passing through transitional phases. The stages of economic development – first introduced in Porter (1990) – are based on three *stylized* types of economies which can be described as follows.<sup>5</sup>

#### Stage 1: Factor-driven economy

The *factor-driven economy (or primary economy)* is focused on resource extraction, assembly, and labour-intensive manufacturing. Firms produce primary commodities or relatively simple products of long-standardized technology designed abroad. Unskilled labour is pervasive. Low cost labour and unprocessed natural resources are the dominant sources of competitive advantage and exports. Primary economies are those that compete on both price and low cost of resources. This kind of economy is highly sensitive to commodity price fluctuations and exchange rate volatility.

#### Stage 2: Efficiency-driven economy

In the *efficiency-driven economy* the emphasis is on efficiency in producing standard products.<sup>6</sup> In this type of economy manufacturing plays a major role. Capital-intensive firms are more dominant. Efficiency in producing standard products becomes the key source of competitive advantage, but technological change is largely exogenous for the economy in question (new technology and designs come from abroad although some domestic firms begin to develop the capacity to improve on them). Price competition is the predominant form of economic competition.

#### Stage 3: Innovation-driven economy

The essential distinguishing feature of *innovation-driven economy (or creative economy)* lies in the fact that the increase in the standard of living is primarily based on the production of profitable new ideas. Price competition is still highly relevant for the economy as a whole, but competition through innovation is intense in sectors where technological change is important, such as telecommunications and computers. In this stylized economy, the ability to produce new products at the global technological frontier becomes the dominant source of competitive advantage.

These stylised economies do not purport to capture everything about real economies. No country will fit a stage exactly. Furthermore, there are two transitional phases (from stage 1 to stage 2, and from stage 2 to stage 3) that have to be taken into account in order to articulate the notion of economic development as a sequential process. Given the appropriate circumstances, the hypothetical economy gradually moves from one stage to another. Or, to put it differently, abrupt jumps between stages are ruled out.<sup>7</sup>

To summarize, the process of economic development evolves in five phases: phase A (or stage 1), phase B (transitional phase), phase C (or stage 2), phase D (transitional phase), and phase E (or stage 3). Needless to say, there are many economies in the real world that have gone successfully through these phases and attained a creative economy status.

Porter's theory implies a partition of the set of all economies E into five subsets representing various types of economies: E<sub>1</sub> (factor-driven economies); E<sub>2</sub> (economies in transition from stage 1 to stage 2); E<sub>3</sub> (efficiency-driven economies); E<sub>4</sub> (economies in transition from stage 2 to stage 3); and E<sub>5</sub> (creative economies).<sup>8</sup> The intuition behind this partition is clear. It means that, for example, the characteristics commonly found in the economies belonging to E<sub>1</sub> are not identical with those in E<sub>2</sub>, and consequently, it is methodologically improper to mix them indiscriminately. These five types of economies are associated with an equal number of phases of development. A factor-driven economy operates within phase A; an economy in transition from stage 1 to stage 2 operates within phase B; and so on. Porter's theory is condensed in Table 1, where t denotes time and t with a superscript identifies a particular point in time where the economy moves to the next phase of development.

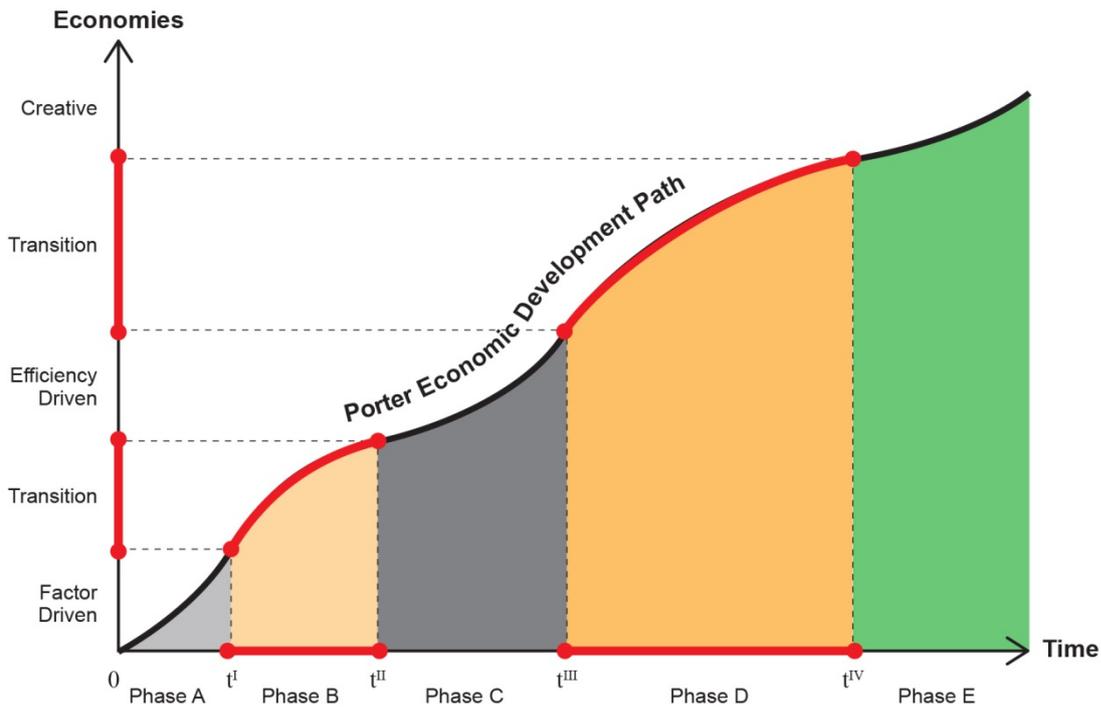
Subsets of E	Types of Economies	Phases of Development (time interval)
E <sub>1</sub>	Factor-driven economies	Phase A ( $0 \leq t < t^I$ )
E <sub>2</sub>	Economies in transition from stage 1 to stage 2	Phase B ( $t^I \leq t < t^{II}$ )
E <sub>3</sub>	Efficiency-driven economies	Phase C ( $t^{II} \leq t < t^{III}$ )
E <sub>4</sub>	Economies in transition from stage 2 to stage 3	Phase D ( $t^{III} \leq t < t^{IV}$ )
E <sub>5</sub>	Creative economies	Phase E ( $t^{IV} \leq t$ )

**Table 1**

**Correspondence between types of economies and phases of development**

Table 1 can be represented graphically in a two dimensional space, measuring time on the horizontal axis and the economies on the vertical axis. The resulting curve will be called *Porter economic development path*. The shape of this curve may vary from country to country. One possible shape is shown on Figure 1 where the inflexion points indicate the end of one phase and the beginning of another: progress is quick within phases of A, C, and E, but slow during the transitional phases B and D.

