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Inter-American Development Bank
Country Department Andean Group

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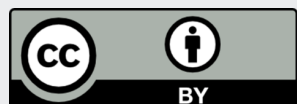
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Priorities for Private Investment in the Andean Countries

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Abstract

The Andean countries are traditionally highly exposed to international prices, primary exports, and foreign investment flows from developed economies. Since 2014, the global downturn has affected the region's productivity and growth. This scenario is ongoing, especially after the COVID-19 shock, and the country-specific factors have not acted as robust buffers to prevent the growth slowdown; the region needs a growth agenda. This paper explores the nine categories of the standard growth diagnostic framework in clustering results using private investment and GDP per capita over 129 countries in the past two decades. We also carry out a gap analysis and use a generalized ordered probit model to identify mean advantages, clusters' dissimilarities, and investment priorities to scale up from one cluster to another in search of higher GDP per capita. We identify nine clusters. During the period 2016–2019, Bolivia and Venezuela were in Cluster 5, Ecuador and Peru in Cluster 6, and Colombia was in Cluster 7. The main findings by clusters suggest prioritizing infrastructure, the reduction of microrisks, and—in part—human capital and local savings. Nevertheless, heterogeneity in the impact on transition and intracusters prevails. So, even though the priority agenda might be similar, policy making might be more demanding for some countries than others.

Keywords: Andean countries, cluster analysis, generalized ordered probit, growth diagnostic, private investment

JEL Classification: E22, O11, O40

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1. Introduction

Global economic growth has been adjusting downward in recent years. Less dynamism in investment and trade, significant debt accumulation, lower commodity prices, and low monetary policy rates in developed economies are generating a slowdown in aggregate demand in emerging countries, negatively impacting potential growth rates. The Andean countries (Bolivia, Colombia, Ecuador, Peru, and Venezuela), particularly commodity exporters, are not exempt from this current trend. These economies with their high dependence on foreign trade, commodity prices, and foreign direct investment from developed economies are especially vulnerable to changes in external factors.

This paper performs a two-dimensional cluster analysis with the private investment and the gross domestic product (GDP) per capita over 129 countries and 4 periods in the past two decades (2001–2005, 2006–2010, 2011–2015, and 2016–2019). Then, we carry out a gap analysis and use a generalized ordered probit model (GOPROBIT) with nine standardized factors from the growth diagnostic framework¹ to shed light on investment constraints, clusters' dissimilarities, and policy priorities for promoting growth in the Andean countries.

Historically, average growth in the Andean region has been marked by individual stagnations and depressions. In the early 1980s, a decline in prices of commodities such as copper and silver alongside foreign debt accumulation and mass public expenditure triggered a decade of macroeconomic, financial, and social crisis in Peru, so that by the end of the decade the country had experienced a GDP collapse of over 25 percent. The 1980s also saw a collapse in oil prices, leading to a negative shock in Venezuela, with the economy contracting more than 8 percent between 1988 and 1990. Since 2013 Venezuela has suffered its worst economic downturn ever; notably, GDP shrunk more than 65 percent between 2016 and 2019. In the late 1990s, increasing public debt and a liquidity crisis in Ecuador led to poor macroeconomic performance and eventually pushed the country toward dollarization, which occurred in 2000.

¹See Hausmann et al. (2005) for details.

The Andean region did benefit from a relatively steady increase in real GDP growth rates beginning in the early 2000s; however, after 2014 it experienced generalized sluggish growth. In particular, demand-side, supply-side, monetary, and global risk factors generated a significant fall in international commodity prices of 37 percent between 2014 and 2016, with prices remaining below those of 2014 in the following years. The Andean economies are highly dependent on primary exports and the downturn in international prices negatively affected the region's productivity and growth.

Another negative shock was the recent COVID-19 pandemic, which slowed the pace of the already sluggish recovery. The current crisis has led to a persistent drop in real investment and hampered global growth, increasing the macroeconomic vulnerability of emerging economies in the region. This challenging scenario highlights the need for a growth agenda.

The terms of trade of commodities, labor force, and capital accumulation have traditionally driven the Andean region's economic performance (Deza and Moreno 2022). In particular, the terms of trade favored the region's productivity during the 2000s and contributed to capital accumulation and growth through 2014. However, the use of capital was not fully exploited, and growth and total productivity have suffered a slowdown in recent years. Therefore, this paper will focus on capital accumulation from private investment intended to reduce regional dependency on external volatility and complement growth factors.

The contribution of this paper is threefold. Firstly, the paper integrates the standard growth diagnostic framework with a clustering approach to reveal the advantages and priorities of the Andean countries in search of higher GDP per capita levels. We consider 25 variables associated with geography, human capital, infrastructure, microrisks, macrorisks, market failures, international finance, local savings, and financial intermediation. Secondly, this paper complements a gap analysis with results from a GOPROBIT to account for interaction and nonlinear effects across growth factors and estimates country-specific transition probabilities among clusters. Finally, current times require a global growth agenda, and this paper may be helpful to design and support high-impact reform priorities to promote private capital accumulation and

growth in the Andean countries.

The paper is organized as follows. In [Section 2](#), we examine the prepandemic potential growth of the Andean region. [Section 3](#) presents an overview of the standard growth diagnostic framework and reports the data and clustering results. [Section 4](#) describes the transitional dynamic in search of higher GDP per capita and policy priorities that can promote growth in the Andean countries. [Section 5](#) discusses the conditions that may have defined each country’s growth path and transitional dynamic, while [Section 6](#) concludes.

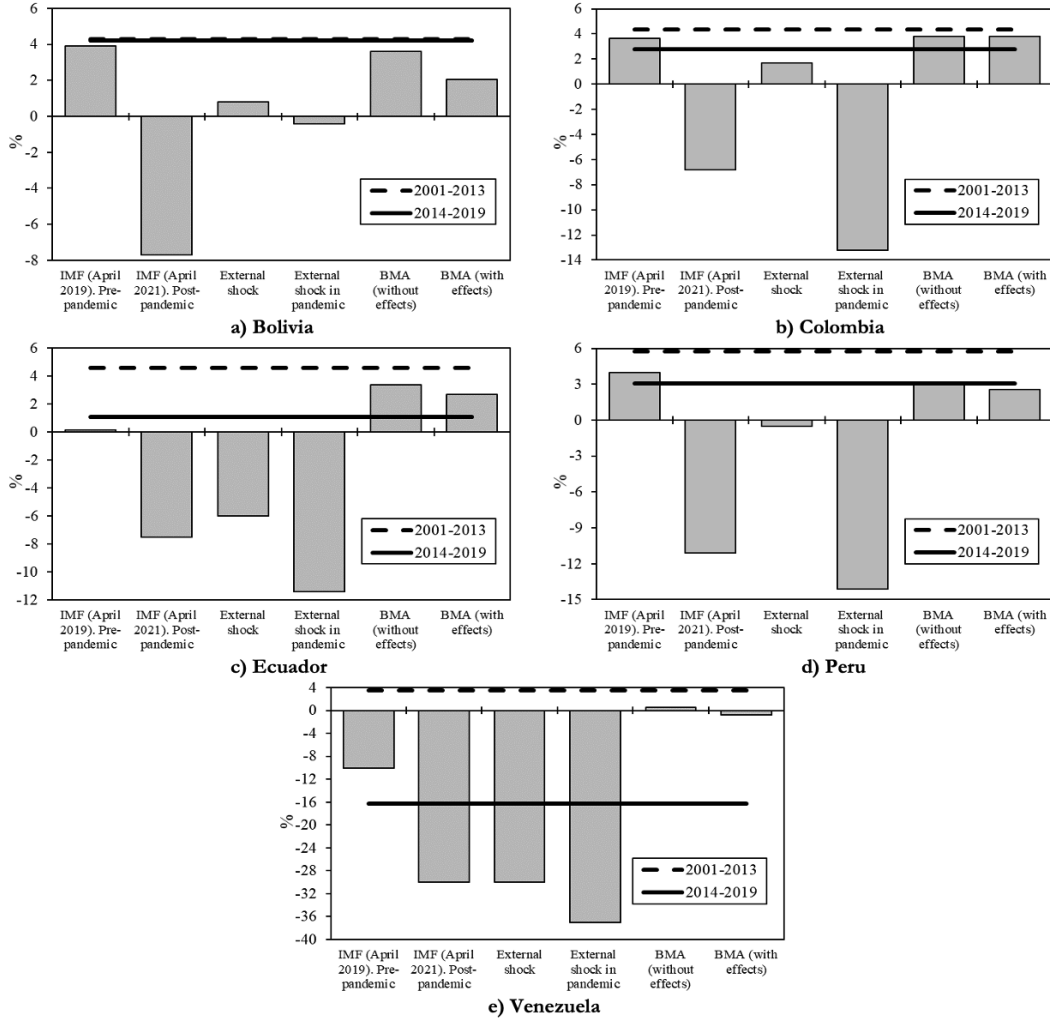
2. Growth in the Andean Region

The world’s developed economies are on a path of low growth rates. Commodity prices are at lower levels than before 2014, while the quantitative easing carried out after the financial crisis of 2008–2009 has intensified in the wake of the pandemic; however, the macroeconomic aggregates are less sensitive to positive adjustments. There is also significant debt accumulation, a decrease in trade, and positive net national savings, reflecting a lower propensity for real investment. The onset of lower aggregate demand and reduced recovery capacity have reduced the potential for growth in developed countries, which may grow below their historical rates in the coming years.

