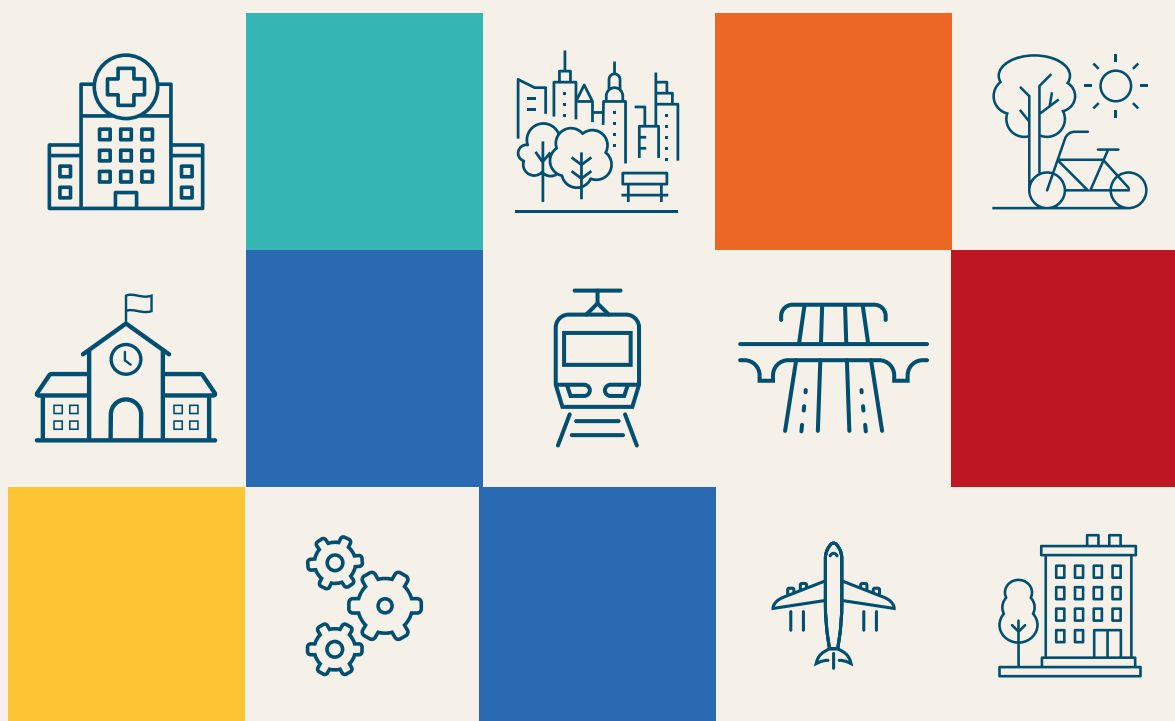


How **Efficient** Is the Management of Subnational Public Investment?

The Situation in the Federal Countries of Latin America



Huáscar Eguino | Editor and co-author
Marcelo Capello, Gabriel Farfán Mares,
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**Cataloging-in-Publication data provided by the
Inter-American Development Bank Felipe Herrera Library**

How efficient is the management of subnational public investment? : the situation in the federal countries of Latin America / Huáscar Eguino, Marcelo Capello, Gabriel Farfán, Juan Carlos Aguilar, Hugo Menéndez.
p. cm. — (IDB Monograph ; 866)
Includes bibliographic references.

1. Public investments-Argentina. 2. Public investments-Mexico. 3. Intergovernmental fiscal relations-Argentina. 4. Intergovernmental fiscal relations-Mexico. 5. Subnational governments-Economic aspects-Argentina. 6. Subnational governments-Economic aspects-Mexico. 7. Federal government-Economic aspects-Argentina. 8. Federal government-Economic aspects-Mexico. I. Eguino Lijerón, Huáscar. II. Capello, Marcelo. III. Farfán, Gabriel. IV. Aguilar, Juan Carlos. V. Menéndez, Hugo. VI. Inter-American Development Bank. Fiscal Management Division. VII. Series.
IDB-MG-866

Keywords: decentralized public investment, index of efficiency, Latin America, public expenditure, subnational government

JEL Codes: E62, H43, H5, H72

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Executive Summary



This paper highlights the importance of public investment at the subnational level and analyzes the way it is managed, identifying those aspects that ought to be modernized to improve efficiency. The themes discussed acquire particular significance due to the limited resources that countries can allocate to investment and to the role played by subnational governments in providing the infrastructure and the services for which they are responsible.

To analyze systematically the factors that most affect public investment management at the subnational level, this study employs a modified version of the index of public investment management efficiency developed by Armendáriz and Contreras (2016), which incorporates aspects particularly relevant for subnational governments. The main questions that inform the study are: (i) How important is decentralized public investment?; (ii) What are the main factors that impact on the management efficiency of subnational investments?; (iii) How efficient is investment management in the provinces of Argentina and the states of Mexico?, and (iv) What actions can be taken to improve the efficiency and quality of investment management carried out by subnational governments?

Each of these questions is analyzed in depth, and some significant conclusions are reached, based on the case studies of Argentina and Mexico. They are the following: (i) Public investment managed by subnational governments is inefficient throughout all stages of the project cycle but is particularly wanting in the stages of strategic planning, ex ante evaluation, impact evaluation, auditing, and asset management; (ii) On average, subnational governments have less public investment management capacity when compared with the national government, although, in a context of considerable heterogeneity, some achieve greater efficiency than that observed at the federal level; and (iii) Additional factors that impact the management efficiency of subnational public investment are the lack of intergovernmental coordination and the difficulty of national governments to fulfill their role as governing bodies of public investment at all levels of government and to support capacity building at the decentralized level.





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List of Acronyms

BAPIN	Public Investment Project Bank (Banco de Proyectos de Inversión Pública)
CABA	Autonomous City of Buenos Aires (Ciudad Autónoma de Buenos Aires)
CAF	Andean Investment Corporation (Corporación Andina de Fomento)
DNIP	National Directorate of Public Investment (Dirección Nacional de Inversión Pública)
D-PIM	Decentralized public investment management
ECLAC	Economic Commission for Latin America and the Caribbean
GDP	Gross domestic product
IDB	Inter-American Development Bank
IMF	International Monetary Fund
M&E	Monitoring and evaluation
NEA	Northeast Argentina
NOA	Northwest Argentina
OECD	Organisation for Economic Co-operation and Development
PI	Public investment
PIM	Public investment management
RDI	Real direct investment
SIPPE	Strategic Project Identification and Weighting System (Sistema de Identificación y Ponderación de Proyectos Estratégicos)
SNG	Subnational government
SNGI	Subnational intermediate level government
SNIP	National Public Investment System (Sistema Nacional de Inversión Pública)
SPIP	Provincial Public Investment System (Sistema Provincial de Inversiones Públicas)
TSP	Territorial strategic plan





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Acknowledgments

I wish to express my gratitude to all the people who contributed directly or indirectly to the preparation of this study, carried out as part of the knowledge generation activities of the Fiscal Management Division (FMM) of the Inter-American Development Bank (IDB). Thanks go to my co-authors, Marcelo Capello, Gabriel Farfán, Juan Carlos Aguilar and Hugo Menéndez, for turning their technical knowledge and practical experience into a study addressed to an audience of professionals involved in public investment management and committed to improving the quality of expenditure at all levels of government, especially subnational governments.

I also thank the researchers at the Institute for the Study of the Argentine and Latin American Reality (Instituto de Estudios sobre la Realidad Argentina y Latinoamericana, or IERAL), led by Marcelo Capello. Specifically, I am grateful to Laura Caullo, Rocío Cerino, Lucía Iglesias and Vanessa Toselli, who participated in the study that served as a basis for the chapter on the Argentine provinces. I also wish to thank the researchers at Integralia Consultores who, under the coordination of Gabriel Farfán, conducted the basic research that was used to prepare the chapter on the Mexican states. Sebastián Garrido and Juan Javier Santos, from the National Public Policy Laboratory, Mexico City, also contributed to the research.

My colleagues at the Inter-American Development Bank, Philip Keefer, Emilio Pineda, Carola Pessino, Edna Armendáriz, Alejandro Rasteletti and Alejandro Rodríguez, provided valuable comments, suggestions, and support throughout the elaboration and review of this study.

Finally, I would like to extend a special thanks to Eduardo Contreras, of the National University of Chile, for his detailed review of the final draft of this publication and to Marcelo Martínez for his diligent editing.

Huáscar Eguino

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Chapter 1

Introduction: The Importance
of Decentralized Public
Investment and the Factors
that Affect its Management

JUAN CARLOS AGUILAR
HUÁSCAR EGUINO



This study reviews the role played by public investment (PI) in economic growth, the relative importance of PI at the subnational level, and the need to enhance knowledge about the way it is managed. The themes discussed take on particular significance due to the limited resources that the region's countries can allocate to PI and the consequent need to improve its quality by strengthening investment management.