Table 2 provides an illustration of how to reduce the level of abstraction inherent to Table 1. The subsets E<sub>1</sub>, E<sub>2</sub>, ... , E<sub>5</sub> in the first column of Table 1 are identified with intervals of real GDP per capita in Table 2. In practice, the allocation of economies (countries) into phases of development is not based solely on real GDP per capita. The World Economic Forum reports use two criteria to implement the allocation: real GDP per capita and the share of exports of mineral products in total exports. Phases of development are dictated solely by income for countries that export less than 70% mineral products. Countries that export only primary products would automatically fall into the phase A.<sup>9</sup> For example, the WEF (2014) allocates 144 economies to the various phases of development for the year 2013 as follows: 37 countries in phase A; 16 countries in transitional phase B; 30 countries in phase C; 24 countries in transitional phase D; and 37 countries in phase E.



**Figure 1**

**Pictorial description of Porter's narrative theory of economic development**

Intervals of $y$ ( $y$ = Real GDP per capita, US\$)	Types of Economies	Phases of Development
$0 < y < 2,000$	Factor-driven	Phase A
$2,000 \leq y < 3,000$	In transition from stage 1 to stage 2	Phase B
$3,000 \leq y < 9,000$	Efficiency-driven	Phase C
$9,000 \leq y < 17,000$	In transition from stage 2 to stage 3	Phase D
$y \geq 17,000$	Creative	Phase E

**Table 2**

**Levels of GDP per capita, types of economies, and phases of development**

*Source: World Economic Forum (2014)*

Underlying the Porter economic development path is the notion that there has to be a structural transformation of the economy over time to enhance economic prosperity. Some economies evolve

along the Porter development path and become creative economies. Others are reluctant to accept change and remain as stick-in-the-mud economies (these economies are populated by people lacking initiative, opposed to new ideas, progress, and novelty).

It is said that a nation progresses along the Porter economic development path when the country in question goes through the different phases of development. Successful evolution does not happen by itself. It is true that establishing and enforcing strong property rights in the context of economic freedom is a prerequisite of economic prosperity, irrespective of the phase of development. But it is true, also, that the invisible hand of the market place has to be supplemented with structural transformations.

Much of development economics is policy oriented. The central challenge for economic development is how to create the conditions for progress along the Porter development path. This challenge presupposes that we have an answer to the question: what determines the position of a country on the development path? Generally speaking, a country is economically prosperous today because it has been persistently competitive in the not too distant past. In economic development, competitiveness is destiny.

It is generally agreed that *competitiveness* is an omnibus term encompassing the institutions and other elements that determine the productivity of a country. A terminological point must be made here. Throughout this paper ‘institutions’ is a term comprising laws, regulations, and policies affecting material incentives to invest in physical capital, human capital, and innovation. For example, property rights and economic freedom –the foundations stones of economic prosperity– are members of the set of institutions as well as intellectual property tools such as patents, copyrights, trade secrets, and trademarks. In brief, *institutions* constitute an omnibus set containing all the elements that affect economic incentives to invest in capital and innovation.<sup>10</sup>

The degree of competitiveness, denoted by

$$C = C(t), \tag{1}$$

plays the role of an explanatory variable in the context of economic development. The entire effect of this variable on the economy occurs over a number of years because structural transformations take place gradually over time. In order to analytically represent the cumulative impact of past transformations captured by  $C(t-1)$ ,  $C(t-2)$ ,  $C(t-3)$ , etc. on  $C(t)$  in its most general form, the explanatory variable can be defined as a sequence

$$C(t) = a_1 \times C(t-1) + a_2 \times C(t-2) + a_3 \times C(t-3) + \dots = \sum_{s=1}^{\infty} a_s C(t-s), \tag{2}$$

where the sequence of lag weights  $a_1, a_2, a_3, \dots$  must have a finite sum.<sup>11</sup>

The precise relationship between  $C(t)$  and the position of the economy on the Porter development path has not yet been derived from a formal model. However, the empirical evidence strongly points to the fact that progress along the Porter development path is governed by gradual increases in  $C(t)$ .

This factual regularity –brought into sharp focus by Michael Porter – constitutes an empirical economic law that can be condensed as follows: *ceteris paribus*, an increase in the degree of competitiveness, defined as  $\Delta C(t) = C(t+1) - C(t) > 0$ , signals that the economy is moving in the right direction. It seems natural to call the link competitiveness-development *Porter's law of economic development*.

Porter's law provides a rule of thumb for assessing the implications of improving institutions and policy conducive to increases in competitiveness. While the rule is only a first approximation and might not work very precisely from year to year, it still gives a sensible translation from competitiveness to economic development. Moreover, this law fits nicely with the notion of economic law proposed by Alfred Marshall in his *Principles of Economics*: economic laws are "(...) nothing more than a general proposition or statement of tendencies, more or less certain, more or less definite. (Marshall 1966, p. 27).

What is the use of Porter's theory of economic development to carry out a contemporary comparison between Argentina and Australia economic developments? The theory provides a background framework in which analysts can establish the position of these countries on the development path and predict the direction of change of the economy from the behaviour of  $C(t)$  using Porter's law of development. Furthermore, it should be clear that the ultimate aim of Porter's approach is to assist policymakers to design development policies.<sup>12</sup>

Two important policy messages conveyed by Porter's approach are as follows. First, the transition from one phase of development to the next is *not* automatic. For a country to successfully navigate the Porter development path key parts of the institutional and economic environment *must* change at appropriate times. Such transitions require wholesale transformation of many interdependent elements of economic competition. Second, any economy could become creative, but to maintain this elevated position there has to be incessant business innovation. In this regard, the following maxim applies: "Even though you are on the right track, you will get run over if you just sit there." To sum up, there are adverse consequences for development of doing nothing.