The Andean region grew at a high rate until 2014, but the opportunity to promote local investment and reduce exposure to foreign inflows was not fully exploited (Ruiz-Arranz and Deza [2018](#), Deza and Moreno [2022](#)). The region experienced a slowdown after 2014 and remains highly vulnerable to external shocks in terms of trade and investment flows, mainly due to the sluggish recovery experienced by the developed countries after the global financial crisis and even more markedly during and after the COVID-19 pandemic shock (Abuelafia et al. [2020](#), Banerjee et al. [2020](#), Beverinotti et al. [2020](#), Díaz-Cassou et al. [2020](#), Manzano and Saboin [2020](#)). Furthermore, the Andean countries face their own institutional, fiscal, monetary, and productivity challenges (Díaz-Cassou and Ruiz-Arranz [2018](#), Ruiz-Arranz and Deza [2018](#), Abuelafia [2020](#), Andrian et al. [2020](#), Carrillo-Maldonado and Díaz-Cassou [2023](#)). Labor

and capital accumulation are not contributing to productivity and growth as they did prior to 2014 (Lotti 2018, Deza and Moreno 2022). Even before the pandemic, the business climate, the labor market, and institutionalism represented challenges for the sustainable growth of the private sector for the Andean region (Beverinotti and Deza 2020, Castilleja-Vargas 2020, De la Cruz et al. 2020).

Figure 1: Expected growth rate by country in the Andean region, 2020



Source: Carrillo-Maldonado and Díaz-Cassou (2023), Banerjee et al. (2020), IMF-WEO (2019, April), IMF-WEO (2021, April), Maldonado (2021), and CAN/IDB.

Figure 1 shows the expected and observed growth rates for each Andean

country for 2020 and previous periods. The deceleration in averaged growth rates from 2001–2013 to 2014–2019 is clear (excluding Venezuela, the region averaged 4.7 percent real growth from 2001 to 2013 versus 2.8 percent from 2014 to 2019). We also observe how the International Monetary Fund (IMF) adjusted its estimates sharply downward right after the pandemic shock. Furthermore, growth simulations based on Banerjee et al. (2020) and Carrillo-Maldonado and Díaz-Cassou (2023) reveal the still high exposure of the region to the international dynamic.

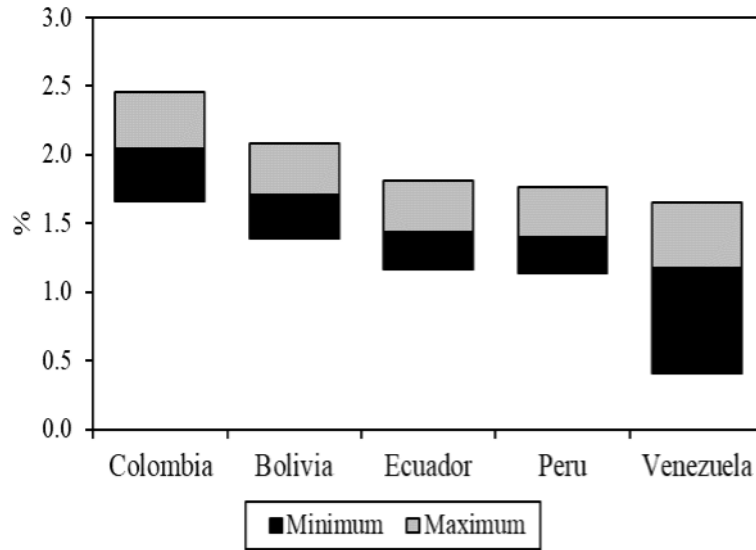
On the other hand, the slowdown seems structural. Maldonado (2021) presents potential growth results from Bayesian model averaging (BMA), with and without country effects, that identifies negative country-specific effects. It is these factors that are reducing expected growth.² In this context, we cannot rule out the presence of a slowdown even before the pandemic, which would be especially relevant to the determination of the particular factors that boost growth and local investment.

Some studies have made use of growth and systematic diagnostic frameworks to investigate this topic. For example, Calvo (2006) applies a growth diagnostic approach to Bolivia and concludes that the high risk of appropriation of returns is due to the fiscal and financial fragility and weak institutions. For Colombia, Meléndez and Harker (2008) use data from 1998 to 2006 to identify binding constraints from tax rule instability and government failures in addressing the armed conflict, while a 2015 systematic diagnostic from the World Bank warns about the country’s low level of integration in international markets, the lack of competition in domestic markets, and macroeconomic failures (World Bank 2015). The World Bank’s systematic diagnostic for Ecuador (World Bank 2018) reveals challenges in human capital, infrastructure, government effectiveness, and labor market opportunities. Hausmann and Klinger (2008) argue that coordination failures in the provision of public sector inputs and macrorisks have limited economic growth in Peru, while the 2017 World Bank

²See Maldonado (2021) for details about the BMA methodology and final outcomes with variables such as external openness, real exchange rates, the growth rate trend of the working-age population, and the technological gap with the United States. The paper uses an unbalanced panel with sample spaces of 40 variables and 102 countries spanning 1961–2017.

systematic diagnostic for Peru (World Bank 2017) identifies critical challenges in spatial disparities in development and productivity gap of its private sector relative to its peers. In Venezuela, the current crisis is severe and general, and efforts should focus mainly on resolving institutional weakness and government and market failures (Abuelafia and Saboin 2020). In this paper, we integrate a growth diagnostic framework with clustering as an alternative method for identifying policy priorities in search of higher GDP per capita.

Figure 2: Potential per capita growth rate, 2014–2019



Source: Maldonado (2021), UN-WPP (2021, November), and CAN/IDB.

Note: The plot represents the gaps between the average of potential growth to its minimum and maximum values throughout 2014–2019 after adjusting by population growth rate. The results are from the BMA methodology.

Figure 2 presents whether the expected potential growth of the region is enough to offset a productivity risk. There are some heterogeneities. During 2014–2019, the potential per capita growth ranged between 0.4 percent (Venezuela) to 2.5 percent (Colombia).³ In this case, the most unfavorable growth rate for Colombia (1.7 percent) is still higher than the most favorable scenario for Venezuela. Bolivia’s potential per capita growth was between 1.4

³The per capita results for Venezuela account for the migration crisis experienced after 2015, inclusive.

and 2.1 percent, while Ecuador and Peru evolved similarly.

Furthermore, it is important to complement foreign direct investment (FDI) flows in the region. More inflow of FDI is not a guarantee that higher levels of growth will be achieved; and when positive effects do occur, they depend greatly on local conditions and the presence of complementarities (Shatz 2001, Moosa 2002, Alfaro et al. 2010, Herzer 2012, Auguste et al. 2015). In this context, a growth agenda is necessary, and it is key to understand those specific factors that may lead to higher local investment.

3. Growth Diagnostics Framework and Clustering

3.1 Growth Diagnostics: An Overview

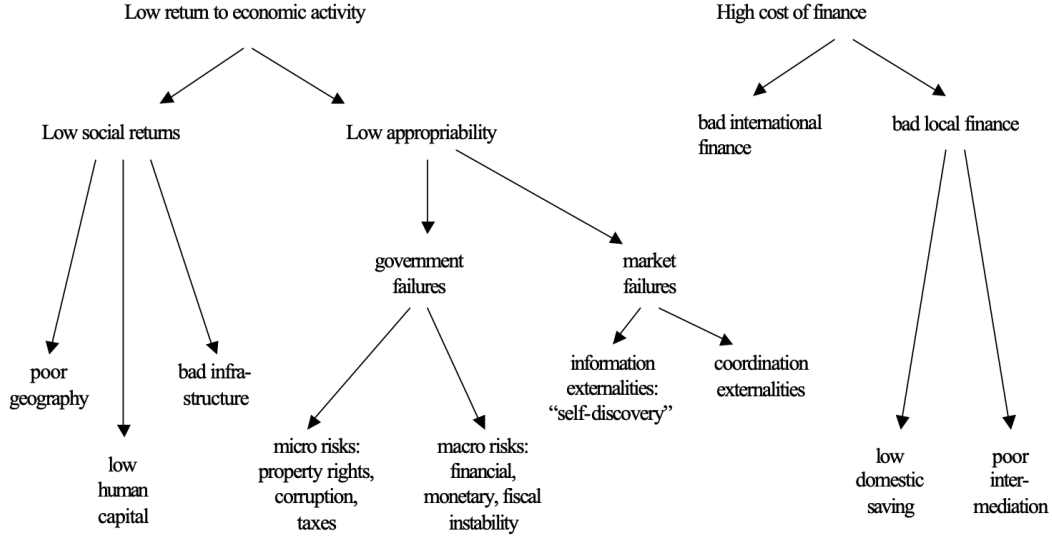
Hausmann et al. (2005) propose a unified analytical Bayesian framework (the HRV model) in order to track how the binding constraints on economic activity differ among settings. These authors suggest a strategy for identifying the most critical conditions hampering a country's growth and its level of private investment in a specific period in order to then design growth policies based on reform priorities.

Three considerations motivate these authors' approach. Firstly, a growth strategy is needed to achieve economic, social, and human well-being improvements. Secondly, the history of growth is mainly the history of capital formation, and general frameworks cannot address local specificities (domestic opportunities and constraints). Thirdly, investment drivers might not be perfect complements; therefore, some drivers should be more relevant than others.