To analyze the main factors that influence public investment management (PIM) efficiency, a modified version of the public investment management index developed by Armendáriz and Contreras (2016) is used. This index incorporates aspects that are particularly relevant for subnational governments. This chapter presents the results of applying the index to national studies of Argentina (Capello and Eguino, 2019) and Mexico (Farfán Mares, 2019), identifying the main deficiencies of decentralized public investment management (D-PIM). Finally, it summarizes the main findings and proposes some recommendations aimed at improving D-PIM efficiency.

The four questions that inform this study are: (i) why is it important to analyze D-PIM and how important is decentralized public investment?; (ii) how efficient is D-PIM in the cases of Argentina and Mexico?; (iii) what are the main factors that impact on PIM and the quality of investments?; and (iv) what actions can be taken to improve efficiency and quality in subnational government investment management?

Each question has been analyzed in depth and some significant conclusions have been reached based on the case studies of Argentina and Mexico. They are the following: (i) PIM in subnational governments is inefficient at all the stages of the project cycle, but particularly poor in the stages of strategic planning, ex ante evaluation, impact evaluation, auditing, and asset management; (ii) subnational governments have, on average, less PIM capacity than the national government although, due to the existing wide heterogeneity, some show greater efficiency than that observed at the federal level; and (iii) additional factors that impact the inefficiency of subnational PIM are the lack of intergovernmental coordination and the difficulties faced by national governments in fulfilling their role as governing bodies for public investment at all levels of government and supporting capacity building at the decentralized level.



1.1 THE IMPORTANCE OF PUBLIC EXPENDITURE, PUBLIC INVESTMENT, AND ECONOMIC GROWTH

1.1.1 PUBLIC EXPENDITURE AT THE NATIONAL LEVEL

Various academic studies have pointed to the importance of PI, especially for economic growth.¹ These studies have confirmed that PI in infrastructure (transportation, health, education, housing, and economic development) is fundamental for encouraging greater economic growth, but only insofar as the financing that supports these investments is sustainable. PI can help, moreover, to diversify countries' economies, helping to reduce their dependence on the extraction of raw materials and driving greater productivity (e.g., through better investment in human resources).

Public expenditure at the national level has grown significantly in the Latin American region in this century, with a notable acceleration of the trend in the period 2005–15 (Table 1). This behavior is mainly due to the greater influx of public resources derived from higher national tax collection, as well as to the positive evolution of international markets for raw materials, lately more dynamic and commanding higher prices for the region's main export products. Therefore, public expenditure in Latin America rose from 22.57 percent of gross domestic product (GDP) in 2000 to a maximum level of 27.32 percent in 2015 (ECLAC, 2018a). This rising trend slowed in 2016, the year in which a turning point was reached for the first time in the behavior of average public expenditure in the region (ECLAC, 2018b).

---

1 An example is the paper *Public Capital and Growth* (Arslanalp et al., 2010), which reviews the debate around the effect of PI on growth by estimating a production function for 48 OECD countries, as well as non-OECD members, using capital stock as an explanatory variable. The results indicate that the increases in public capital stock are positively correlated with growth, after controlling for the initial level of public capital (PI). The effect is stronger in the short term for the OECD countries, whereas over the long term it is stronger for the non-member countries. This work supports the view that changes in public capital stock can explain the differences in growth rates between countries. Other recent studies specific to Latin America include: Urrunaga and Aparicio (2012); Ponce Sono (2013); and Párraga (2016), which corroborate the impacts of investment on growth, including at the subnational level.





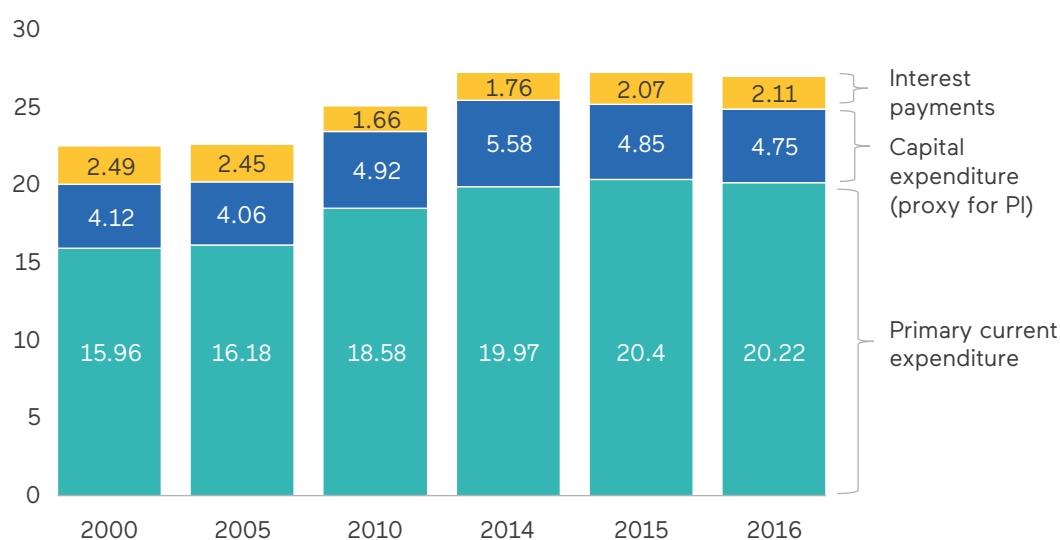
**Table 1. Structure of Public Expenditure in Latin America
(by economic classification)**

YEAR	PRIMARY CURRENT SPENDING	CAPITAL EXPENDITURE	INTEREST PAYMENTS	TOTAL	PRIMARY CURRENT SPENDING	CAPITAL EXPENDITURE	INTEREST PAYMENTS	TOTAL
	(PERCENTAGE OF GDP)				(PERCENTAGE OF TOTAL SPENDING)			
2000	15.96	4.12	2.49	22.57	70.73	18.24	11.03	100
2005	16.18	4.06	2.45	22.69	71.29	17.89	10.81	100
2010	18.58	4.92	1.66	25.16	73.87	19.55	6.58	100
2015	20.40	4.85	2.07	27.32	74.67	17.74	7.59	100
2016	20.22	4.75	2.11	27.08	74.67	17.54	7.78	100

Source: Economic Development Division (ECLAC, 2018a).
Note: In this paper, capital expenditure is used as a proxy for PI.

Primary current spending grew more than capital expenditure (as a proxy for PI), with a growth rate of 28 percent between 2000 and 2015, compared to the 18 percent growth of PI recorded in the same period. For its part, capital expenditure reached its highest level with respect to GDP (5.58 percent) in 2014, beginning its relative decline starting in 2015 (Figure 1).

**Figure 1. Evolution of Public Expenditure in Latin America
(economic classification, percentage of GDP)**



Source: Authors' elaboration based on data from ECLAC (2018a).



Chapter 1

The figures presented above confirm that the behavior of public expenditure resembles that which the Inter-American Development Bank (IDB) has observed in a recent study: “(...) it is odd that this bias against capital expenditure occurred despite the fact that there were considerable increases in primary spending as a percentage of GDP, which should have sufficient margin to increase social expenditure and other current expenditures, without notably cutting the percentage of capital expenditure. This implies a conscious decision to prioritize current expenditures over the investments needed to build the future. In other words, the present wins over the future” (Izquierdo, Pessino, and Vuletin, 2018: 8).

Moreover, it is interesting to note that, beyond the relative weight of PI as a share of total public expenditure, in general there is a considerable bias against capital expenditure, which is more significant in the Latin American region than in other regions (Table 2 and Figure 2).

Table 2. Composition of Public Expenditure per Capita by Region (in constant 2011 international dollars, adjusted for PPP*)

PERIOD	INDUSTRIALIZED ECONOMIES	G-7	EMERGING ASIA	LATIN AMERICA AND THE CARIBBEAN	DEVELOPING COUNTRIES	AFRICA
CAPITAL EXPENDITURE						
1980–85	1,131	1,097	669	701	506	285
2010–15	1,524	1,385	1,380	735	702	382
GROWTH	34.7%	26.3%	106.3%	4.9%	38.7%	34.0%
CURRENT SPENDING						
1980–85	10,212	10,036	1,054	1,687	1,353	719
2010–15	18,281	16,380	3,595	2,905	2,971	1,021
GROWTH	79.0%	63.2%	241.1%	72.2%	119.6%	42.0%

Source: Izquierdo, Pessino, and Vuletin (2018).