### **3. Setting the Scene for the Comparison**

As will become apparent, the preceding policy messages are useful to carry out a comparison between Argentina and Australia. The empirical evidence provided by (WEF 2014, p. 11) shows that Argentina is in transition from stage 2 to stage 3 (phase D), and Australia is a creative economy (phase E).<sup>13</sup> The discrepancy between GDP per capita (US\$ 2013) is striking: \$11,766 (Argentina) and \$64,863 (Australia).

Why Australia has been successfully navigating the development path and Argentina has not? The answer could hardly be natural-resource abundance because this attribute can be found in both countries. One could argue that Australia has been a fortunate country displaying political stability and absence of serious social divisions. In contrast, Argentina has not been so fortunate. For example, prolonged periods of political upheaval can be found in the recorded history of Argentina.<sup>14</sup>

Economic historians have convincingly argued that chance events do not appear to provide a convincing explanation for Australia's economic prosperity. McLean (2013) argues that Australia's good economic performance across nearly two centuries was reached and maintained by several shifting factors, including institutional adaptability, innovation, and appropriate economic policy to major economic shocks such as wars and depressions.

History matters but what was true in the past does not necessarily imply that it will be true in the future. This applies to both Argentina and Australia. There is no excuse for Argentina to remain in the transitional phase forever and Australia cannot take for granted its current creative economy status.

Argentina is in the middle of the *hardest* transition (from stage 2 to stage 3). This transition typically requires sharp focus on the institutional quality (legal system, political arrangements, corruption, etc.) and substantial improvement of the innovation environment. Institutional flexibility is crucial. The capacity of a country to *adapt* its institutional arrangements plays a major role to attain Stage 3. For example, labour-market institutions may be operating in a manner harmful to development, and thereby, labour-market reform may be required. Government priorities need to focus increasingly on improvements in the innovation rate through public as well as private investments in research and development, higher education and improved capital markets. In brief, the biggest challenge for Argentina is how to create the conditions for progressing along the development path.

It should be clear that there is a difference between *attaining* stage 3 and *maintaining* the economy in stage 3. For example, Australia's elevated position in the global economic landscape cannot be taken for granted. In order to maintain a creative economy status, Australia has to be proactive. In December 2015, the Australian government addressed the challenge by releasing an innovation statement entitled "National Innovation and Science Agenda (NISA)." This AU\$1.1 billion package included a raft of measures aimed at spurring investment in innovative start-up firms and encouraging a culture of risk-taking.<sup>15</sup>

### **3.1. Measuring National Competitiveness**

It should hardly be necessary to mention that we cannot proceed any further without quantifying the degree of competitiveness  $C(t)$ . Fortunately, the World Economic Forum has developed a methodology to measure the degree of national competitiveness termed *Global Competitiveness Index (GCI)*. This index was created by Sala-i-Martin in collaboration with the Forum.<sup>16</sup> The GCI is a comprehensive indicator that measures the micro and macro foundations of competitiveness, and allows international comparisons of economic development.

Countries can be ranked using the numerical value of the GCI. An overview of the contemporary situation for Argentina and Australia can be seen in Table 3. There has been a minor retardation in economic development for Argentina (which drops two places to 106<sup>th</sup>) and a minor improvement for Australia (reversing a four-year slide in the rankings, Australia is up one to 21<sup>st</sup>).

Current phase of the economy	Ranking 2014-15 (out of 144 countries)	Ranking 2015-16 (out of 140 countries)	Direction of change along the Porter development path
Argentina, phase D (in transition)	104	106	Retardation
Australia, phase E (creative economy)	22	21	Improvement

**Table 3**  
**Argentina and Australia: recent positions on the Porter economic development path**

Source: WEF (2014) and WEF (2015)

The GCI consists of 12 pillars of competitiveness encompassing 144 indicators. As indicated in Table 4, these pillars are assigned to three subindices termed *Basic Requirements*, *Efficiency Enhancers*, and *Innovation and Sophistication Factors*. Needless to say, the pillars of competitiveness are related to each other and tend to reinforce each other.

Pillars	Subindices
Pillar #1: Institutions Pillar #2: Infrastructure Pillar #3: Macroeconomic environment Pillar #4: Health and primary education	<b>Subindex 1: Basic Requirements</b>
Pillar #5: Higher education and training Pillar #6: Goods market efficiency Pillar #7: Labour market efficiency Pillar #8: Financial market development Pillar #9: Technological readiness Pillar #10: Market size	<b>Subindex 2: Efficiency Enhancers</b>
Pillar #11: Business sophistication Pillar #12: Innovation	<b>Subindex 3: Innovation and Sophistication Factors</b>

**Table 4**  
**The Structure of the Global Competitiveness Index**

Source: WEF (2015)

In correspondence with each pillar there are a number of indicators. For example, pillar # 10 (Market size) exhibits four indicators: 10.01 Domestic market size index; 10.02 Foreign market size index; 10.03 GDP; and 10.04 Exports as a percentage of GDP. The criterion for numbering indicators is easily recognized: the number preceding the period indicates to which pillar the indicator belongs (e.g. the indicator *5.01 Secondary education enrolment* belongs to pillar # 5). The numerical value of the indicators results from two sources: hard data and survey information –based on the *World Economic Forum's Executive Opinion Survey*.

Given a particular country, each indicator has a rank out of the total number of countries involved in the computation of the GCI. This information can be found in the Country/Economy Profiles section of the World Economic Forum reports. The latest profiles for Argentina and Australia can be found in WEF (2015, pp. 96-97) and WEF (2015, pp. 100-101), respectively. For example, the indicator “2.07 Quality of electricity supply” has rank 124 for Argentina and rank 22 for Australia.

### **3.2. Key Connections Principle**

Within the context of this paper, an action plan for economic development is a scheme of action to improve national competitiveness. The reduction of the height of the barriers to competitiveness lies at the heart of any action plan.