The HRV framework assumes that emerging countries' growth problem derives from a shortage of capital equipment and productive capacity.⁴ The idea is to determine the root causes of the low levels of private investment and entrepreneurship, that is, the binding constraints to growth. Figure 3 depicts a decision tree of the channels in which a set of economic, political, and social factors is associated with the return to economic activity or the cost of finance.

⁴See Felipe et al. (2011) and Habermann and Padrutt (2011) for a detailed analysis of the strengths and weaknesses of this approach.

Figure 3: Growth diagnostics frameworks: Decision tree (Low levels of private investment)



Source: Hausmann et al. (2005).

In the decision tree the upper level shows two main causes of low private investment, (1) low return to economic activity and (2) high cost of finance (or low access to finance). The low returns to economic activity could be related to low social returns (from geography, human capital, or infrastructure), low appropriability due to government failures (macro or microrisks), or market failures (“self-discovery” and coordination). On the other hand, low savings or poor financial intermediation could be responsible for the high cost of finance. It should be noted that this decision tree is not exclusive. Two or more possible causes might be correlated, although they are not weighted equally with regard to constraining private investment.

Finally, Hausmann et al. (2008) systematize this framework, suggesting four general properties that a constraint should exhibit to be potentially binding: (1) the shadow price of the constraint should be high, (2) movements in the constraint should significantly move the objective function, (3) agents should be attempting to overcome the constraint, and (4) agents less intensive in that constraint should be more likely to survive and thrive (and vice versa).

3.2 Data

In a broader sense, this paper first applies a two-dimensional cluster analysis using private investment (i.e., the private gross fixed capital formation) and GDP per capita. We then use nine categories exposed by the HRV approach to identify investment constraints, clusters' dissimilarities, and policy priorities for promoting growth. Clustering has the immediate advantage of removing the functional arbitrariness of the analysis.

The categories are constructed aggregating 25 variables directly associated with HRV factors based on the conventional literature on growth constraints.⁵ These variables are distributed by category as follows: Geography (3), Human capital (2), Infrastructure (5), Microrisks (3), Macrorisks (3), Market failures (3), International finance (3), Local savings (2), and Local financial intermediation (1). We have yearly data from 2001 to 2019 for 129 countries;⁶ however, following the traditional framework of convergence in growth models⁷ and avoiding potential endogeneity, we average and collapse each variable into four intervals (2001–2005, 2006–2010, 2011–2015, and 2016–2019). Therefore, the full final sample is a strongly balanced panel of 516 observations. [Table 1](#) summarizes the variables.

⁵More variables were considered but discarded due to missing values or high correlation.

⁶The countries are Albania, Algeria, Angola, Argentina, Armenia, Australia, Austria, Azerbaijan, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, Bulgaria, Burkina Faso, Burundi, Cambodia, Cameroon, Canada, Central African Republic, Chile, China, Colombia, Comoros, Costa Rica, Croatia, Cyprus, Czech Republic, Côte d'Ivoire, Denmark, Dominican Republic, Ecuador, Egypt, El Salvador, Estonia, Eswatini, Finland, France, Gabon, Georgia, Germany, Ghana, Greece, Guatemala, Guinea, Guyana, Honduras, Hungary, Iceland, India, Indonesia, Iran, Ireland, Israel, Italy, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Korea, Kuwait, Kyrgyz Republic, Latvia, Lesotho, Lithuania, Madagascar, Malawi, Malaysia, Mali, Malta, Mauritius, Mexico, Moldova, Mongolia, Morocco, Mozambique, Namibia, Nepal, Netherlands, New Zealand, Nicaragua, Niger, Nigeria, North Macedonia, Norway, Oman, Pakistan, Panama, Paraguay, Peru, Philippines, Poland, Portugal, Republic of Congo, Romania, Russia, Rwanda, Saudi Arabia, Senegal, Sierra Leone, Singapore, Slovak Republic, Slovenia, South Africa, Spain, Sri Lanka, Sudan, Sweden, Switzerland, Thailand, Togo, Trinidad and Tobago, Tunisia, Turkey, Uganda, Ukraine, United Kingdom, United States, Uruguay, Venezuela, Vietnam, and Zambia.

⁷The models of convergence are based on the seminal work by Ramsey (1928) and the extensions of Koopmans (1963) and Cass (1965).

Table 1: Summary of Variables, 2001–2019

Category	Description	Mean	Standard Deviation	Minimum	Maximum		
Variable of Interest	<i>Private gross fixed capital formation (% GDP)</i> . IMF WEO (October 2020), WB WDI, and CAN/IDB.	16.96	5.98	2.00	46.76		
Main Benchmark	<i>Gross domestic product per capita (current US\$, ppp)</i> . IMF WEO (April 2016), and WB WDI.	18830.4	17483.9	558.1	101458.1		
Social Returns	Geography	<i>Exposure to forces of nature (% total deaths)</i> . GBD Institute for Health Metrics and Evaluation.	0.05	0.26	0.00	4.73	
		<i>Ecological deficit (gha per capita)</i> . Global Footprint Network.	0.20	7.26	-70.05	10.32	
		<i>Total natural resources rents (% GDP)</i> . WB WDI.	6.85	9.87	0.00	55.07	
	Human Capital	<i>School enrollment, tertiary (% gross)</i> . Barro and Lee (2013), Lee and Lee (2016), WB WDI, and CAN/IDB (linear interpolation).	39.26	27.54	0.45	135.34	
		<i>Average years of total schooling (using % population aged 25 and over)</i> . Barro and Lee (2013), Lee and Lee (2016), WB WDI, and CAN/IDB (linear interpolation).	8.51	3.17	1.11	13.97	
	Infrastructure	<i>Access to electricity (% population)</i> . WB WDI.	81.69	28.90	3.69	100.00	
		<i>Access to improved drinking water sources (% population)</i> . UNICEF.	90.25	13.36	16.97	100.00	
		<i>Access to sewer (% population)</i> . UNICEF.	44.69	34.66	0.01	100.00	
		<i>Individuals using the internet (% population)</i> . WB WDI.	37.44	30.01	0.16	98.63	
		<i>Mobile cellular subscription (per 100 people)</i> . WB WDI.	83.37	44.65	0.37	179.11	
	Government Failures	Microrisks	<i>Rule of law ([-2.5,2.5]=strong)</i> . WB WGI.	0.05	0.97	-2.28	2.03
			<i>Regulatory quality ([-2.5,2.5]=strong)</i> . WB WGI.	0.17	0.90	-2.17	2.15
			<i>Corruption perceptions index ([0,100]=highly clean)</i> . Transparency International.	43.74	20.44	12.20	97.20
		Macrorisks	<i>Coefficient of variation of the real effective exchange rate</i> . Bruegel datasets and CAN/IDB.	0.03	0.04	0.00	0.86
			<i>Changes in net barter terms of trade index (2000=100)</i> . WB WDI and CAN/IDB.	1.32	5.19	-21.58	72.73
			<i>Fiscal deficit (% GDP)</i> . IMF WEO (October 2020).	1.93	4.23	-28.59	18.70
Market Failures	"Self-Discovery" / Coordination Externalities	<i>Logarithm of product sophistication (based on GDP per capita, constant 2005 international US\$, ppp)</i> . WB WITS.	9.63	0.34	8.00	10.22	
		<i>Economic complexity index</i> . The Atlas of Economic Complexity.	0.09	0.96	-2.05	2.72	
		<i>Complexity outlook index</i> . The Atlas of Economic Complexity.	0.06	0.95	-3.33	2.66	
Cost of Finance	International Finance	<i>Net foreign direct investment inflows (% GDP)</i> . IMF WEO (October 2020), and UNCTAD.	5.24	14.69	-4.29	199.55	
		<i>Net foreign direct investment outflows (% GDP)</i> . IMF WEO (October 2020), and UNCTAD.	2.10	11.48	-50.76	201.23	
		<i>Net foreign portfolio flows (% GDP)</i> . IMF WEO (October 2020).	0.71	7.62	-34.40	122.43	
	Local Savings	<i>Gross Domestic Savings (% GDP)</i> . CAN/IDB (100% minus final consumption expenditure).	20.36	14.30	-38.50	56.64	
		<i>Net primary and secondary income from abroad (% GDP)</i> . IMF WEO (October 2020).	1.68	9.13	-21.85	78.60	
	Local Financial Intermediation	<i>Domestic credit to private sector (% GDP)</i> . BIS, WB WDI, and CAN/IDB.	55.74	45.20	2.66	249.26	

The aggregation at the category level assumes that each variable acts as a proxy for the respective category. In this case, we follow the min-max method and use our full sample to normalize each of the 25 variables so that differences will prevail by clusters.⁸ Then, we calculate simple averages across

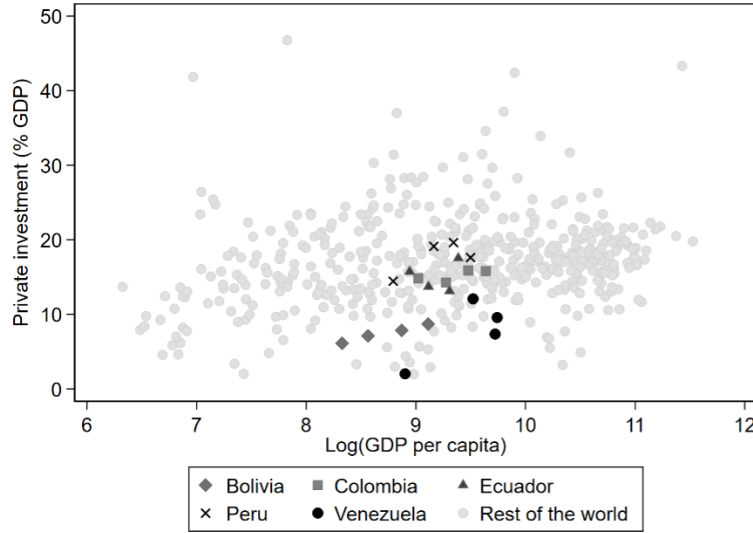
⁸Given Y as a variable and $i = 1, 2, \dots, n$ observations, the min-max method creates

the associated variables to form the category indicator. Once the indicators are constructed, we standardize to zero mean and unit variance.