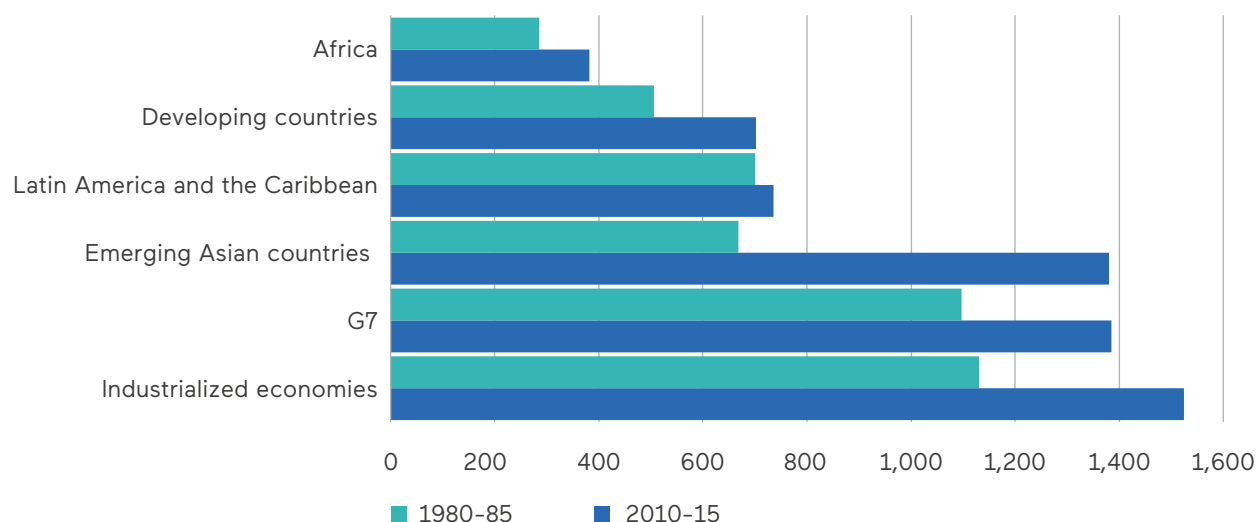
*PPP: Purchasing power parity.

The study also shows that, at the beginning of the 1980s, the countries of Latin America and the Caribbean recorded an average of US\$701 in capital spending per capita, approximately the same amount that they spend today (US\$735, or a mere 4.9 percent higher), whereas all the other regions have seen their capital expenditure per capita grow at a rate of at least double digits. In contrast, Latin America increased current spending per capita by 72 percent, rising from US\$1,687 to US\$2,905.





Figure 2. Evolution of Capital Expenditure per Capita by Region (USD per capita)



Source: Izquierdo, Puig, Végh, and Vuletin (2018).

Note: Each bar shows the median value for the period.

1.1.2 PUBLIC EXPENDITURE AT THE SUBNATIONAL LEVEL

The increasing availability of resources for public expenditure observed at the national level is similarly observed at the subnational level. This behavior is also associated with the advance of fiscal decentralization, which has contributed to the doubling of the share of subnational spending in total public expenditure over the last 30 years (Porto, Pineda Mannheim, and Eguino, 2018). In a similar vein, a review of public finance statistics in the region reveals that PI at the decentralized level (intermediate governments and local governments) represents the majority of total PI for a significant sample of countries in the region (with the notable exception of Colombia) (Table 3).



Table 3. Share of Public Investment in Selected Latin American Countries (data up to the end of 2014)

INSTITUTIONAL LEVEL		ARGENTINA	MEXICO	BRAZIL	COLOMBIA	PERU
BY INSTITUTIONAL LEVEL (% OF THE TOTAL)						
NATIONAL		36.4	24.5	24.8	67.9	35.7
SUBNATIONAL	INTERMEDIATE GOVERNMENTS	45.5	51.5	43.0	6.5	20.0
	MUNICIPAL GOVERNMENTS	18.2	24.0	32.2	25.6	44.4
NUMBER OF SUBNATIONAL GOVERNMENTS						
INTERMEDIATE GOVERNMENTS		24	32	27	33	26
MUNICIPAL GOVERNMENTS		2,171	2,438	5,570	1,122	1,838
TOTAL		2,195	2,470	5,597	1,155	1,864

Source: Authors' elaboration based on data from the IMF Public Finance Statistics (IMF, undated).
Notes: The data for Colombia are from 2018; the IMF cautions about the current difficulties of obtaining a time series consistent with information about subnational PI and mentions the possibility that not everything that appears as decentralized PI is actually such. It may be recorded as decentralized PI in one country but not in another. The case of Chile is also interesting, since PI is even less decentralized than in Colombia (the most centralized country in the table), given that the national level (sectoral and public enterprises) represents 76.2 percent and the intermediate level, 18.1 percent, whereas the municipal level is responsible for only 5.7 percent (2017 data from the Integrated Project Bank (Banco Integrado de Proyectos) at the Ministry of Social Development.

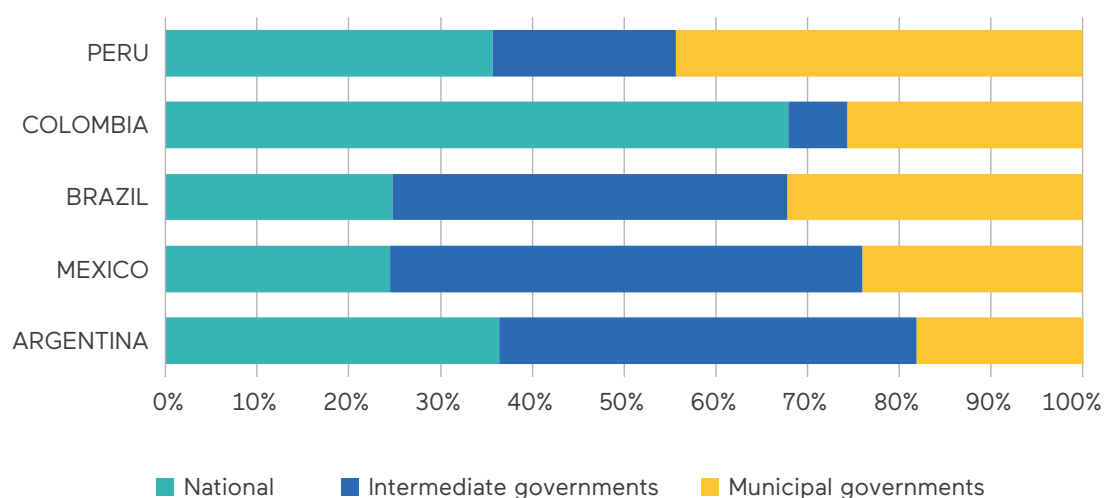
The growth of subnational expenditure is chiefly associated with the increase in the resources transferred from the national level, rather than with the governments' own resources. The resources transferred take the form of co-participation in national taxes, earmarked revenues, or discretionary transfers from the national level. Analysis of the source and the origin of the resources earmarked for subnational PI is important, insofar as this can determine the allocation of these resources based on restrictions on their use. The restrictions limit, at least in part, subnational governments' (SNGs)² capacity to exercise their responsibilities in the processes of planning and resource allocation. Nonetheless, although autonomous use of PI resources at the subnational level is variable (resulting from the different models of fiscal decentralization), subnational PI continues to be highly significant with respect to the total.

2 The importance of transfers at the national level in the total of subnational PI resources can also affect the profile and the quality of investment programs at the subnational level, since the transfers are often conditional on being used in certain sectors.





Figure 3. Composition of Public Investment by Institutional Level, 2016



Source: Authors' elaboration based on OECD (2016a).

1.1.3 EFFICIENCY IN PUBLIC EXPENDITURE MANAGEMENT

Starting in 2016, the upward trend in the growth of resources seen in the region was reversed, reducing their availability for current expenditures and investment by national governments.³ This has had a knock-on effect on the availability of resources for SNGs, chiefly for those in which revenues depend to a large extent on transfers from the national level (Table 4).

Table 4. Recent Evolution of Public Expenditure in Latin America (percentage of GDP)

YEAR	CURRENT PRIMARY EXPENDITURES	CAPITAL SPENDING	INTEREST PAYMENTS	TOTAL
2016	15.5	3.8	2.2	21.5
2017	15.4	3.6	2.3	21.3
2018	15.4	3.2	2.5	21.1

Source: Official preliminary data taken from Fiscal Panorama of Latin America and the Caribbean 2019 (ECLAC, 2019).

Note: Includes 16 countries (Bolivia and Venezuela excluded).

Unfortunately, this situation exacerbates the bias against PI that has been present in the region for some time and that, as the IDB report (Izquierdo, Pessino, and Vuletin, 2018) points out, is particularly costly for two reasons: (i) PI multipliers

3 See, for example, ECLAC (2019: 20).

are greater than current spending multipliers; and (ii) this can lead to lower growth in the medium term, insofar as public capital complements PI.⁴ Similarly, the adoption of fiscal rules also affects the composition of public expenditure, since the main objective of such rules is to ensure the sustainability of the government's fiscal accounts, by appropriate management of the economic cycle. Since fiscal rules can become a determining factor in the composition of public expenditure, it is therefore necessary to pay attention to this issue when designing them.⁵ Various governments in the region are attempting to introduce conditions into their fiscal rules, with a view to protecting PI expenditure in situations of financial stress or fiscal adjustment. These have been denominated "double-condition fiscal rules" (Izquierdo, Pessino, and Vuletin, 2018: 305), which are those based on aggregate fiscal rules in order to, directly or indirectly, "protect" PI, at least in part.