Before we can discuss whether a given country has a substantial barrier to development, we need to define the term. Anything that detracts from national competitiveness is a *barrier to economic development*. Barriers range by degree of “height” from no barrier at all to extremely high barriers that retard economic development in a fundamental way. Because barriers may arise from many sources, estimating their height is extremely difficult.

There are two general points to be made here. First, the determinants of national competitiveness are vast, complex, and open-ended. Ideally, a systems approach to the economic development of a particular country would contemplate all the interactions in all directions between the various pillars of competitiveness. Second, the information conveyed by the numerical value of the indicators is better understood in comparison to a country of reference.

Taking into account all of the connections between pillars is not feasible if we want to say something more than ‘every pillar depends on every pillar.’ A *workable* systems approach to development should recognize that as a rule every pillar interacts with every pillar, but should also accept that some connections between pillars matter more than others depending on two factors: the position of the country on the Porter development path and relative weaknesses observed on specific indicators of national competitiveness with respect to a country of reference. For lack of a better term, we will call this guiding principle to carry out comparative economic development *key connections principle*.

Policymakers seeking to put forward a proposal for a development plan could proceed by two successive approximations. A first approximation would combine the key connections principle with the exposure of the barriers that impede economic progress. This approximation would identify

priority areas of reform. In the second approximation experts would be allocated to each priority area with the task of prescribing concrete reforms within a well-defined period of time.

#### 4. Comparison between Argentina and Australia based on National Competitiveness

A broad spectrum of actions can help Argentina to successfully navigate the Porter economic development path. Any action plan presupposes a platform as a starting point, that is, a set of pillars requiring change to propel economic development. The key question is what are the target pillars toward which the actions should be implemented?

##### 4.1. Barriers to Economic Development in Argentina

To state the obvious, health and skills are essential building blocks of economic development. A healthy workforce is of absolutely fundamental importance to a country's competitiveness. Poor health leads to sizable costs to business. For example, sick workers often operate at low levels of efficiency. Human capital accumulation is essential in a world of rapid change. The quantity and quality of education at all levels is the key to economic development. Primary education is necessary to increase the human capital of unskilled workers. Often, workers who have received little primary education can carry only simple manual tasks. The lack of basic education tends to impose limitations on business activities because firms find it difficult to move up the value chain. Today's globalizing economy requires well-educated workers who are able to perform complex tasks and adapt quickly to the evolving needs of firms. Secondary and tertiary education has to endow students with the tools to make headway in their lives.<sup>17</sup> Furthermore, pervasive and incessant innovation implies that staff training is today more important than ever. For example, continuous on-the-job training is a *sine qua non* for permanent upgrading of workers' skills.

A glance at the latest available indicators suggests that the performance of Argentina in pillar # 4 (Health and primary education) and pillar # 5 (Higher education and training) is far from Australia's high level of achievement but –generally speaking– satisfactory for a developing country in transition from stage 2 to stage 3 (see Table 5). This does not imply that pillars # 4 and # 5 should be ignored,<sup>18</sup> but there are other pillars showing bigger weaknesses.

Current phase of the economy	Pillar # 4: Health and primary education (Rank/140)	Pillar # 5: Higher education and training (Rank/140)
Argentina, phase D (in transition)	68	39
Australia, phase E (creative economy)	9	8

**Table 5**  
**Argentina and Australia: ranks for pillars # 4 and # 5**  
 Source WEF (2015, p. 96 and p. 100)

In fact, even a casual glance at Table 6 reveals that Argentina’s biggest weaknesses are located in pillar # 1 (Institutions), pillar # 3 (Macroeconomic environment), pillar # 6 (Goods market efficiency), pillar # 7 (Labour market efficiency), and pillar # 8 (Financial market development). The performance discrepancies are abysmal.

Current phase of the economy	Pillar # 1 (Rank/140)	Pillar # 3 (Rank/140)	Pillar # 6 (Rank/140)	Pillar # 7 (Rank/140)	Pillar # 8 (Rank/140)
Argentina Phase D (in transition)	135	114	138	139	132
Australia Phase E (creative economy)	19	28	27	36	7

**Table 6**  
**Argentina and Australia: ranks for pillars # 1, # 3, # 6, # 7 and # 8**

Source WEF (2015, p. 96 and p. 100)

To bring out the most important barriers that impede economic progress in Argentina, we introduce the notion of “red flag.” In general, a *red flag* signals an important impediment to economic development in relation to a country of reference. More precisely, let  $I_{Arg}$  be any indicator for Argentina out of 144 indicators in the Global Competitiveness Index and  $I_{Aus}$  the same indicator for Australia. The indicator  $I_{Arg}$  is said to raise a *red flag* for Argentina if the discrepancy of the Argentinian and Australian positions in the global ranking is greater than seventy (70) positions, that is,

$$70 < \text{Rank of } I_{Arg} - \text{Rank of } I_{Aus} < 140 \quad (3)$$

where it is assumed that 140 is the total number of countries included in the GCI. For example, the indicator “4.09 Quality of primary education” in pillar # 4 has rank 98 for Argentina and rank 12 for Australia so that Argentina gets a red flag for the indicator 4.09. The computation of the discrepancies

$$H_{Arg/Aus} = \text{Rank of } I_{Arg} - \text{Rank of } I_{Aus}, \quad (4)$$

for all the 144 indicators is presented in appendix A to the present paper.

The question now arises of how to measure the height of the barriers to economic development in a form which is readily interpreted by policymakers and will allow us to sketch a plan for action. In what follows, we take for granted that the relative position of Argentina with respect to Australia, namely:  $H_{Arg/Aus}$ , is a proxy for the height of the corresponding barrier. The height of a barrier can be ‘extremely high,’ ‘very high,’ ‘substantial,’ and ‘moderate to low.’