3.3 Clustering

Figure 4 shows the scatter plot between the private investment and the logarithm of the GDP per capita using the full sample. Each country is represented in four different periods: 2001–2005, 2006–2010, 2011–2015, and 2016–2019.

Figure 4: Private Investment and Log(GDP per capita), 2001–2019



Source: CAN/IDB.

The observations seem to be dispersed enough to group into several clusters. The Andean countries do not show extreme values. They are consistently distributed in the middle of the plot and therefore it is possible to confirm the importance of a transitional analysis searching higher per capita income and private investment levels.

a new normalized variable, such that $Y_i^{new} = (Y_i - Y_{min}) / (Y_{max} - Y_{min})$, where Y_{min} is the minimum value of the variable in the full sample and Y_{max} the maximum value. In this case, the direction of each variable must be theoretically oriented in the same way to avoid misinterpretation. For this, we follow the conventional literature to ensure that Y_{new} always represents a direct relationship with private investment. In the opposite case, $Y_i^{new} = (Y_{max} - Y_i) / (Y_{max} - Y_{min})$.

In particular, private investment in Venezuela varies the most within the Andean countries, representing less than 5 percent of GDP in the last period. In comparison, Colombia shows more stable figures, about 15 percent of GDP, while private investment in Peru averaged 17.7 percent of GDP in the sample (the highest in the Andean region).

To group our sample, we use the k-mean method, but first we need to find the optimal number of clusters. In this case, the paper follows hierarchical and nonhierarchical methods. Table 2 shows the results of Calinski-Harabasz and Duda-Hart stopping rules from the hierarchical approach. These indexes are computed for each cluster solution, where larger values indicate more distinct clustering. In turn, the pseudo T-squared presented with the Duda-Hart index should be smaller in order to indicate more distinct clustering. Both rules choose nine as the optimal number of clusters.

Table 2: Stopping Rules: Hierarchical Approach

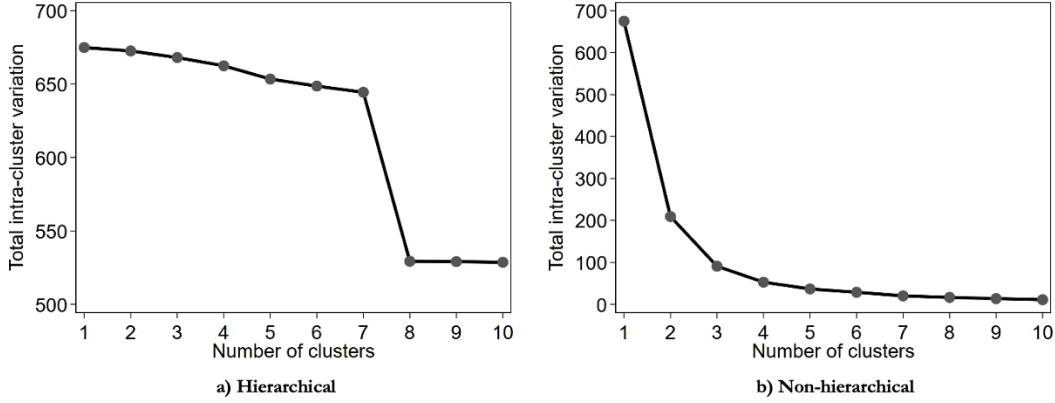
Number of clusters	Calinski-Harabasz Pseudo-F	Duda-Hart	
		Je (2) / Je (1)	Pseudo T-Squared
2	1.78	0.9933	3.46
3	2.63	0.9916	4.33
4	3.20	0.9864	7.05
5	4.19	0.9926	3.80
6	4.14	0.9935	3.32
7	4.01	0.8214	110.42
8	19.96***	0.3082	33.67
9	17.46***	0.9991***	0.46***
10	15.56	0.9989***	0.52***

Note: *** represents the optimal number of clusters by method.

The elbow method applies to hierarchical and nonhierarchical or k-means approaches. In this case, we calculate and plot the total intracluster variation as a measure of compactness, where a change of slope from steep to shallow indicates the optimal number of clusters. Figure 5 shows the results. The left panel clearly identifies an elbow bend after including eight groups into the analysis; the right panel is more conservative, but also shows how the change of the slope gets smaller while the number of clusters is increased (the absolute cumulative change is more than 90 percent after seven clusters

relative to including two). These results complement those from the stopping rules; therefore, clustering using the k-means method with nine clusters seems reasonable for our analysis.

Figure 5: Elbow Method by Approach



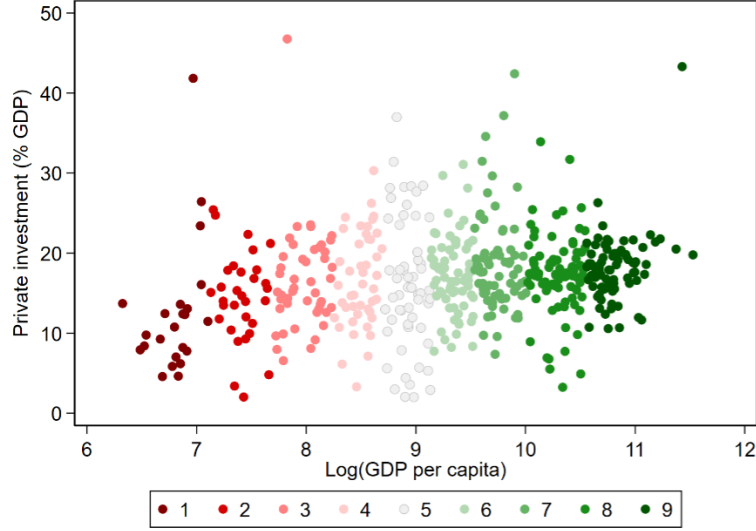
Source: CAN/IDB.

Figure 6 shows the scatter plot by clusters and Table 3 summarizes their composition. The groups are separated, going from lower to higher average GDP per capita (i.e., from Clusters 1 to 9). The use of panel data for clustering allows us to explicitly derive a transitional behavior to larger per capita incomes, although not its drivers. Nevertheless, each group may respond not just to disparities in private investment and GDP per capita but also in local specificities in each country (HRV factors).

Table 3: Composition of the Clusters

Cluster	2001–2005		2006–2010		2011–2015		2016–2019	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
1	9	7.0	7	5.4	4	3.1	3	2.3
2	12	9.3	6	4.7	8	6.2	5	3.9
3	12	9.3	13	10.1	11	8.5	11	8.5
4	13	10.1	9	7.0	10	7.8	13	10.1
5	19	14.7	19	14.7	10	7.8	9	7.0
6	14	10.9	15	11.6	22	17.1	19	14.7
7	16	12.4	24	18.6	17	13.2	18	14.0
8	24	18.6	17	13.2	26	20.2	19	14.7
9	10	7.8	19	14.7	21	16.3	32	24.8

Figure 6: Private Investment and Log(GDP per Capita) by Cluster, 2001–2019



Source: CAN/IDB.

A uniform distribution of our sample in the clusters would consist of around 14 countries by clusters in each period. However, this is not the case. The countries are more evenly distributed during 2001–2005 and more concentrated within higher clusters for recent periods. This result leads to two conclusions: (1) there is a transitional dynamic over time and (2) most of the countries have been moving to clusters with higher GDP per capita (e.g., during the period 2001–2005, about half of the countries were between Clusters 6 and 9, but in 2016–2019 these clusters contained 68 percent of the countries). In this context, the only presence of a transitional dynamic favoring higher clusters reveals neither counterfactuals nor drivers of private investment; therefore, it is also essential to identify the policy priorities for promoting local investment and reducing countries' dependency on foreign inflows.

Table 4 presents the distribution of each Andean country by cluster. They are concentrated in the middle of the clusters and have consistently moved forward to higher GDP per capita, except Venezuela.

Table 4: Andean Countries' Distribution by Cluster, 2001–2019

4	5	6	7
Bolivia (2001–2005)	Bolivia (2011–2015)	Colombia (2006–2010)	Colombia (2016–2019)
Bolivia (2006–2010)	Bolivia (2016–2019)	Colombia (2011–2015)	Venezuela (2006–2010)
	Colombia (2001–2005)	Ecuador (2011–2015)	Venezuela (2011–2015)
	Ecuador (2001–2005)	Ecuador (2016–2019)	
	Ecuador (2006–2010)	Peru (2006–2010)	
	Peru (2001–2005)	Peru (2011–2015)	
	Venezuela (2016–2019)	Peru (2016–2019)	
		Venezuela (2001–2005)	

In particular, Bolivia was in Cluster 4 between 2001 and 2010 and moved to Cluster 5 after 2011. Colombia was in Cluster 5 in 2001–2005, transitioning to Cluster 6 and then to Cluster 7 during 2016–2019 (the only Andean country in this group). Ecuador and Peru were also in Cluster 5 during 2001–2005 but transitioned and stayed in Cluster 6. Venezuela was the only Andean country that started in Cluster 6, jumped quickly to Cluster 7, and finally experienced a significant fall back to Cluster 5.