The relative downward trend in resources will continue into the future, which means that it will be increasingly important to optimize them, improving the efficiency⁶ of resource management. To put it another way, improving efficiency in the use of public resources must be prioritized, especially the efficiency of PIM.

Greater efficiency can help to maximize products, such as the volume of services provided; minimize inputs, such as the quantity of resources, time, or capital required to produce those services; and maintain or improve the quality of the services. Efficiency in public expenditure can be divided into **technical efficiency**, which seeks to optimize the use of resources by selecting the technical options with the lowest unit cost and the easiest to implement, and **allocative efficiency**, whose purpose is to prioritize between alternative expenditure items by evaluating the evidence and allocating expenditure to the programs and projects with the highest socioeconomic rates of return. Both types of expenditure efficiency are important for promoting economic growth and improving equality. Nonetheless,

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4 Afonso and St. Aubyn (2008) also analyze the effects of the crowding in and crowding out of public investment.

5 See, for example, the paper *Reglas fiscales resilientes en América Latina* (Barreix and Corrales, 2019), which analyzes the processes of implementing resilient fiscal rules in LAC, develops a typology that includes advantages and disadvantages, as well as the relevant institutional complements, the medium-term fiscal framework and independent fiscal advice, and an evaluation of the experiences obtained from its implementation. The experiences analyzed by the experts, selected according to the resilience of the rule, include Chile, Colombia, Mexico, Panama, and Peru, and also the latest countries to adopt such rules: Costa Rica, El Salvador, and Paraguay. The authors show that the rules have evolved from rules of balance—some with structural adjustment, seeking fiscal sustainability and stability throughout the cycle—to rules that control more budget aggregates, especially current expenditure, thereby seeking to protect public investment.

6 Efficiency is the capacity to achieve a previously established objective in the shortest time possible and with the minimal possible use of resources, which implies optimization. Efficiency in public management implies exploiting society's resources in the best possible way, satisfying citizens' desires and needs with the results.





until now, most of the theory has concentrated on technical efficiency, assuming that allocations of expenditure are either already optimal or too difficult to modify.

Furthermore, it seems increasingly important for both national and subnational governments to demand efficiency in public expenditure management, not only as a response to resource limitations, but also due to the need to reclaim or give greater legitimacy to public expenditure (current and investment), demonstrating that better results can be obtained with the same resources or, in some cases, with fewer. This is currently a concern in the sphere of public finance, not only with regard to the technical and allocative aspects of efficiency, but also with respect to an additional dimension, that is, **governance** of public expenditure management. In this vein, a recent study of the efficiency of public investment carried out in Brazil (Currístine and Pereira, 2018: 1) concluded that: "(...) our analysis shows that the majority of countries are struggling with sharp losses of efficiency in infrastructure investment: on average, 30 percent of the potential impact of public investment is lost, more than anything due to inefficient spending. Better governance of the infrastructure—in other words, more solid institutions in charge of public investment—would help to exploit the potential profitability of investment, reducing the losses in efficiency by up to two thirds and doubling the impact of investment on overall growth."

1.2. ANALYSIS OF THE EFFICIENCY OF DECENTRALIZED PUBLIC INVESTMENT MANAGEMENT

Economic theory proposes certain criteria to measure efficiency.⁷ In this case, the criteria that were most closely suited to the analysis of D-PIM efficiency were applied.

1.2.1 TECHNICAL EFFICIENCY

The first criterion is **technical efficiency**, which refers to the way that existing factors of production are used for processes that enable the expected results to be achieved while also conserving resources or minimizing costs. The way the project cycle operates at the SNG level must therefore be taken into account, with reference to existing capacities to implement its different stages. The capacities to coordinate these project cycle stages, as well as the support received from the available information systems, are also important aspects for achieving higher or lower technical efficiency.



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⁷ See, for example, Eficiencia técnica, eficiencia económica y eficiencia dinámica (Cachanosky, 2012). Among the most notable are those developed by the World Bank (Rajaram, Le, Biletska, and Brumby, 2010); the IMF (Dabla-Norris et al, 2011); the IMF-PIMA (IMF, 2015b), and the IDB (Armendáriz et al., 2016).

1.2.2 ALLOCATIVE EFFICIENCY

The second criterion is **allocative efficiency**, which measures the benefit or the utility derived from a proposed decision in the distribution of economic resources available for PI. Applying this concept to D-PIM, allocative efficiency will be seen to improve insofar as:

- Resource allocation is the result of an appropriate medium/long term planning process.
- It derives from a multiannual PI expenditure framework, which is based, in turn, on a medium-term macro-fiscal framework, consistent with strategic policies and plans.
- It takes into account the roles and the preferences of the relevant actors on the ground and arises from a process of consensus or coordinated decision-making involving the aforementioned actors.
- It has evaluated the availability of resources (financial and human) in different scenarios, including the most realistic, and includes the institution's own fiscal effort.

1.2.3 MANAGEMENT EFFICIENCY

Finally, an aspect that affects the other two (allocative efficiency and technical efficiency) is **management efficiency**, which refers to the institutional capacities existing at the subnational level for identifying, evaluating, and executing PI in its territory, as well as for exploiting the opportunities for intergovernmental coordination established by the current institutional framework. These capacities, suitably developed and exercised, improve operation within the existing regulatory frameworks and pave the way for improved D-PIM, as well as optimizing the use of resources available for investment.

1.2.4 FACTORS RELATED WITH MANAGEMENT EFFICIENCY IN PUBLIC INVESTMENT

In the previous section, we concluded that technical efficiency and allocative efficiency are underpinned, to a large extent, by the developed or existing institutional capacities, although the latter are the ones that help to aim toward higher-quality D-PIM.





At the SNG level, there is a significant range of factors that can influence the institutional capacities that enable efficient D-PIM. These include: (i) the authority received and assumed by the subnational level; (ii) the degree of autonomy granted in management or decision making; (iii) the source of the resources available to finance PI needs; (iv) existing financial capacity; (v) the degree of institutional development; (vi) the degree of infrastructure development; (vii) the available human resources, and (viii) the relative size of the territory and its population.

It would therefore seem important to divide these factors into those related to the **context** in which D-PIM is deployed and those related to the **processes** of management.

Contextual factors are related to:

- The national policy and regulatory framework.
- The framework of decentralization.
- The institutional fabric and the coordinating bodies.
- The degree of development of the local/regional economy.

The **policy and regulatory** framework established at the central level has an impact on decentralized PI, since it incorporates guidelines for sector expenditure or restrictions on the use of public resources. These aspects influence the use of the resources placed at the disposal of SNGs for PI and their allocative efficiency. Furthermore, the national government establishes a series of regulations that include, among others, the fiscal rules that affect the level and the composition of expenditure, the establishment of borrowing limits, and the establishment of planning and fiscal management regulations. In terms of PI, the regulations that control the processes of PI planning and programming are particularly important, as are those that are applied to the different stages of the project cycle. The latter regulations are part of the so-called public investment systems, which incorporate a series of management instruments ranging from guides for project preparation to guidelines for evaluating their results. The impact of these systems' regulations on PI efficiency is high, since the pre-investment studies in their different stages (profile, pre-feasibility, feasibility, final design) offer information enabling decision makers to discard any investment proposals that are not socio-economically beneficial.



The second factor that impacts management efficiency is the degree of autonomy that the **decentralization** policy establishes for the SNG. The roles,

competencies, obligations, and responsibilities are established in the framework of decentralization policies and can determine—to a greater or a lesser degree—the efficiency of PI management in the SNG. In principle, federal schemes should seek a higher level of management autonomy in their territories, including PIM. Nonetheless, this does not always occur, since the way in which subnational resources or decentralized powers are transferred can lead to a higher or a lower degree of management autonomy, once more impacting spending decisions and, therefore, D-PIM efficiency. One example of this situation is inter-governmental transfers with predetermined uses (also known as earmarked transfers), which have a negative impact on efficiency by limiting subnational government capacity to allocate resources to the sectors or areas of greatest need.

The **institutional fabric and its degree of development** in the SNG are also determinants of investment quality. Their characteristics can help or hinder the inclusion and participation of the relevant institutional actors so that, alongside SNG political leaders, they can contribute to appropriate D-PIM. Similarly, greater institutional development enables greater capacity to take full advantage of the opportunities provided by the national framework of policies and regulations, establishing the mechanisms for better coordination of investment initiatives (within the public sector or with the private sector) and also better inter-institutional coordination.

Finally, the degree of **development of the local/regional economy** also plays a significant role in enabling an SNG to generate its own resources to allocate to PI, in its capacity to attract (or retain) the human resources necessary for effective PIM, and in its capacity to better coordinate and leverage private investment. The SNGs that enjoy greater revenue autonomy also have the most freedom to decide how to use their own resources and which investment projects they wish to implement.