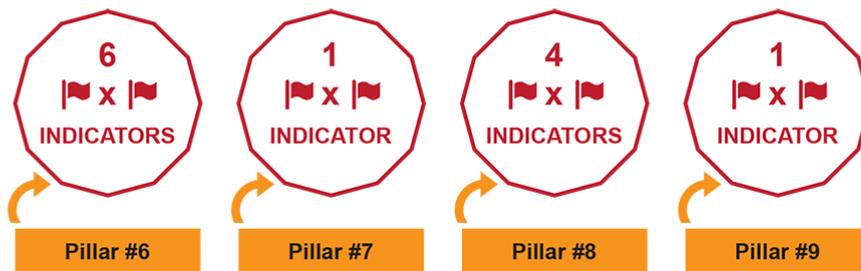
In practice, the lines of separation between these categories involve an inevitable element of arbitrariness. To draw the line of separation between the first two categories of heights we proffer the following numerical representation:  $100 < H_{Arg/Aus} < 140$  ('extremely high' barrier to economic development), and  $70 < H_{Arg/Aus} \leq 100$  ('very high' barrier to economic development). Furthermore, to facilitate visualization, we use an impressionistic device: a double red flag  $\mathbb{R} \times \mathbb{R}$  is attached to any indicator of national competitiveness falling into the 'extremely high' category, and a single red flag  $\mathbb{R}$  identifies any indicator falling into the 'very high' category. The complete classificatory scheme is shown in Table 7.

Intervals of barrier height based on $H_{Arg/Aus}$	Categories of height
$100 < H_{Arg/Aus} < 140$	<b>Extremely high (<math>\mathbb{R} \times \mathbb{R}</math>)</b>
$70 < H_{Arg/Aus} \leq 100$	<b>Very high (<math>\mathbb{R}</math>)</b>
$50 < H_{Arg/Aus} \leq 70$	Substantial
$0 \leq H_{Arg/Aus} \leq 50$	Moderate to low

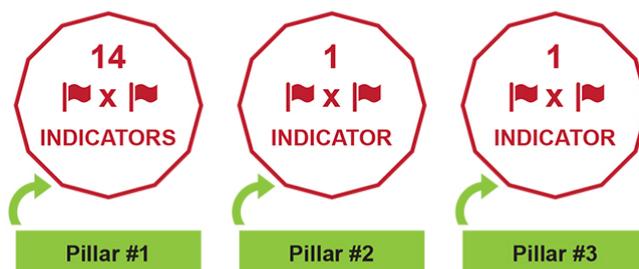
**Table 7**  
**Categories of height based on  $H_{Arg/Aus}$**

#### 4.2. Outlining a Plan for Economic Development

There are many impediments to the economic development of Argentina requiring urgent attention. The indicators to be targeted to move successfully along the Porter economic development path allow us to outline a sensible plan for the economic development of Argentina. The key weaknesses that need to be tackled are shown diagrammatically. Figure 2 shows the pillars that contain extremely high barriers to economic development associated with the subindices 1 (Basic Requirements) and 2 (Efficiency Enhancers). The indicators displaying double red flags are specified in Appendix B. The subindex 3 (Innovation and Sophistication Factors) does not show any extremely high barrier to economic development in Argentina.



**Efficiency Enhancers:** 12 indicators signalling **Extremely High** barriers to development

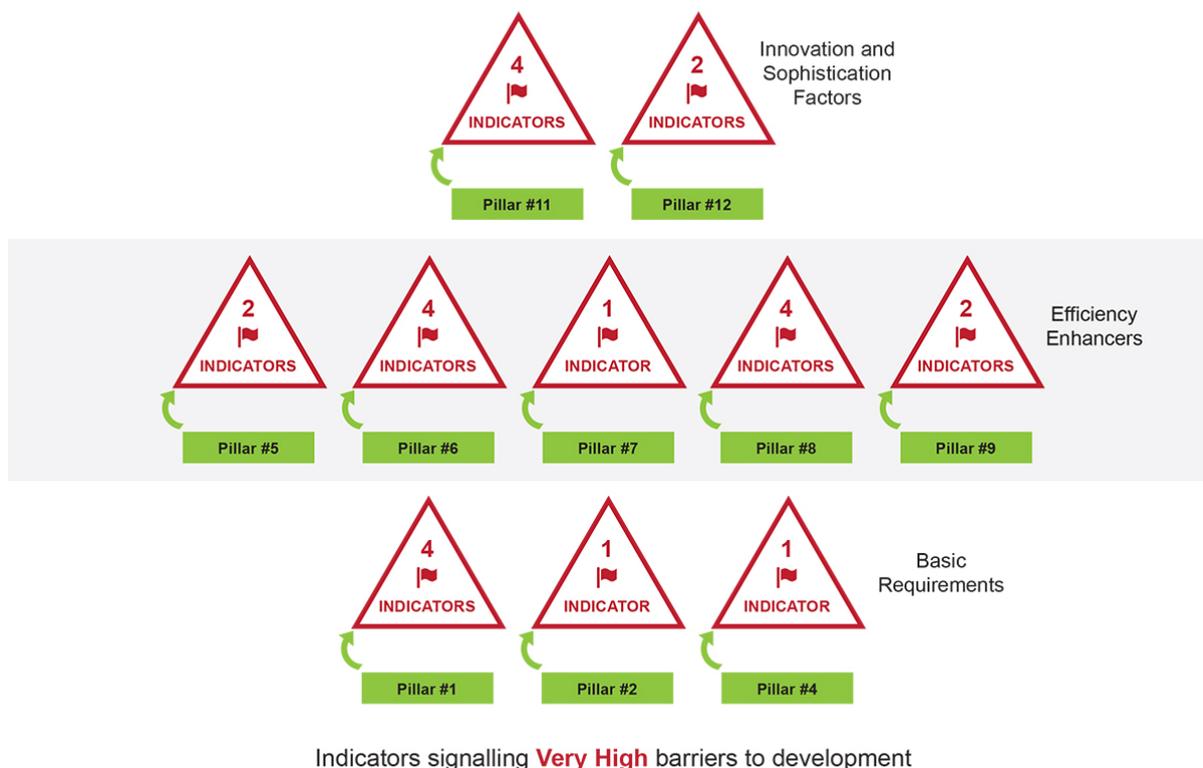


**Basic Requirements:** 16 indicators signalling **Extremely High** barriers to development

**Figure 2**  
**Double red flags: 28 indicators**

It should be emphasized that Figure 2 does not capture all the retardatory factors that may be at work in Argentina. In fact, the empirical evidence shows that there are pillars displaying indicators that fall into the group of ‘very high’ barriers to economic development. Figure 3 identifies these pillars involving twenty five (25) indicators that cannot and should not be overlooked. In particular, subindex 3, which is of absolutely fundamental importance to attain a creative economy status, exhibits six (6) indicators that need to be addressed. The specification of the indicators receiving a single red flag is shown in Appendix C.