4. Transitional Dynamic and Policy Priorities

We next analyze and test statistical heterogeneities in HRV factors for the Andean countries, as well as to identify their investment priorities for fostering jumps to larger GDP per capita clusters. In this context, a natural transition should occur as follows: for a country in Cluster 1, the first stage in scaling up will be to move Cluster 2; once in Cluster 2, the next stage will be moving to Cluster 3; and so on until the country reaches Cluster 9 (associated with the higher GDP per capita).

An initial approach to understanding the transitional dynamic implies (1) the calculation of the mean values gap between a cluster's HRV factors and its next cluster and (2) the conducting of an unpaired mean comparison test to highlight significant dissimilarities per category. Within this gap analysis, a negative larger gap accompanied by a statistical difference will reveal a category to prioritize, while a positive significant gap will reveal an advantage on which to capitalize. [Table 5](#) shows the results for the most recent period.

Table 5: Mean Comparison: Cluster's Gap with Next Cluster, 2016–2019

Categories (Standardized)	Cluster							
	1	2	3	4	5	6	7	8
Geography	0.317	-0.4	-0.049	-0.378	0.098	-0.155	0.184	-0.142
Human capital	-0.03	-0.087	-0.534***	-0.398	-0.489*	-0.246*	-0.498***	-0.354**
Infrastructure	-0.248	-0.58***	-0.446***	-0.477*	-0.335	-0.335***	-0.22**	-0.325***
Microrisks	-0.312	-0.316**	0.33**	-0.054	-0.427*	-0.316**	-0.351**	-1.095***
Macrorisks	0.088	-0.33	0.564*	1.256	-1.354	-0.428*	0.06	-0.472**
Market failures	-0.18	-0.066	-0.03	-0.702**	-0.059	-0.316	-0.474*	-0.428**
International finance	-0.273	0.184	-0.127	0.238*	-0.085	-0.061	-0.141	-0.174
Local savings	-1.118*	-0.768	0.313	0.035	-0.261	-0.174	0.047	-0.522***
Local financial intermediation	-0.114	-0.144	-0.133	-0.311	-0.242	0.011	-0.171	-0.919***

Note: Mean difference statistical significance: * = 10 percent, ** = 5 percent, and *** = 1 percent. Bolivia and Venezuela (Cluster 5), Ecuador and Peru (Cluster 6), and Colombia (Cluster 7).

It is more challenging to scale up to the next cluster if the country is within a higher group. For example, to jump from Cluster 8 to 9, there must be improvements in public goods (infrastructure and human capital), government effectiveness, market allocation and private sector coordination, and local finance. In contrast, for transitioning from Cluster 1 to 2 the main concern seems to be only local finance. In general, geography and international finance (i.e., FDI and portfolio flows) are not a significant constraint.

The clusters in which the Andean countries are located differ from the next higher clusters mainly in terms of institutional factors related to microrisks and social returns from human capital and infrastructure. However, noticing how this general view may skip particularities within clusters, [Table 6](#) focuses on the Andean countries, presenting the differences of the HRV factors with respect to the next higher and same cluster. There are heterogeneities to consider.

Table 6: Mean Comparison: Andean Countries' Gap, 2016–2019

Categories (Standardized)	Cluster 5				Cluster 6				Cluster 7	
	Bolivia		Venezuela		Ecuador		Peru		Colombia	
	Same	Next	Same	Next	Same	Next	Same	Next	Same	Next
Geography	0.547**	0.646**	0.021	0.119	-0.285	-0.440***	-0.250	-0.405***	-0.060	0.124
Human capital	0.665**	0.176	1.263***	0.774***	0.075	-0.171	0.620***	0.374***	0.104	-0.394***
Infrastructure	0.234	-0.100	0.760***	0.425***	0.150*	-0.185**	0.322***	-0.014	0.228***	0.008
Microrisks	-0.196	-0.623***	-1.282***	-1.709***	-0.406***	-0.722***	0.193**	-0.124	-0.105	-0.456***
Macrorisks	0.774	-0.580***	-9.523***	-10.877***	0.101	-0.327**	0.261	-0.168	-0.925***	-0.866***
Market failures	-0.879**	-0.938***	-0.802**	-0.861***	-1.043***	-1.359***	-0.546***	-0.862***	-0.217	-0.691***
International finance	-0.048	-0.134*	-0.027	-0.113	-0.296***	-0.357***	0.144*	0.083*	-0.010	-0.152
Local savings	-0.218	-0.480*	-1.520***	-1.781***	0.526**	0.353	-0.046	-0.219	-0.600**	-0.553***
Local financial intermediation	0.480**	0.239	-0.499**	-0.741***	-0.433**	-0.422*	-0.277	-0.266	-0.135	-0.306*

Note: Mean difference statistical significance: * = 10 percent, ** = 5 percent, and *** = 1 percent.

Bolivia shows advantages in geography, human capital, and local financial intermediation. Moreover, geography is the only factor that positively distin-

guishes it from the next highest cluster. Nevertheless, Bolivia has relevant institutional challenges and market failures that need to be addressed in order to realize a higher GDP per capita. Although Venezuela is in the same cluster as Bolivia, their challenges and advantages differ. The former stands out for having positive gaps in human capital and infrastructure, yet it presents threats due to institutional factors, macroeconomic instability, and market coordination and has negative gaps in local savings and financial intermediation. In this scenario, the country must primarily strive to solve its macroeconomic risks (highest difference in mean).

Ecuador and Peru are in Cluster 6. Local savings favor Ecuador in its cluster; however, the country does not have advantages when comparing to the next higher cluster. Furthermore, in order to jump to the next cluster Ecuador has significant challenges it must overcome in almost all the HRV factors, except human capital and local savings, although its larger gaps are in market failures and microrisks. Peru on the other hand has general advantages in human capital, as well as better infrastructure and fewer microrisks than its cluster peers; nevertheless, like Ecuador with regard to moving forward it faces constraints in market failures and geography.

Colombia is the only Andean country in Cluster 7. It has significant negative differences in mean in human capital, institutional factors, macroeconomic instability, market failures, and local savings. Specifically, the category of macrorisks is its primary concern; therefore, the achievement of fiscal and monetary stability should be prioritized in order to move to a higher cluster.

The standard gap analysis sheds light on some of the priorities for promoting investment and growth by country looking at the size and sign of the mean differences. However, this gap analysis neither indicates values of restrictions generated by the low performance of the HRV factors nor accounts for the presence of possible nonlinearities. For this reason, we complement our results by applying a GOPROBIT as suggested by Izquierdo et al. (2016). Unlike the ordered Probit, where the explanatory variables must meet the parallel regression assumption, the GOPROBIT learns from higher stages to identify priorities, allowing us to estimate different coefficients per category among

clusters, thus increasing the possibility of having different priorities.⁹

Table 7 presents the GOPROBIT estimates with period fixed effects relative to 2016–2019 for each cluster from 1 to 8 (countries in Cluster 9 cannot scale up). In this case, categories differ in their importance for increasing the likelihood of jumping to higher GDP per capita clusters.

Table 7: Generalized Ordered Probit by Cluster, 2001–2019

Categories (Standardized)	Cluster							
	1	2	3	4	5	6	7	8
Geography	-0.677*** (0.223)	0.157 (0.122)	-0.880*** (0.177)	-0.175** (0.0796)	-0.0966 (0.199)	-0.319* (0.169)	-1.106*** (0.215)	-0.834*** (0.180)
Human capital	1.569** (0.727)	1.895*** (0.182)	0.461*** (0.161)	0.0915 (0.134)	0.696*** (0.0980)	0.907*** (0.131)	0.825*** (0.150)	-0.223*** (0.0396)
Infrastructure	13.70*** (0.379)	7.326*** (0.108)	3.609*** (0.743)	1.756*** (0.628)	1.783*** (0.374)	1.785*** (0.192)	1.888*** (0.151)	0.815** (0.359)
Microrisks	3.270*** (0.494)	1.035*** (0.130)	-0.0402 (0.413)	0.573* (0.340)	1.696*** (0.137)	1.484*** (0.301)	1.642*** (0.253)	2.274*** (0.100)
Macrorisks	0.258*** (0.0892)	-0.746*** (0.0865)	-0.570** (0.236)	-0.0504 (0.0552)	0.0724*** (0.0242)	-0.00201 (0.0260)	0.00884 (0.103)	-0.211*** (0.0220)
Market failures	2.744*** (0.144)	0.470*** (0.158)	0.0157 (0.155)	0.211* (0.108)	-0.123* (0.0743)	0.396* (0.219)	0.574*** (0.210)	0.244* (0.130)
International finance	2.437*** (0.0788)	0.920*** (0.203)	-0.477 (0.414)	0.194 (0.159)	-0.178 (0.179)	0.301** (0.124)	0.196*** (0.0147)	0.0213*** (0.00751)
Local savings	1.932*** (0.159)	0.308*** (0.116)	-0.0567 (0.0622)	-0.0189 (0.0675)	0.425*** (0.114)	0.713*** (0.0219)	0.452*** (0.109)	0.945*** (0.252)
Local financial intermediation	-9.289*** (0.639)	-3.904*** (0.116)	-0.0214 (0.107)	0.0130 (0.0587)	-0.278* (0.156)	-0.433*** (0.0470)	0.101 (0.0776)	0.155*** (0.0217)
Observations	516	516	516	516	516	516	516	516

Note: Statistical significance: * = 10 percent, ** = 5 percent, and *** = 1 percent. Higher values relate to higher impacts (priority). During the period 2016–2019, Bolivia and Venezuela (Cluster 5), Ecuador and Peru (Cluster 6), and Colombia (Cluster 7).