For their part, **process factors** are more related to the influence of the various stages of the project cycle on PIM efficiency. These factors focus on identifying the most efficient way of developing existing institutional capacities to implement the different stages of the project cycle, as well as on exploiting the instruments that support project cycle management. The existence or the development of strategic planning capacities—multiannual horizons—for PI programs represents the first institutional challenge faced by an SNG. The capacities to identify, prepare, and evaluate the best subnational PI projects are determining factors in evaluating D-PIM efficiency.

The institutional capacities to negotiate the incorporation of investment projects in subnational budgets, as well as to carry out subsequent monitoring and control once the projects reach the execution phase, also have an impact on D-PIM efficiency.





Finally, the institutional capacities developed to carry out systematic evaluations of investment projects either in the operational or the completed phase affect the development of subsequent investment programs, which can benefit from lessons learned during the phases of pre-investment, investment and start of operations of the projects already implemented.

In this section, the **process factors** have been described that affect both allocative efficiency and technical efficiency. Likewise, the **contextual factors** have been identified that can exert a determining effect on both dimensions of efficiency (allocative and technical).

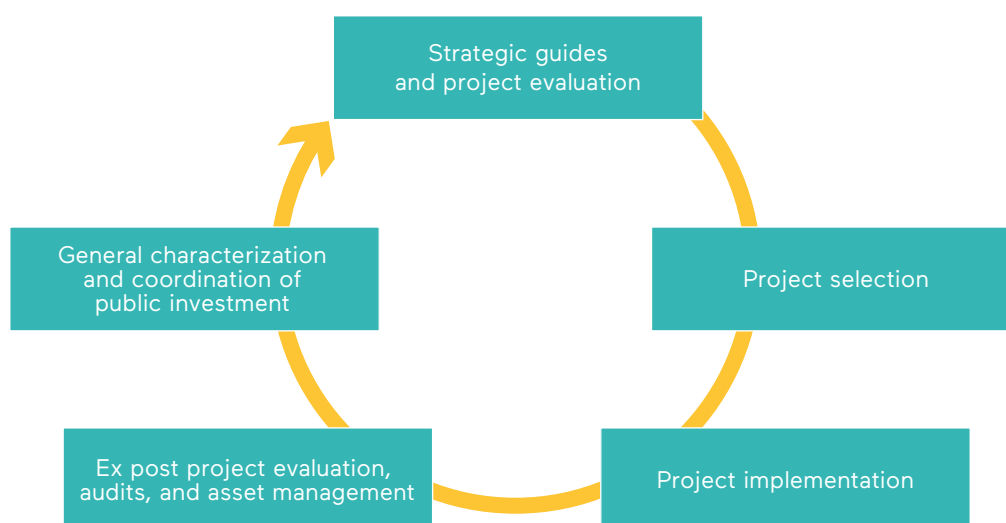
The appraisal of D-PIM must therefore incorporate (at least partially) the factors indicated in the instruments of analysis, proposing new dimensions and specific sub-dimensions that can capture its main characteristics and influence. Again, an example of a proposed determining factor is the characterization of SNG intergovernmental coordination capacities. The importance of this factor is crucial for making SNGs capable of developing mechanisms for institutional relations with actors on different institutional levels—and with private actors—to fully exploit the framework provided by the decentralization model adopted in the respective countries, to better navigate the tensions generated by the different institutional options (possible hierarchies), and to develop forms of strategic action that can benefit their territories.



1.3 METHODOLOGY FOR THE ANALYSIS OF DECENTRALIZED PUBLIC INVESTMENT MANAGEMENT

Over the last ten years, a number of studies⁸ have been carried out that attempt to measure PIM efficiency at the national level. In general, they have focused on studying **process factors**, analyzing and systematically organizing the elements involved in PI project cycle management. The pioneer study conducted by Dabla-Norris et al. (2011) developed an index of PIM to find a way of measuring its efficiency at the national level. It proposes new ways of measuring national PIM management based on indices. Subsequently, the study by Armendáriz and Contreras (2016) incorporated the analysis of different factors, under the heading of dimensions, organized and consolidated into five areas: (i) strategic guides and project evaluation; (ii) project selection; (iii) project implementation; (iv) ex post project evaluation, audits, and asset management; and (v) general characterization and coordination of public investment (Figure 4). These dimensions include, in turn, 16 sub-dimensions that attempt to capture the aspects most relevant for D-PIM.

Figure 4. Dimensions for Constructing the D-PIM Efficiency Index



Source: Authors' elaboration.

8 Among the most notable are those developed by the World Bank (Rajaram et al., 2010); the IMF (Dabla-Norris et al., 2011); the IMF-PIMA (IMF, 2015b); and the IDB (Armendáriz et al., 2016).





The first dimension reveals aspects related to the existence of strategic sector-based or territorial plans that inform the process of identifying investment needs, as well as the existing capacities to develop project formulation and evaluation processes (Table 5).

The second dimension centers on establishing the budgetary and legislative details, such as the existence of pluriannual budgets, integration of the medium-term budget planning framework with the annual budget earmarked for PI, and public access to information, among other factors. Moreover, it seeks to find out how stakeholders are represented in the budget analysis and formulation process, or whether the allocation of a budget to a certain project is conditioned by laws or decrees. It also attempts to analyze the role of public opinion and the ease of access to information about investment projects, as well as the role of ex ante evaluations and the analysis of financial and environmental risk when selecting and prioritizing investments.

The third dimension deals with matters related to public procurement (open competition, a register of suppliers and contractors, a complaint resolution mechanism, etc.) for the execution of contracts, with average project delivery times and ongoing project accountability. This dimension also includes internal controls and audits of the national PI system and ways to determine whether corrective actions should be taken.

The fourth dimension involves investment project results evaluations, whether through impact or ex post evaluations. It explores whether SNGs evaluate their project results and how the findings are incorporated into new investment initiatives and, moreover, whether they have the tools and skills to carry out effective asset management and audits. In this dimension, the institutional capacity to operate and maintain already completed investments is particularly important.

Finally, the fifth dimension reveals the cross-cutting aspects of the different stages of the PI process and, through two additional sub-dimensions not included in previous national-level studies, opens up the possibility of evaluating the aspects of intergovernmental coordination and relations, as well as funding and the role of fiscal aspects in PIM. The innovation of introducing cooperation between levels of government, essential when it comes to D-PIM, is one of the reasons why building an index such as the one applied in this study is useful.



Table 5. Dimensions and Sub-dimensions of the Proposed Questionnaire

DIMENSION 1: STRATEGIC GUIDES AND PROJECT EVALUATION	
1.1 Strategic guide	
1.2 Project evaluation capacity	
1.3 Project preparation and evaluation methodologies/social prices	
1.4 Project evaluation	
DIMENSION 2: PROJECT SELECTION	
2.1 Integration with the budget	
2.2 The role of legislation	
2.3 Public scrutiny	
2.4 Selection criteria	
DIMENSION 3: PROJECT IMPLEMENTATION	
3.1 Adjudication	
3.2 On-time project completion	
3.3 Internal monitoring and auditing	
DIMENSION 4: EX POST PROJECT EVALUATION, AUDITS, AND ASSET MANAGEMENT	
4.1 Project evaluation, audits, and asset management	
DIMENSION 5: GENERAL CHARACTERIZATION AND COORDINATION OF PUBLIC INVESTMENT	
5.1 Operational descriptions	
5.2 The role of legislation	
5.3 Appropriate human resources	
5.4 Public scrutiny throughout the entire cycle/access to information in general	
5.5 Support systems	
5.6 Strategic guidelines of the system	
5.7 Cooperation between national, provincial, and municipal governments	
5.8 Investment funding, fiscal responsibility, and project cycle management policy	

Source: IERAL based on Armendáriz and Contreras (2016).





1.3.1 APPLICATION AT THE SUBNATIONAL LEVEL AND STUDY STRUCTURE

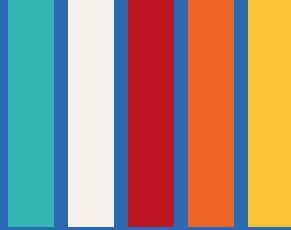
The study was carried out in two Latin America and the Caribbean (LAC) countries that have both a federal regime (Argentina and Mexico) and national public investment systems.⁹ It was based on the methodological proposal prepared by IERAL—within the framework of this research (see Annex 1)—and on the results of the field study carried out in the Argentine provinces and the Mexican states during the second half of 2018.

The results of applying the D-PIM index provide an aggregate perspective on five important dimensions of management (Table 5). As explained in the previous section, the innovative aspects of this study are the inclusion of project evaluation capacity (Dimension 1); coordination and cooperation between different levels of government with respect to PIM (Dimension 5), and the existence of fiscal responsibility rules that affect the funding of decentralized public investment (Dimension 5). These aspects were incorporated following a detailed review of the existing methodologies (see Annex 1) and based on recognition of the importance of fiscal rules, intergovernmental coordination and of capacity building for public expenditure management at the subnational level.