This completes the first approximation to put forward a proposal for economic development in Argentina. The second approximation requires careful expert analysis that cannot be covered in a single paper.



**Figure 3**  
**Single red flags: 25 indicators**

## 5. Summary and Concluding Remarks

In broad terms, the major points of the preceding discussion can be easily outlined. Porter’s approach to economic development emerged from induction. His pioneer economic analysis brought together appropriate classes of facts, arranged them, and inferred from them a narrative theory of economic development. We have attempted to add to the literature on stage economic development by introducing the Porter economic development path –a curve showing that economies evolve according to a pattern consisting of five distinct phases of development– and stating the Porter’s law of economic development –which asserts that the movement along the development path is governed by the degree of competitiveness of the economy. We have used the World Economic Forum data on competitiveness to appraise the height of the barriers to economic development in Argentina (target country) with respect to Australia (benchmark country).

Simply relying on private property and economic freedom as a panacea for economic development problems is not enough. Countries at different phases of economic development face distinctly different challenges because of two reasons: the transition from one phase to another is not automatic, and there is no guaranteed that once a country has attained an elevated position in the global economic landscape it will remain there forever. There must be some action plan in place that encourages the country to successfully navigate the Porter economic development path. A

sketch of such a plan has been formulated focusing on the size of the development barriers in Argentina with respect to Australia.

The methodology used in this paper has general applicability. For example, the target country need not be a developing country. At the heart of this methodology is a guiding principle, namely: even though all pillars of national competitiveness are important, the position of the target country on the Porter economic development path and the relative weaknesses on specific indicators of competitiveness with respect to a benchmark country must be brought into sharp focus (key connections principle). The procedure to design an action plan to overcome barriers to economic development may be set out in five steps: step 1, choose a target country; step 2, select a benchmark country; step 3, obtain the numerical value of the 144 indicators included in the Global Competitiveness Index for both countries; step 4, appraise the height of the development barriers in the target country as the difference between the numerical values referred to as in step 3; step 5, establish a platform for action focusing on abnormally high barriers to development.

Two final points –obvious, but often forgotten– are worth emphasizing. First, the decision to implement a plan for economic development is a function to be performed by the national government. This function falls outside the sphere of the individual. Or, to put it differently, the decision to design –and implement– a development plan would be undertaken by no one if the government does not undertake it. Second, any development plan has to be clearly explained to the public in general, and decision makers in particular. Governments are too often unable to convey the message that their fundamental purpose in designing and implementing development policies is a stronger society and more fulfilled people. In particular, politicians need to explain better to the public that sensible development policy is not an end in itself but the means to a better society and people being more able to achieve their potential.

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## APPENDIX A. Argentina and Australia: Comparing Values of Indicators of Competitiveness

This appendix details the rank of each indicator of competitiveness included in the Global Competitiveness Index (GCI) for Argentina and Australia. The first column ( $I_{Arg}$ ) shows Argentina's rank out of 140 economies included in the 2015 GCI, while the second column ( $I_{Aus}$ ) presents the rank for Australia corresponding to the same indicator. The third column shows the difference between ranks, that is,  $H_{Arg/Aus} = I_{Arg} - I_{Aus}$ .

### Pillar # 1: Institutions

	$I_{Arg}$	$I_{Aus}$	$H_{Arg/Aus}$
1.01 Property rights	134	16	118
1.02 Intellectual property protection	125	13	112
1.03 Diversion of public funds	136	16	120
1.04 Public trust in politicians	137	25	112
1.05 Irregular payments and bribes	120	16	104
1.06 Judicial independence	129	13	116
1.07 Favouritism in decisions of government officials	139	27	112
1.08 Wastefulness of government spending	138	53	85
1.09 Burden of government regulation	135	80	55
1.10 Efficiency of legal framework in settling disputes	129	22	107
1.11 Efficiency of legal framework in challenging regulations	134	23	111
1.12 Transparency of government policy making	131	24	107
1.13 Business costs of terrorism	46	58	-12
1.14 Business costs of crime and violence	121	35	86
1.15 Organized crime	115	29	86
1.16 Reliability of police services	131	14	117
1.17 Ethical behaviour of firms	138	13	125
1.18 Strength of auditing and reporting standards	115	9	106
1.19 Efficacy of corporate boards	92	9	83
1.20 Protection of minority shareholders' interests	123	18	105
1.21 Strength of investor protection	55	69 =	-14

### Pillar # 2: Infrastructure

	$I_{Arg}$	$I_{Aus}$	$H_{Arg/Aus}$
2.01 Quality of overall infrastructure	122	35	87
2.02 Quality of roads	108	41	67
2.03 Quality of railroad infrastructure	93	34	59
2.04 Quality of port infrastructure	81	32	49
2.05 Quality of air transport infrastructure	92	27	65
2.06 Available airline seat km/week, millions	31	7	24
2.07 Quality of electricity supply	124	22	102
2.08 Mobile telephone subscriptions/100 pop.	13	43	-30
2.09 Fixed-telephone lines/100 pop.	47	23	24

### Pillar # 3: Macroeconomic environment

	I <sub>Arg</sub>	I <sub>Aus</sub>	H <sub>Arg/Aus</sub>
3.01 Government budget balance, %GDP	64	83	- 19
3.02 Gross national savings, % GDP	80	46	34
3.03 Inflation, annual % change	n/a	1	(n/a)*
3.04 General government debt, % GDP	81	48	33
3.05 Country credit rating, 0 –100 (best)	122	12	110

\* The rate of inflation for Argentina is not available, but it is recognized as the “most problematic factor for doing business” in Argentina WEF (2016, p. 96). In relation to the ‘inflation’ indicator, Australia occupies the number one in the ranking of all 140 countries. Consequently, there are reasons to believe that the indicator ‘inflation’ in Argentina would receive a red flag.