We observe how policy efforts in most categories may positively impact countries within low and high clusters, although not in the same way. On the one hand, countries in a lower cluster may be able to make scaling up more feasible than countries in higher clusters. On the other hand, the impacts are not uniformly ordered across all the categories for each cluster. For example, conditional on the levels attained in other factors, countries in Clusters 1 to 7 should prioritize investment in infrastructure over the other categories to boost their likelihood of advancing to a higher group, but can also prioritize the solving of microrisks or human capital constraints, market failures, or to

⁹This empirical framework quantifies the likelihood of "jumping" to a higher cluster based on the factors that affect private investment. Furthermore, the methodology assumes that the impact of each factor is conditional on the levels attained by the country in other factors (Izquierdo et al. 2016). Therefore, it implicitly captures the concept of interaction across constraints and nonlinear effects.

attract FDI and local savings. In contrast, countries in Cluster 8 should focus more on reducing microrisks. Similarly, the Andean countries' clusters reveal significant and positive impacts mainly from infrastructure and microrisks factors, partially from human capital and local savings. Furthermore, reducing macrorisks is slightly relevant for countries in Cluster 5, while improvements on market failures and international finance are key for countries in Clusters 6 and 7.

These results coincide with those of Izquierdo et al. (2016). With regard to achieving productivity and income gains, lower-income countries have more-basic priorities, such as access to credit and improvement of infrastructure. In higher-income countries, the priority shift to the mitigation of microrisks.

Table 8 shows the 2016–2019 transition probabilities at mean levels of either moving back, staying in the same cluster, or jumping. The current probability for low GDP per capita countries to stay in Clusters 1 to 3 is either absolute or very high (75 percent for Cluster 3); thus, these probabilities speak to the importance of effective and practical policy actions. Conversely, countries in Clusters 8 and 9 seem very stable.

Table 8: Generalized Ordered Probit by Cluster, 2016–2019

Cluster		Moving back	Staying	Jumping
	1	0.0	100.0	0.0
	2	0.0	86.6	13.4
	3	0.1	75.4	24.4
	4	8.0	60.2	31.9
	5	29.6	48.0	22.4
	6	15.1	63.4	21.5
	7	23.4	60.2	16.4
	8	17.8	73.1	9.1
	9	3.1	96.9	0.0
5	Bolivia	28.2	34.2	37.6
	Venezuela	5.8	90.6	3.6
6	Ecuador	11.0	70.7	18.3
	Peru	0.6	25.9	73.5
7	Colombia	26.3	57.5	16.2

Clusters 5 to 7 include the Andean countries. Cluster 5 is the only group where countries have a higher probability on average of moving (up or down)

than remaining the cluster; it is associated with more-flexible results, with the highest probability of moving back (29.6 percent) and also the highest probability of jumping (around 22 percent). Therefore, the design and implementation of growth strategies based on reform priorities is critical for Cluster 5's countries and will significantly impact the transition.

At the same time there is heterogeneity among the Andean countries. Bolivia has a higher chance of jumping than Cluster 5's average and a similar chance of remaining. By contrast, Venezuela has a very high probability of remaining in its cluster (around 90 percent, almost double the average probability of Cluster 5) and a slightly higher probability of moving back rather than scaling up (5.8 percent versus 3.6 percent, respectively). Therefore, Venezuela needs more impact from either infrastructure or complementarity effects than Bolivia to transition to a higher-level cluster. Ecuador presents only slightly better figures than Cluster 6 on average, while Peru stands out within the same cluster for having considerably better conditions. At the 2016–2019 mean levels, Peru has an almost 60 percent probability of carrying out a natural transition; therefore, Ecuador will need relatively more policy efforts and private investment than Peru to promote growth. Colombia has similar figures to Cluster 7, having a greater chance of remaining or scaling down to Cluster 6 than moving forward.

5. Unraveling Growth Paths

The Andean region has experienced diverse growth paths influenced by external shocks and structural and country-specific factors. Between 2001 and 2013, commodity exporters benefited from a boom that drove growth and investment and increased fiscal revenues. However, the subsequent decline in commodity prices after 2014 (e.g., the price of oil fell from USD 110 per barrel in mid-2014 to below USD 30 per barrel by early 2016, while copper prices dropped by over 40 percent between 2011 and 2016) exposed underlying structural inefficiencies, leading to a slowdown in investment and economic activity (Ocampo 2017, Balakrishnan et al. 2021). This scenario highlighted that continued reliance on commodity exports is not a sustainable long-term growth

strategy. Andean countries must integrate into global value chains, invest in technological capabilities, and support innovation-driven sectors (Andrian and Manzano 2023).

While common structural challenges and external shocks have influenced the Andean region, a better understanding of the conditions that may have defined each country’s growth path will provide a deeper insight into their transitional dynamics.

5.1 Bolivia

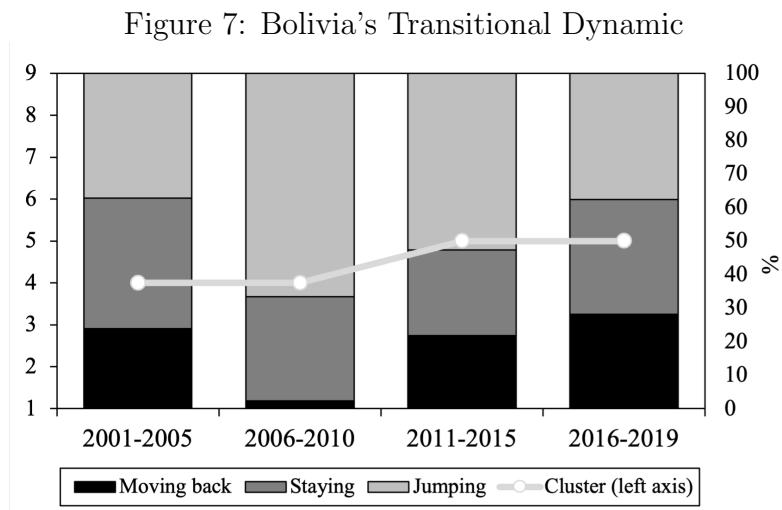
Bolivia’s growth path was been characterized by significant volatility before 2000, marked by the debt crisis between 1977 and 1986 and hyperinflation in the mid-1980s. Difficulties in paying its external debt left the country with a lack of access to international capital, making financing costly and leading to the implementation of the New Economic Policy (NEP) in 1985, which introduced reforms to stabilize the economy by promoting exports. These reforms included price liberalization, reduction of fiscal deficits, tax reform, privatization of state-owned companies, and trade policies favoring exports and FDI. By the early 1990s, inflation rates had decelerated to single digits, and modest economic growth had resumed (Kehoe et al. 2018).

Despite stabilization efforts, private investment remained subdued. Political instability, policy inconsistencies, and inadequate infrastructure discouraged investors. The privatization initiatives under the NEP generated mixed outcomes, with some sectors failing to capture significant capital inflows (Kehoe et al. 2018). In particular, the country entered a slowdown phase in the early 2000s, induced by a deterioration in the terms of trade and the reversal in capital flows. These factors contributed to Bolivia’s placement in Cluster 4 (i.e., a cluster characterized by low private investment and GDP per capita) from 2001 to 2010. However, the commodity boom boosted the economy in the following years.

Beverinotti (2018) reports that Bolivia’s economic growth between 2005 and 2016 occurred in a period of favorable external conditions, in tandem with the state’s expansion of its role in economic activities, primarily reflected in

increased public investment and the establishment of new state-owned enterprises. The government adopted a countercyclical policy, maintaining high public spending from 2005 on (Rose et al. 2020), supported through international reserves accumulated before 2013 and external borrowing. This strategy stimulated domestic demand and supported economic growth. However, it raised concerns with regard to the business climate and the institutional framework, particularly in terms of regulatory quality and governance, which have been highlighted as barriers to private investment.

Figure 7 shows how Bolivia’s probability of transitioning to a higher cluster almost doubled between 2001–2005 and 2006–2010, driving the jump to Cluster 5 during 2011–2015—where the country remained in 2016–2019.



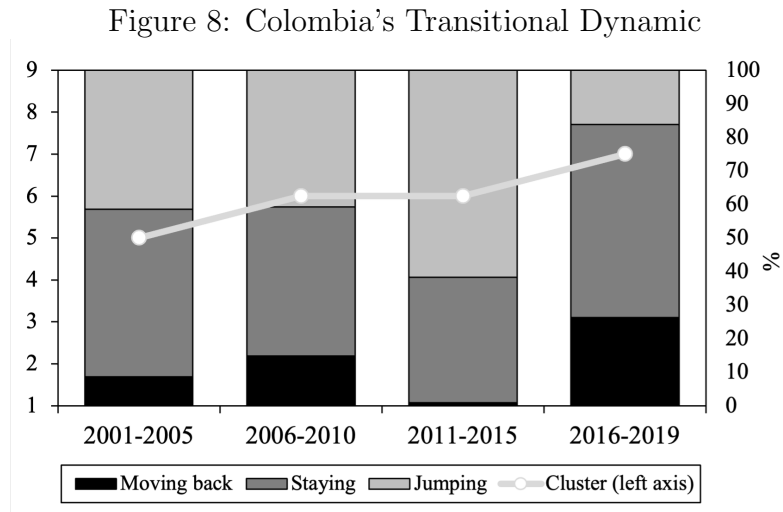
Source: CAN/IDB.