This publication is divided into four chapters. This first chapter introduces the importance of decentralized PI and presented the methodology employed in the study of the efficiency of PI management at the subnational level. The second chapter presents the situation in the Argentine provinces, which includes a review of the institutional, regulatory, and quantitative aspects of decentralized PI; the institutional framework of D-PIM; the results of the PIM index in the Argentine provinces; a comparison of the subnational and the national indices; and a series of recommendations for policymakers. Chapter 3 examines the PIM situation in the Mexican states, applying the same analytical sequence used for the Argentine provinces. Finally, Chapter 4 presents a synthesis of the study's main conclusions and incorporates a series of recommendations based on national studies and international best practices.



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9 Brazil was not included because the country lacks a formal public investment system.



Chapter 2

Public Investment Management Efficiency in the Argentine Provinces

MARCELO CAPELLO



2.1 INTRODUCTION¹⁰

Public investment (PI) is important for a country's economic growth, since it creates the infrastructure necessary for providing public and private goods and increasing the productivity of the economy. Efficient public investment management (PIM) therefore constitutes a prerequisite for improving levels of well-being.

Whereas PIM systems at the central level have received increasing attention, the same has yet to occur with decentralized public investment management (D-PIM). As Argentina is a country with a low rate of investment in general and conspicuous infrastructure gaps between its intermediate subnational governments (ISNGs), the study of PIM processes at this level of government represents an important contribution to the improvement of their fiscal and economic management.

This section will describe the index used to measure subnational PIM efficiency through a survey of the Provincial Public Investment System (Sistema Provincial de Inversiones Públicas, or SPIP) in the provinces and the Autonomous City of Buenos Aires (Ciudad Autónoma de Buenos Aires, or CABA). The aims of this comparative exercise are to identify the main institutional characteristics involved in PIM, to build a shared understanding of the reform efforts that should be prioritized, and to establish a baseline with which to measure future progress in this area.

Furthermore, in accordance with the conceptual and empirical motivation that prompted this study, it presents characteristic aspects of fiscal policy and PI in Argentina, such as their procyclicality, the volatility of fiscal results at the provincial level, and the dependence of investment on discretionary transfers from the central level, among other relevant indicators.

The first section characterizes the different provincial jurisdictions by relevant fiscal variables, analyzing the level and the evolution of PI in Argentina's ISNGs as well as its procyclical nature. Then, it briefly describes the legal and institutional environment in which PIM is carried out in the provinces. Finally, it reveals the results of the subnational PI efficiency index and puts forward the consequent economic policy recommendations alongside the study's conclusions.

10 This chapter synthesizes the results of a study conducted by IERAL for the Inter-American Development Bank (IDB) under the project *Cuánto y cuán eficiente es la gestión de la inversión pública subnacional?* (How efficient is subnational public investment management?) Huáscar Eguino, coordinator of the project for the IDB; Emilio Pineda, at that time Lead Specialist Principal at the IDB in Argentina, and the consultants Juan Carlos Aguilar, Hugo Menéndez, and Marcelo Martínez all participated in the review of the study of Argentina. In the VIII Ibero-American Conference on Local Financing (2018) (Jornadas Iberoamericanas de Finanzas Locales), a preliminary version of the study was presented, which received several suggestions for its improvement.

2.2 INSTITUTIONAL AND QUANTITATIVE ASPECTS OF PUBLIC INVESTMENT BY PROVINCIAL GOVERNMENTS

Argentina is organized under a representative, republican, and federal form of government, in which the public sector is divided into three levels: national, provincial, and municipal. The provincial jurisdictions can be grouped into five regions: (i) Pampean; (ii) Cuyo; (iii) Northwest Argentina (NOA); (iv) Northeast Argentina (NEA); and (v) Patagonia.¹¹

In terms of infrastructure, there is wide heterogeneity between the provinces. Table 6 shows the results in terms of infrastructure, social services, and housing, based on information from the most recent Population, Household and Housing Census (INDEC, 2010). The level and the differences that exist between provinces in the different indicators examined confirm the importance of establishing an efficient PI system at the subnational level of government in Argentina.

Table 6. Indicators of Infrastructure and Access to Basic Social Services by Region of Argentina in 2010 (% of total households)

	HOUSEHOLDS WITH ACCESS TO MAIN SEWER LINE	CONCRETE FLOOR*	HOUSEHOLDS WITH HOUSING DEFICIT OR INADEQUATE HOUSING**	PUBLIC EDUCATION UNITS WITH ACCESS TO THE INTERNET
NATIONAL TOTAL	54.6	74.7	24.1	63
CABA	99.0	96.1	5.2	98.7
Pampean region	48.8	79.2	26.9	63.2
NOA	50.9	56.3	33.8	39.6
NEA	34.2	45.6	34.3	42.4
Patagonian region	74.4	61.6	14.4	87.5
Cuyo	56.0	76.6	19.9	87.1

Source: IERAL Mediterranean Foundation based on the INDEC census (INDEC, 2010) and the Education Annual Statistical Report (Anuario Estadístico Educativo) 2018, by the Ministry of Education, Culture, Science and Technology (2019).

Notes: *Refers to the existence in the segment of at least one room with a concrete floor.

**Characterized by housing with either reparable or irreparable defects.

11 The Northwest region (NOA) consists of Catamarca, Jujuy, La Rioja, Salta, Santiago del Estero and Tucumán; the Northeast region (NEA) is formed by Corrientes, Chaco, Formosa and Misiones; Patagonia, by Chubut, Neuquén, Río Negro, Santa Cruz and Tierra del Fuego; the region of Cuyo, by Mendoza, San Juan and San Luis, and the Pampean region, by Buenos Aires, Córdoba, Entre Ríos, El Pampa and Santa Fe.





The percentage of households that are connected to the main sewer line in the Patagonian region and CABA is high, whereas the NEA and NOA provinces record very low levels of connection. These kinds of differences are also reflected in the indicator of paved roads: at the national level, in 74.7 percent of the cases of each block in which housing is located, on average at least one of the streets is paved; in the NEA and NOA provinces, this proportion is significantly lower.

A further significant indicator in terms of infrastructure relates to the proportion of households living in sub-standard housing due to structural problems that may or may not be reparable. Around 2010, 24.1 percent of the country's households were living in inadequate housing. This was the case in only 5.2 percent of households in CABA, whereas it rose to 34 percent in the NOA and the NEA regions.

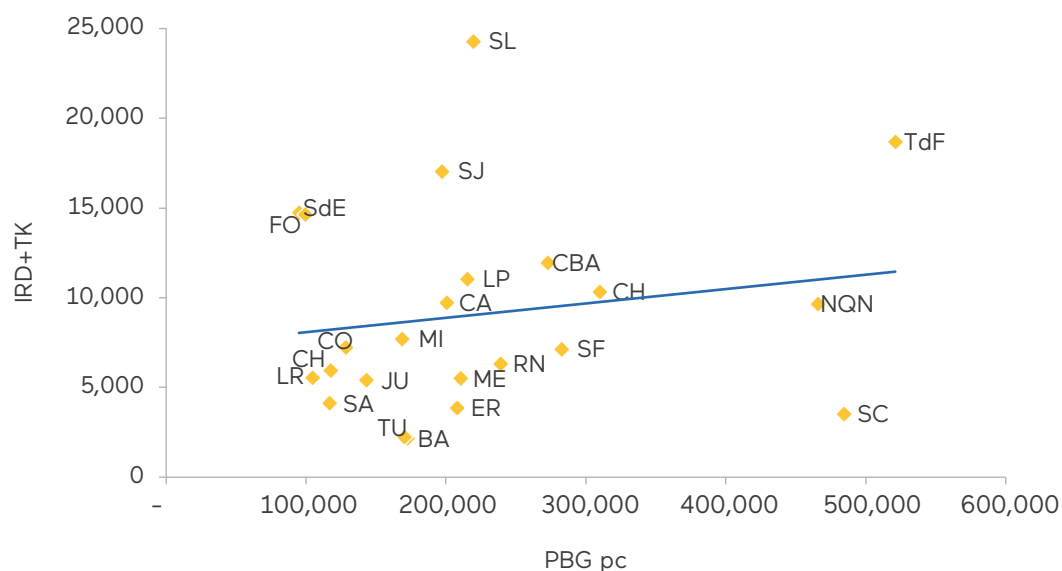
Finally, an indicator provided by the Annual Statistical Report on Education 2018 (Ministry of Education, Culture, Science and Technology, 2019) is the percentage of public education units providing common education (pre-school, primary, secondary, or higher/non-university) that have access to the internet. In this aspect, the disparities are also significant. More than 80 percent of the establishments in jurisdictions such as CABA and the Patagonian region have achieved connectivity. At the other extreme, in the NOA region, only 39.6 percent of establishments have access to the internet.

In sum, these examples reveal significant heterogeneity in the results achieved in terms of social infrastructure among jurisdictions in the country. This could be associated with different causes, one of them undoubtedly related to shortcomings in PIM.

One of the factors that explain the deficiencies in provincial infrastructure seems to be associated with the level of gross geographical product (GGP) per inhabitant of each jurisdiction. This means that automatic redistributive fiscal transfers that exist in Argentina to narrow the gaps in infrastructure have been ineffective or that neither the allocation of the direct national investment executed in the provinces nor the discretionary capital transfers to the aforesaid subnational jurisdictions (Figure 5) have been successful.