### Pillar # 4: Health and primary education

	I <sub>Arg</sub>	I <sub>Aus</sub>	H <sub>Arg/Aus</sub>
4.01 Malaria case/ 100,000 pop	7	n/a	n/a
4.02 Business impact of malaria	2	n/a	n/a
4.03 Tuberculosis cases/100.000 pop.	52	14	38
4.04 Business impact of tuberculosis	30	14	16
4.05 HIV prevalence, % adult pop.	74	1	75
4.06 Business impact of HIV/AIDS	62	24	38
4.07 Infant mortality, deaths/1,000 live births	62	22	40
4.08 Life expectancy, years	50	8	42
4.09 Quality of primary education	98	12	86
4.10 Primary education enrolment, net %	55	34	21

### Pillar # 5: Higher education and training

	I <sub>Arg</sub>	I <sub>Aus</sub>	H <sub>Arg/Aus</sub>
5.01 Secondary education enrolment	18	1	17
5.02 Tertiary education enrolment, gross %	11	5	6
5.03 Quality of the education system	108	13	95
5.04 Quality of math and science education	113	27	86
5.05 Quality of management schools	35	19	16
5.06 Internet access in schools	75	6	69
5.07 Availability of specialized training services	53	10	43
5.08 Extent of staff training	88	24	64

### Pillar # 6: Goods market Efficiency

	I <sub>Arg</sub>	I <sub>Aus</sub>	H <sub>Arg/Aus</sub>
6.01 Intensity of local competition	123	9	114
6.02 Extent of market dominance	96	47	49
6.03 Effectiveness of anti-monopoly policy	129	32	97
6.04 Effect of taxation on incentives to invest	139	91	48
6.05 Total tax rate, % profits	140	101	39
6.06 No. of procedures to start a business	136	9	127
6.07 No. of days to start a business	105	4	101
6.08 Agriculture policy costs	137	18	119
6.09 Prevalence of non-tariffs barriers	139	12	127
6.10 Trade tariffs, % duty	118	37	81
6.11 Prevalence of foreign ownership	84	14	70
6.12 Business impact of rules on FDI	136	49	87
6.13 Burden of customs procedures	139	19	120
6.14 Imports as a % of GDP	138	134	4
6.15 Degree of customer orientation	121	24	97
6.16 Buyer sophistication	60	37	23

### Pillar # 7: Labour Market Efficiency

	I <sub>Arg</sub>	I <sub>Aus</sub>	H <sub>Arg/Aus</sub>
7.01 Cooperation in labour-employer relations	126	70	56
7.02 Flexibility of wage determination	135	117	18
7.03 Hiring and firing practices	135	126	9
7.04 Redundancy costs, weeks of salary	125	45	80
7.05 Effect of taxation on incentives to work	140	110	30
7.06 Pay and productivity	130	66	64
7.07 Reliance on professional management	61	14	47
7.08 Country capacity to retain talent	68	24	44
7.09 Country capacity to attract talent	120	16	104
7.10 Women in labour force, ratio to men	100	55	45

### Pillar # 8: Financial Market Development

	I <sub>Arg</sub>	I <sub>Aus</sub>	H <sub>Arg/Aus</sub>
8.01 Availability of financial services	132	19	113
8.02 Affordability of financial services	137	24	113
8.03 Financing through local equity market	125	14	111
8.04 Ease of access to loans	132	39	93
8.05 Venture capital availability	126	40	86
8.06 Soundness of banks	87	3	84
8.07 Regulation of securities exchanges	125	10	115
8.08 Legal rights index, 0–12 (best)	100	4	96

**Pillar # 9: Technological readiness**

	<b>I<sub>Arg</sub></b>	<b>I<sub>Aus</sub></b>	<b>H<sub>Arg/Aus</sub></b>
9.01 Availability of latest technologies	126	24	102
9.02 Firm-level technology absorption	115	22	93
9.03 FDI and technology transfer	138	43	95
9.04 Individuals using Internet, %	48	19	29
9.05 Fixed-broadband Internet subscriptions/100 pop.	53	33	20
9.06 Int'l Internet bandwidth, kb/s per user	54	37	17
9.07 Mobile-broadband subscriptions/100 pop.	51	10	41

**Pillar # 10: Market size**

	<b>I<sub>Arg</sub></b>	<b>I<sub>Aus</sub></b>	<b>H<sub>Arg/Aus</sub></b>
10.01 Domestic market size index, 1–7 (best)	25	19	6
10.02 Foreign market size index, 1 – 7 (best)	47	33	14
10.03 GDP (PPP\$ billions)	24	19	5
10.04 Exports as a percentage of GDP	134	122	12

**Pillar #11: Business sophistication**

	<b>I<sub>Arg</sub></b>	<b>I<sub>Aus</sub></b>	<b>H<sub>Arg/Aus</sub></b>
11.01 Local supplier quantity	115	48	67
11.02 Local supplier quality	108	18	90
11.03 State of cluster development	116	40	76
11.04 Nature of competitive advantage	114	26	88
11.05 Value chain breadth	87	61	26
11.06 Control of international distribution	101	40	61
11.07 Production process sophistication	76	29	47
11.08 Extent of marketing	62	23	39
11.09 Willingness to delegate authority	94	17	77

**Pillar #12: R&D Innovation which exhibits eight indicators:**

	<b>I<sub>Arg</sub></b>	<b>I<sub>Aus</sub></b>	<b>H<sub>Arg/Aus</sub></b>
12.01 Capacity for innovation	74	25	49
12.02 Quality of scientific research institutions	38	8	30
12.03 Company spending on R&D	99	27	72
12.04 University-industry collaboration in R&D	66	21	45
12.05 Government procurement of advanced tech products	135	70	65
12.06 Availability of scientists and engineers	100	17	83
12.07 PCT patent applications	65	21	44

## Appendix B. Extremely high barriers to economic development in Argentina

This appendix presents the identification of the double red flags indicators tacitly referred to as in Figure 2.