The country remained highly dependent on commodity cycles, with about 80 percent of Bolivia’s exports consisting of hydrocarbons and extractive industry products (Rose et al. 2020), and its economic performance has shown signs of strain in recent years. For example, the fall in commodity prices after 2014 revealed limited diversification efforts and led to fiscal and public debt concerns (e.g., Bolivia’s fiscal deficit averaged 7.5 percent of GDP between 2015 and 2019), as well as reduced international reserves (World Bank 2021). This context may have contributed to more exposure to micro- and macrorisks and reduced the

probability of moving to a higher cluster. Furthermore, although the country has made strides in expanding its natural gas production, it still relies on the hydrocarbon sector while the manufacturing sector remains underdeveloped. There is thus a need to focus on value-added activities and advance within production chains to foster economic resilience (Andrian and Manzano 2023).

5.2 Colombia

Colombia is notable for being the only Andean country to show consistent progress. It started in Cluster 5 in 2001–2005, moved to Cluster 6 in 2006, where it remained through 2015, and then transitioned to Cluster 7 during 2016–2019 (Figure 8), reflecting its relatively higher levels of private investment and GDP per capita.



Source: CAN/IDB.

In the early 1990s, the Colombian government implemented significant economic reforms to promote trade and fiscal liberalization, deregulate the financial sector, and attract foreign investment (Pavcnik et al. 2004, Lozano and Julio 2016). Despite these efforts, the late 1990s were challenging. The Asian and Russian financial crises, domestic fiscal imbalances, and a banking crisis led to a recession in 1999 during which GDP contracted, unemployment rose, and the fiscal deficit widened (Arias 2000, Luzardo-Luna 2024).

Following the 1999 recession, Colombia implemented austerity measures and structural reforms under the guidance of the IMF. The country also continued to follow market-oriented policies and carried out tax reforms in order to achieve economic stabilization and fiscal sustainability. During the early 2000s, the country intensified its efforts against insurgent groups that, together with the economic policies, cautiously motivated private investment. Therefore, during the period 2001–2005, the country was in a cluster with moderate GDP per capita and private investment levels (Cluster 5).

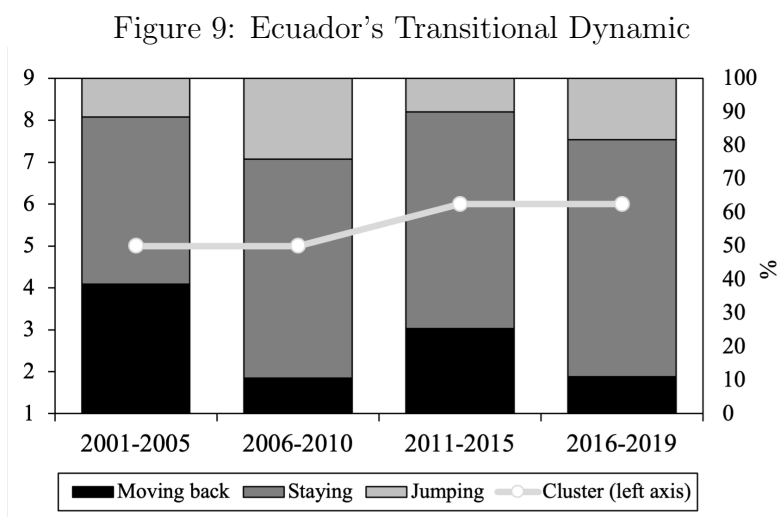
During 2006–2010, Colombia advanced to the next cluster, remaining there for 2011–2015 while increasing its likelihood of jumping to the cluster above. The country benefited from high international oil, coal, and coffee prices, which led to more fiscal and external incomes (Luzardo-Luna 2024). It also strengthened security efforts (which helped to attract investment), adopted prudent monetary policies, and maintained fiscal discipline to keep inflation rates relatively moderate (Villar et al. 2023). This context facilitated economic growth, on average, of about 4.8 percent per year between 2005 and 2014 (Gassos et al. 2019). FDI inflows increased substantially, particularly in the oil sector (Abreo et al. 2023), while the consistent promotion of public-private partnerships further stimulated private sector participation, specifically in carrying out energy, infrastructure, and manufacturing projects (Gassos et al. 2019).

Colombia’s economy demonstrated resilience amid external challenges. The 2008–2009 global crisis had a milder impact on Colombia than other Latin American countries due to strong banking regulations (Jaramillo 2010). By 2014, the collapse in global oil prices had led to lower exports and fiscal imbalances. However, the country swiftly adopted countercyclical policies to sustain economic activity (Vegh and Vuletin 2015), which, together with a more stable baseline environment, contributed to the country’s reaching Cluster 7 during 2016–2019.

5.3 Ecuador

Before 2000, Ecuador's economy was characterized by volatility, largely due to its high vulnerability to external shocks and dependence on oil exports. The late 1990s were particularly challenging for the country, culminating in a severe financial crisis in 1999, which led to a significant contraction in GDP and depreciation of the local currency. The country introduced structural reforms looking for financial stabilization and trade integration, and undertook dollarization in 2000 to stabilize the prices and overall economy, although doing so limited its ability to respond to external shocks (Jameson 2003).

Following dollarization, the country experienced a period of economic stabilization and growth, contributing to its placement in Cluster 5 during 2001–2005, which continued throughout 2006–2010 (Figure 9).



Source: CAN/IDB.

During the 2000s, increased public spending, more capital inflows, and the start of the oil boom fueled economic expansion (Cueva and Díaz 2018, World Bank 2018). For example, between 2001 and 2014 the country grew at an average annual rate of 4.5 percent, outpacing the Latin American and Caribbean average of 3.3 percent.

Despite having a probability of 65 percent of staying in Cluster 5 and about

a 25 percent probability of jumping, Ecuador did transition to Cluster 6 during 2011–2015. However, the reliance on oil revenues kept the economy vulnerable to price fluctuations and structural constraints (e.g., a challenging business environment and limited access to credit), which continued to discourage private sector development (World Bank 2018).

Since 2014, the country has seen a slowdown due to declining commodity revenues and local challenges. Ecuador’s potential growth slowed from about 4 percent during 2001–2014 to just over 1 percent in 2015–2019, constrained by bottlenecks in the labor market and financial sector (IMF 2021), while sustained rigidities in infrastructure development and access to international finance, as well as market failure concerns and the continued presence of micro- and macrorisks, have been HRV factors limiting private investment to growth further.

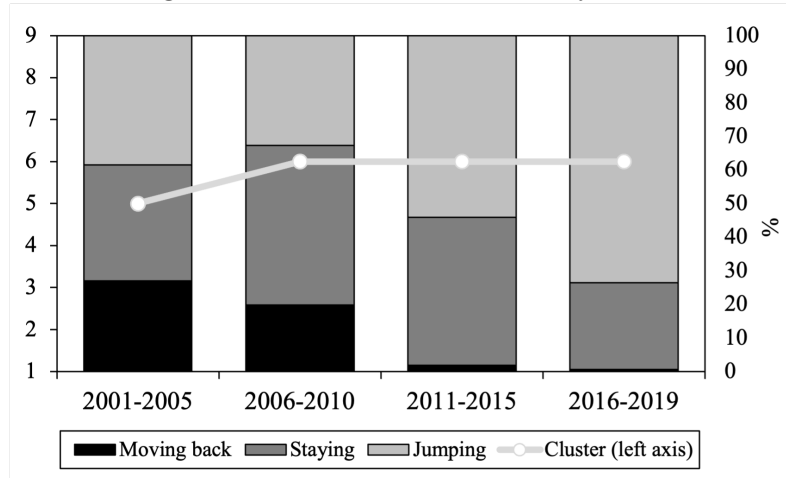
5.4 Peru

In the 1980s, Peru faced political and social turmoil, hyperinflation, and economic contractions, with real GDP per capita declining by about 1.75 percent between 1980 and 1992 and negative GDP growth of almost 15 percent between 1981 and 1990. Recurrent negative terms of trade shocks, economic mismanagement, and a severe export fall triggered two major economic crises, one at the start of the decade and the other toward its end (Ross and Peschiera 2015, World Bank 2017). However, during the early 1990s, Peru carried out structural reforms, promoting the opening of its economy to trade and investment, strengthening the autonomy of the Central Reserve Bank of Peru, removing price controls, privatizing public companies, and implementing stabilization policies.

Growth surged between 1993 and 1997 as terms of trade pressures eased, but regional currency crises again disrupted the recovery (Martinelli and Vega 2021). In the early 2000s, sound macroeconomic policies and investment frameworks were mostly in effect and the country was routed on an extensive path of economic stabilization. For example, between 2001 and 2005, the country grew by 4.3 percent, on average, while between 1996 and 2000, it had grown by

2.6 percent. This context may have contributed to the positioning of Peru in Cluster 5 during 2001–2005, from which point consumption and private investment began to be important growth drivers, especially after the onset of the commodity boom in the early 2000s (World Bank 2017).

Figure 10: Peru’s Transitional Dynamic



Source: CAN/IDB.