Figure 5. Gross Geographical Product and Expenditure in Real Direct Investment + Capital Transfers by Argentine Provinces (current (USD per capita, 2018))



Source: IERAL Mediterranean Foundation based on DNCFP and authors' estimates.

Note: The CABA, a jurisdiction that acts as an outlier, has been excluded to reflect in the dispersion diagram the existing relation between PI and gross geographical product (GGP). GGP is equivalent to gross domestic product (GDP), but for a specific region/province of the country.

2.2.1 PUBLIC FINANCES AND INVESTMENT IN THE ARGENTINE PROVINCES

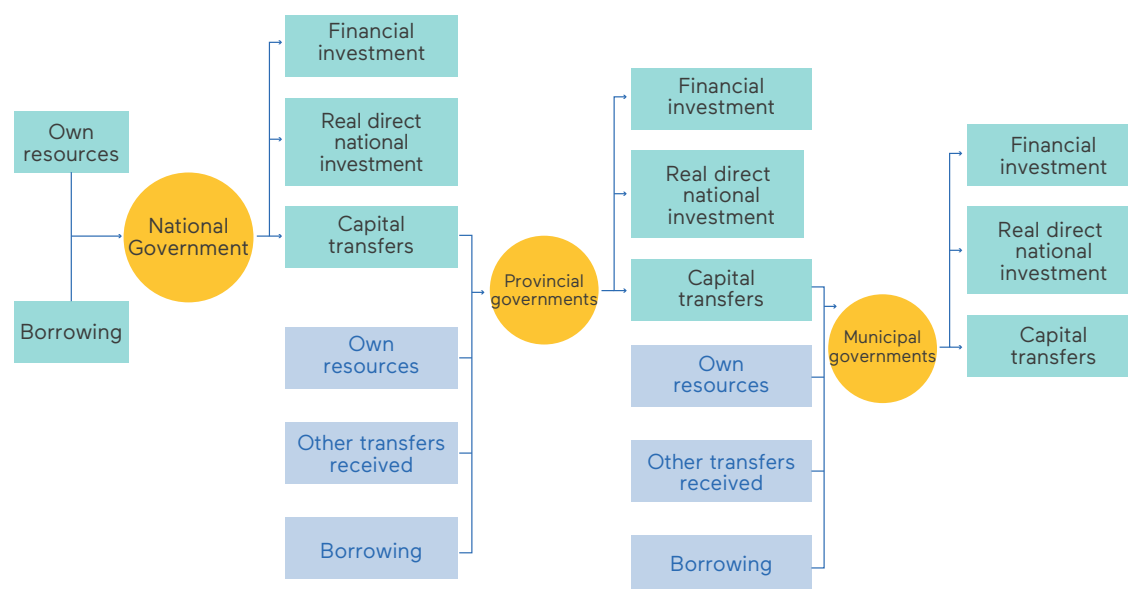
Capital expenditure at each level of government can be classified as one of the following three major components: (i) real direct investment (RDI), which includes new infrastructure works and the procurement of capital goods destined to increase or replace the stock of public capital goods; (ii) capital transfers to lower units of government or to private actors to carry out capital expenditures; and (iii) financial investment made by the State at any of its three levels. This paper focuses on the treatment of RDI, which is considered PI in national accounts, representing a portion of the country's total investment. Capital transfers normally become RDI by a lower unit of government.

The sources of funding for capital expenditure are either own resources or current savings from the period, alongside debt placement or other capital revenues of each level of government and resources received from other levels through capital transfers. Figure 6 depicts this structure of financing and expenditure at the three levels of government.





Figure 6. Financing and Use of Capital Expenditure at the Three Levels of Government in Argentina



Source: IERAL Mediterranean Foundation.

The provinces and the municipalities are responsible for executing approximately 45 percent of consolidated spending in Argentina. Considering the share of provincial spending earmarked for each purpose and function in 2015, social services accounted for around 70 percent of provincial consolidated spending. Education and culture are the most significant, with 29.2 percent of total spending, followed by social security and health, with shares of over 10 percent each. With respect to expenditure on economic services, the service sectors and, within these, transportation, account for the highest share (4.1 percent and 3.9 percent, respectively) (Table 7).

Table 7. Composition of Provincial Primary Spending, 2015 (as a percentage)

I) SOCIAL SERVICES	69.5
I.I) EDUCATION	29.2
I.II) HEALTH	10.0
I.III) OTHERS	30.4
II) ECONOMIC SERVICES	7.9
II.I) SERVICES	4.1
II.I.I) TRANSPORTATION	3.9
II.II) OTHERS	3.8
III) OTHERS PRIMARY EXPENDITURES	22.6

Source: IERAL Mediterranean Foundation with data from the Ministry of Economy (National Directorate for Coordination with the Provinces, 2015).

Given the distribution of functions between levels of government in Argentina, provincial PI is chiefly concentrated in the areas of public safety, education, health, drinking water, sewage, housing, town planning, energy, and transportation. The Cuyo region records the highest RDI per inhabitant (24.2 percent higher than the average), whereas the Pampean region is at the other extreme, with spending at 22.5 percent below the average. What happens in Cuyo with regard to this variable is largely determined by the situation in San Luis and San Juan (Table 8).

Table 8. Real Direct Investment per Inhabitant, 2018 (in current pesos)

NEA	6,707
NOA	5,024
CUYO	7,164
PATAGONIA	5,478
PAMPEAN REGION	4,473
AVERAGE	5,769

Source: IERAL Mediterranean Foundation with data from the Ministry of Economy (National Directorate for Coordination with the Provinces, 2018).

In contrast, current spending per inhabitant is highest in Patagonia (71.8 percent higher than the average), whereas in Cuyo current spending per inhabitant is 24.7 percent lower than the provincial average. The region where capital expenditure is funded to the greatest extent from the most volatile sources (discretionary transfers and use of borrowing) is Patagonia, whereas in the region of Cuyo, the reverse is true (Table 9).

Table 9. Current Spending per Inhabitant, 2018 (in current pesos)

NEA	53,696
NOA	44,647
CUYO	43,089
PATAGONIA	98,324
PAMPEAN REGION	46,476
AVERAGE	57,246

Source: IERAL Mediterranean Foundation with data from the Ministry of Economy (National Directorate for Coordination with the Provinces, 2018).





Moreover, the region of Cuyo records the highest current fiscal saving, while the Pampean region is at the other end of the scale, with the lowest current saving per capita. Capital expenditure per capita is largely explained by the current saving achieved by each province, although the capital transfers that the provinces receive from the national government also exert a positive influence. Nonetheless, in this case these transfers are often unpredictable, as they can be influenced by political variables (Table 10).

Table 10. Current Saving per Inhabitant, 2018 (in current pesos)

NEA	5,001
NOA	5,748
CUYO	10,127
PATAGONIA	7,426
PAMPEAN REGION	3,612
AVERAGE	6,383

Source: IERAL Mediterranean Foundation with data from the Ministry of Economy (National Directorate for Coordination with the Provinces, 2018).

The national average for the portion of total spending earmarked for capital expenditure was 14.6 percent. It ranges from 9.6 percent in the Patagonian region to 23.1 percent in Cuyo (Table 11).

Table 11. Capital Expenditure as a Proportion of Total Spending (percentage)

NEA	14.2
NOA	14.9
CUYO	23.1
PATAGONIA	9.6
PAMPEAN REGION	11.4
AVERAGE	14.6

Source: IERAL Mediterranean Foundation with data from the Ministry of Economy (National Directorate for Coordination with the Provinces, 2018).

In Patagonia, which had a low investment rate in 2018 (9.6 percent of total spending) Chubut (11.7 percent) stands out as the most dynamic municipality, while Santa Cruz recorded the poorest performance (5.5 percent). In Cuyo, San Luis (38.3 percent) and San Juan (32.0 percent) executed highest capital expenditure. In the Pampean region, CABA and Cordoba account for the highest share (19.2 percent), whereas a low percentage is recorded in the province of Buenos Aires and Entre Ríos (between 5 and 7 percent).

2.2.2 LONG-TERM EVOLUTION OF PUBLIC INVESTMENT IN ARGENTINA (BY LEVEL OF GOVERNMENT)

When the evolution of RDI (which includes expenditure on public works and capital goods) executed by the three levels of government in Argentina is analyzed, a shift can be seen starting in 2003, when—after the contraction recorded between 2001 and 2003—the average level of RDI as a share of GDP was around 3.0 percent between 2004 and 2017 (Table 12).