Indicator included in Basic Requirements	Extremely high barrier to economic development in Argentina with respect to Australia
1.01 Property rights	R x R
1.02 Intellectual property protection	R x R
1.03 Diversion of public funds	R x R
1.04 Public trust in politicians	R x R
1.05 Irregular payments and bribes	R x R
1.06 Judicial independence	R x R
1.07 Favouritism in decisions of government officials	R x R
1.10 Efficiency of legal framework in settling disputes	R x R
1.11 Efficiency of legal framework in challenging regulations	R x R
1.12 Transparency of government policy making	R x R
1.15 Organized crime	R x R
1.16 Reliability of policy services	R x R
1.17 Ethical behaviour of firms	R x R
1.18 Strength of auditing and reporting standards	R x R
1.20 Protection of minority shareholders' interests	R x R
2.07 Quality of electricity supply	R x R
3.05 country credit rating	R x R

Indicator included in Efficiency Enhancers	Extremely high barrier to economic development in Argentina with respect to Australia
6.01 Intensity of local competition	R x R
6.06 Number of procedures to start a new business	R x R
6.07 Number of days to start a new business	R x R
6.08 Agriculture policy costs	R x R
6.09 Prevalence of non-tariff barriers	R x R
6.13 Burden of customs procedures	R x R
7.09 Country capacity to attract talent	R x R
8.01 Availability of financial services	R x R
8.02 Affordability of financial services	R x R
8.03 Financing through local equity market	R x R
8.07 Regulation of securities exchanges	R x R
9.01 Availability of latest technologies	R x R

## Appendix C. Very high barriers to economic development in Argentina

This appendix presents the identification of the single red flags indicators tacitly referred to as in Figure 3.

Indicator included in Basic Requirements	Very high barrier to economic development in Argentina with respect to Australia
1.08 Wastefulness of government spending	R
1.14 Business costs of crime and violence	R
1.15 Organized crime	R
1.19 Efficacy of corporate boards	R
2.01 Quality of overall infrastructure	R
4.09 Quality of primary education	R

Indicator included in Efficiency Enhancers	Very high barrier to economic development in Argentina with respect to Australia
5.03 Quality of the education system	R
5.04 Quality of math and science education	R
6.03 Effectiveness of anti-monopoly policy	R
6.10 Trade tariffs	R
6.12 Business impact of rules on FDI	R
6.15 Degree of customer orientation	R
7.04 Redundancy costs	R
8.04 Ease of access to loans	R
8.05 Venture capital availability	R
8.06 Soundness of banks	R
8.08 Legal rights	R
9.02 Firm-level technology absorption	R
9.03 FDI and technology transfer	R

Indicator included in Innovation and Sophistication Factors	Very high barrier to economic development in Argentina
11.02 Local supplier quality	R
11.03 State of cluster development	R
11.04 Nature of competitive advantage	R
11.09 Willingness to delegate authority	R
12.03 Company spending on R&D	R
12.06 Availability of scientists and engineers	R

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<sup>1</sup> The foundations of modern growth economics, from the neoclassical paradigm to the current frontier in growth theory, can be found in the ground-breaking book *Introduction to Modern Economic Growth* by Acemoglu (2009).

<sup>2</sup> The last two chapters of Acemoglu (2009) analyse the impact of institutions on long-run development.

<sup>3</sup> Specifically, Argentina has a comparative advantage in arable land (Australia cannot match the richness of the pampas) and Australia displays a comparative advantage in minerals (Argentina cannot match the natural endowments of iron ore, high-grade coal, and base metals of the down-under).

<sup>4</sup> As to the conceptual difference between economic development and economic growth, see (Acemoglu 2009, esp. pp. 694-695).

<sup>5</sup> The original presentation of Porter's theory can be found in (Porter 1990, Ch. 10). Porter initially suggested four distinct stages of national competitive development. More concretely, Porter's original terminology is: factor-driven economies (stage 1); investment-driven economy (stage 2); innovation-driven economy (stage 3); and wealth-driven economy (stage 4).

<sup>6</sup> Porter (1990) sees stage 2 as driven by the ability and willingness to invest. The above characterization (stage 2 driven by efficiency) is due to (Sala-i-Martin et al. 2007, p. 7, fn. 19).

<sup>7</sup> This point is forcibly made by (Sala-i-Martin and Artadi 2004, p. 58).

<sup>8</sup> A collection  $\{E_1, E_2, E_3, E_4, E_5\}$  of sets with union  $E$  is a *partition* of set of all economies  $E$  if the distinct members of  $S$  have no elements in common (for example, the intersection between  $E_1$  and  $E_2$  is empty, the intersection between  $E_1$  and  $E_5$  is empty, etc.).

<sup>9</sup> For more details, see (Sala-i-Martin et al. p. 10, esp. fn. 21).

<sup>10</sup> Some economists employ the language of game theory and refer to 'institutions' as the 'rules of the game' with the connotation that economic agents play a game, and that the rules of the game define what they and others can do to attain their objectives.

<sup>11</sup> If this were not the case  $C(t)$  would not have a finite value. Although (2) allows the number of lags to be infinite, in practice a finite lag version has to be imposed.

<sup>12</sup> A corollary advantage of Porter's approach lies in the fact that the theory is simple enough for policymakers to visualize their role in the domain of economic development.

<sup>13</sup> In the latest World Economic Forum report WEF (2016) Argentina and Australia remain in phases D and E, respectively.

<sup>14</sup> As an illustration, the political instability in the 36 years from 1946 up to 1983 was astonishing. Only one presidency finished its constitutional period, while four presidencies were interrupted by military coups and another four took place within these coups. This period recorded 37 Economy Ministers!

<sup>15</sup> The thrust of the innovation package NISA (2015) can be condensed in the following motto: "Risk-takers, Growth-makers."

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<sup>16</sup> See Sala-i-Martin and Artadi (2004).

<sup>17</sup> The commoditization of tertiary education degrees is counterproductive. In particular, university students should come to terms with the fact that rigorous learning with understanding is crucial for sound applications of the acquired knowledge in the real world.

<sup>18</sup> The Argentinian situation for the quality of primary education, the quality of the education system, and the quality of math and science education is far from satisfactory. The ranks out of 140 countries are 98 (4.09 Quality of primary education); 108 (5.03 Quality of the education system); and 113 (5.04 Quality of math and science education). WEF (2015, p. 97).