Figure 10 shows how Peru’s economic momentum continued throughout the 2006–2015 period. Favorable external conditions facilitated its transition from Cluster 5 to 6 after 2005 while consistently increasing the likelihood of jumping to higher clusters. For example, in 2006–2010 the probability of moving to a higher GDP per capita cluster was 33 percent; the probability increased to 54 percent during 2011–2015, and reached about 75 percent in 2016–2019. In particular, private investment expanded at an average rate of 12 percent between 2001 and 2015, significantly outpacing the 5 percent annual growth observed in the 1990s. Its contribution to economic growth also increased, rising from 14 percent in 1991–2001 to 30 percent during 2001–2015 (World Bank 2017).

During 2016–2019, the country maintained its position in Cluster 6, with GDP growth moderating to an annual average of 3.6 percent due to declining international commodity prices and domestic political instability, including the resignation of a president and tensions between the executive and legislative

branches, which adversely affected the investment climate. This situation may have kept Peru in the same cluster for over a decade.

5.5 Venezuela

Once one of Latin America’s wealthiest countries, Venezuela has been experiencing recurrent economic and social challenges over the last decades and a severe ongoing collapse (Brodie 2017, Guerra 2021).

Venezuela has traditionally relied on oil exports. This income source accounted for about 75 percent of total exports during the 2010s and more than 60 percent as of 2020, thus constituting a significant portion of its GDP and fiscal revenues. This dependence made the country highly vulnerable to oil price volatility. The oil bust during the 1980s led to a substantial reduction in national revenue, triggering economic contraction and escalating inflation rates. The country also accumulated massive foreign debt, further deepening its economic crisis (Roy and Cheatham 2024). In response to the fiscal crisis, the government implemented austerity measures as part of an IMF bailout in 1989, including a reduction in fuel subsidies and an increase public transportation fares, which led to widespread public discontent. The situation culminated in the Caracazo riots and political unrest. In 1992, there was an unsuccessful coup attempt that sought to capitalize on the growing dissatisfaction with how the government was handling the economy. This event signaled political expectations and set the context for the 1998 presidential election and the growth path afterward.

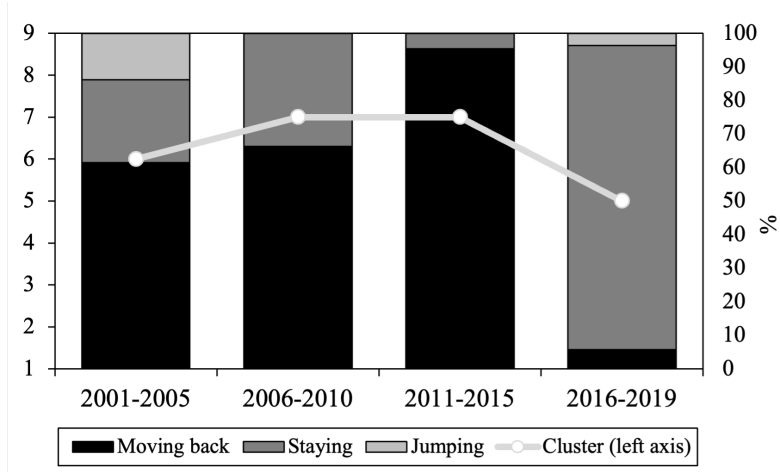
The late 1990s were particularly challenging due to economic instability and reduced investor confidence. Aside from political turmoil and policy uncertainties, Venezuela’s baseline conditions still enabled it to be in Cluster 6 (i.e., higher than the rest of Andean countries at that moment).

During the 2000s, a surge in oil prices took effect. Between 2001 and 2005, the government implemented structural policies aimed at increasing state control over the economy, including currency controls, land reforms, and a nationalization process. One such measure was the Land and Agrarian Development Law of 2001, which allowed the government to expropriate private

lands deemed unproductive or exceeding certain sizes; this led to legal uncertainties and discouraged private investment. The business environment became increasingly challenging for private investors due to regulatory changes and expropriations.

Although having a low probability of jumping to a higher cluster (about 14 percent), Venezuela managed to jump to Cluster 7 in 2006–2010 (Figure 11). This transition was primarily driven by the robust surge in oil prices, which boosted government revenues and public spending. The government used oil revenues to fund extensive social programs and infrastructure projects, temporarily stimulating economic growth (Roy and Cheatham 2024, Corrales 2023). However, the increased state intervention in the economy and strengthening of regulatory controls continued to make the environment for private investment unpredictable.

Figure 11: Venezuela's Transitional Dynamic



Source: CAN/IDB.

The country remained in Cluster 7 during 2011–2015. Nevertheless, underlying economic vulnerabilities began to surface, and a move back to clusters with lower GDP per capita was imminent, with the likelihood being about 95 percent. Overdependence on oil revenues persisted. The global decline in oil prices from 2014 on, together with local challenges, such as the macroeconomic mismanagement of previous years, political instability, institutional

challenges, a massive migration crisis, lack of access to banking and financial intermediation, and the collapse of public services, triggered an unprecedented socioeconomic collapse and a political crisis unlike any other in Latin American recent history. Together these severely impacted the economy and further deteriorated the business climate (Halff et al. 2017, Vera 2017, Kurmanaev 2019, Abuelafia and Saboin 2020, Guerra 2021, Maldonado and Olivo 2022, Álvarez and Díaz 2023, Maldonado 2023). For example, Venezuela’s GDP contracted by approximately 75 percent between 2013 and 2021. Hyperinflation reached unprecedented levels and private investment became nearly nonexistent, plummeting from 15.9 percent of GDP in 1998 to an estimated 2.1 percent in 2018 (Abuelafia and Saboin 2020). Moreover, Maldonado and Olivo (2022) finds that Venezuela should have been considered a low-middle-income country from 2018 on. Therefore, the period 2016–2019 was one of a substantial decline, with a significant drop in GDP per capita and private investment, so that the country moved two clusters back (from Cluster 7 to Cluster 5).

Venezuela’s economic fluctuations and transitions between clusters have been notably influenced by its dependence on oil revenues, government policies affecting private investment, and external conditions. Periods of high oil prices temporarily masked underlying structural issues, but the lack of economic diversification and unfavorable investment climate ultimately led to the country’s economic collapse and unfavorable transition.

6. Conclusion

Beginning in the early 2000s, the Andean region benefited from a relatively steady increase in real GDP growth rates, but after 2014 it faced sluggish growth rates. The Andean countries are highly exposed to international prices, fluctuations in primary exports, and foreign investment flows from developed economies, so that the global slowdown after 2014 affected the region’s productivity and growth. This scenario is still ongoing, especially after the COVID-19 shock. Therefore, we cannot rule out the potential for a significant decline growth for the region, and the country-specific factors will

not act as robust buffers to prevent such a trend. This context makes the Andean region even more vulnerable to exogenous factors.

This paper explores the nine categories of the standard growth diagnostic framework in clustering results using private investment and GDP per capita. We identify nine clusters from the lowest average GDP per capita (Cluster 1) to the highest (Cluster 9). During 2016–2019, Bolivia and Venezuela were in Cluster 5, Ecuador and Peru in Cluster 6, and Colombia in Cluster 7. We also carry out a gap analysis and use a GOPROBIT to identify investment priorities to boost real growth (i.e., to transition or scale up from one cluster to other).

The gap analysis highlights the strengths and weaknesses of each country relative to the next cluster, and the GOPROBIT allows us to identify priorities conditional on the levels attained by a country in terms of other factors and rank them based on their likelihood of jumping to clusters of higher GDP per capita. We find that scaling up is more feasible for countries in a lower cluster than for countries in higher clusters and verify heterogeneities across all the categories for each cluster. Specifically, the transition seems demanding for the Andean countries, although their respective clusters on average reveal significant and positive impacts, mainly in terms of prioritizing infrastructure and reduction of microrisks and to a lesser extent human capital and local savings.

Bolivia, currently in Cluster 5, has advantages in terms of geography relative to the next highest cluster and positive differences in human capital and local financial intermediation than its peers in the cluster. However, the country is characterized by institutional challenges and coordination failures in product sophistication. At mean values, it has similar probabilities of jumping to Cluster 6 and remaining in Cluster 5. Venezuela exceeds the cluster average in terms of human capital and infrastructure but presents market failures and institutional, financial, and macroeconomic threats. Nevertheless, Venezuela has over a probability of 90 percent of staying in Cluster 5, and its main priority should be to reduce macrorisks to improve the likelihood of transition.

Ecuador, in Cluster 6, has no advantages compared to Cluster 7, showing

negative gaps in terms of geography, infrastructure, macrorisks, international finance, market failures, and microrisks. Peru, on the other hand, which is in the same cluster is favored when it comes to human capital, whereas the country’s main challenges are market failures and geography. Peru has a probability of around 74 percent of scaling up to any other cluster; conversely, Ecuador has a probability of only 18 percent of—and a 71 percent chance of remaining in its cluster.

Finally, Colombia, in Cluster 7, faces challenges in human capital and local savings, institutional weakness, market failures, and significant macrorisks. Its condition makes it prone to staying in this cluster (a probability of 58 percent) or moving backward rather than forward.

In this context, even though the priority agenda might be similar in some cases, policy making may be more demanding for some countries than for others. This paper represents an explicit effort to encourage a growth agenda for the Andean countries based on specific reform priorities for local investment, especially in the wake of the ongoing pandemic shock. Nevertheless, a zoom-in into each Andean country and more-particular variables is still pending. Moreover, this paper does not consider potential global or local shocks, and future studies should account for this limitation. If that is the case, at least revisiting this methodology should be necessary and helpful.

7. References

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