Table 12. Share of Public Investment by Level of Government in Argentina

PERIOD	NATIONAL	PROVINCES	MUNICIPALITIES	CONSOLIDATED
AVERAGE (PERCENTAGE OF GDP)				
1993–99	0.3	1.0	0.4	1.7
2000–03	0.1	0.7	0.2	1.1
2004–15	0.9	1.4	0.5	2.9
2016–17	0.9	1.6	0.5	3.1
AVERAGE (PERCENTAGE OF TOTAL)				
1993–99	18.7	60.0	21.3	100.0
2000–03	12.8	65.3	22.6	100.0
2004–15	33.1	50.2	16.8	100.0
2016–17	30.2	52.5	17.2	100.0

Source: IERAL Mediterranean Foundation with data from the Ministry of Economy (National Directorate for Coordination with the Provinces).

One notable aspect of this process is the increase in RDI executed by the national public sector, which rose from representing an average 0.3 percent of GDP between 1993 and 1999 to an average of 0.9 percent from 2004 onwards.¹² The provinces, for their part, reached an average level of nearly 1.1 percent of GDP between 2004 and 2017, with a maximum of 1.8 percent in 2017 (Figure 7).

The growth in the provincial share of consolidated PI observed between 2016 and 2017 is due to the fact that the provinces began to receive a refund of 15 percent of the co-participation funds provided by the National Social Security Administration (Administración Nacional de la Seguridad Social, or ANSES) and that they were again able to access external credit.

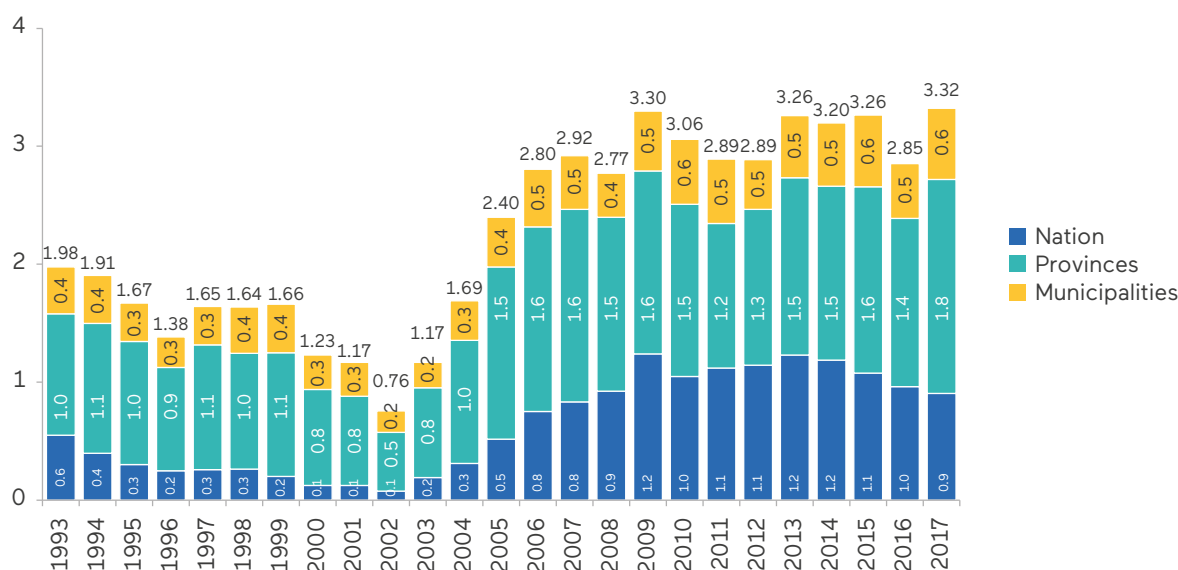
12 Following the crisis of 2001–02, the national government resumed control over certain activities that had been in the hands of the private sector or the provincial governments, thereby increasing its commitments with respect to public investment.





All three levels of government execute RDI (public works and capital goods), but the national and provincial levels transfer resources to the next level of government down (national to provinces, and provinces to communes and municipalities). These capital transfers may be automatic or discretionary. When they are automatic, they fall within a tax resource distribution system, with specific allocation to capital spending, backed by a legal instrument of some description. By contrast, discretionary transfers do not share these characteristics, as they are not backed by a special law that determines the distribution of a tax. Rather, they are included in the annual budget (they are not allocated in accordance with coefficients of distribution based on objective criteria). These latter transfers are often more prone to political discretionality.

Figure 7. Evolution of Real Direct Investment in Argentina by Level of Government (percentage of GDP)



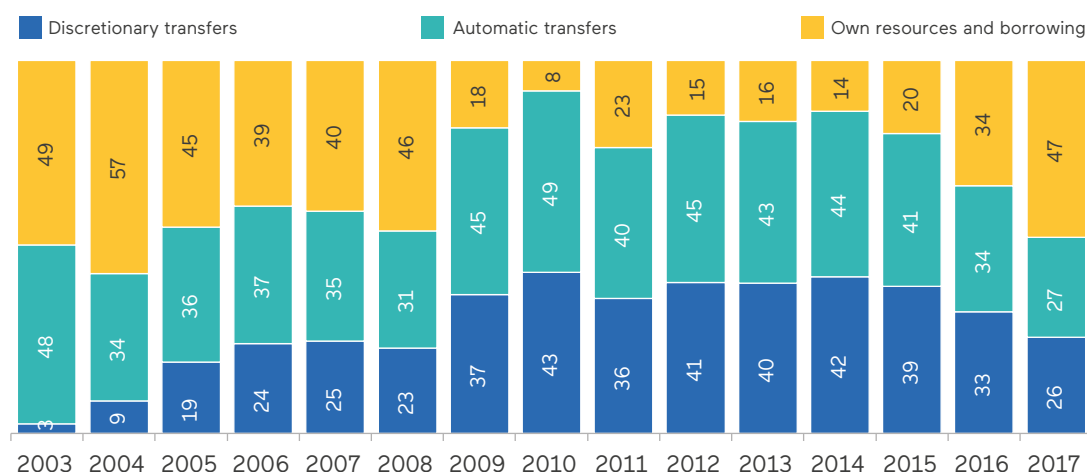
Source: IERAL Mediterranean Foundation with data from the Ministry of Economy (National Directorate for Coordination with the Provinces).

In the period 2003–17, important changes occurred regarding the share of each source of PI financing in the provinces. Starting in 2004, the share of discretionary capital transfers to the provinces grew sharply, reaching a maximum of 43 percent in 2010, followed by a period of stability until it began to fall back again in 2016 (in 2017, it represented 26 percent of the total), accounting for 30 percent of the investment between 2003 and 2017. Automatic transfers to finance capital expenditures represented between 27 percent (2017) and 49 percent (2010) of the total, with an average of 39 percent in the period 2003–17. Adding together automatic and discretionary transfers, 69 percent of PI in the provinces was financed with transfers



from the national level in that period (the remaining 31 percent came from current savings and borrowing). Starting in 2015, the provinces' own resources and borrowing increased their share of funding from consolidated provincial capital expenditure. This can fundamentally be explained by the improvement observed in the current provincial fiscal outcome and in access to external financing (Figure 8).

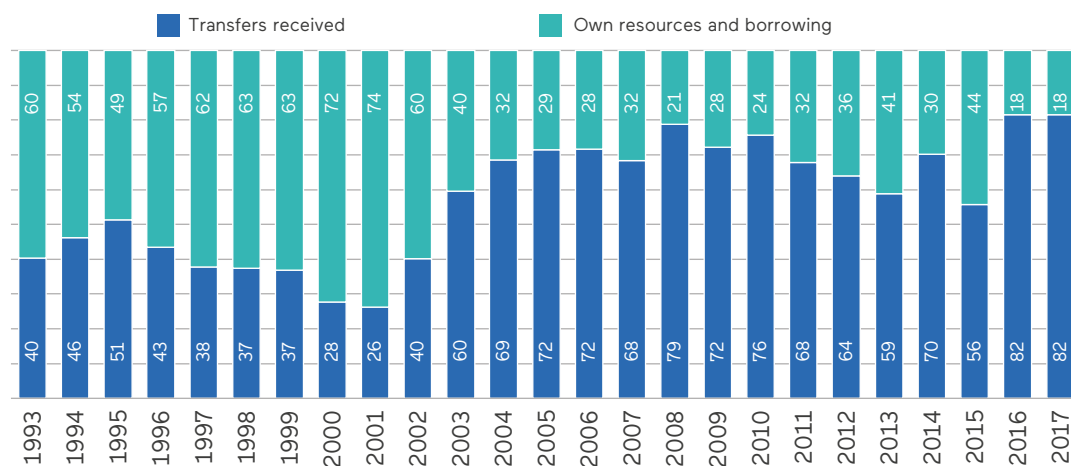
Figure 8. Source of Financing of Consolidated Capital Expenditure by Argentine Provinces (as a percentage)



Source: IERAL Mediterranean Foundation with data from the Ministry of Economy (National Directorate for Coordination with the Provinces).

Note: Automatic transfers are those that the provinces receive from the national level to use for capital expenditure, such as the Federal Solidarity Fund and funds from fuel tax revenues, among others.

Figure 9. Source of Financing of Consolidated Capital Expenditure by Municipalities in Argentina (as a percentage)



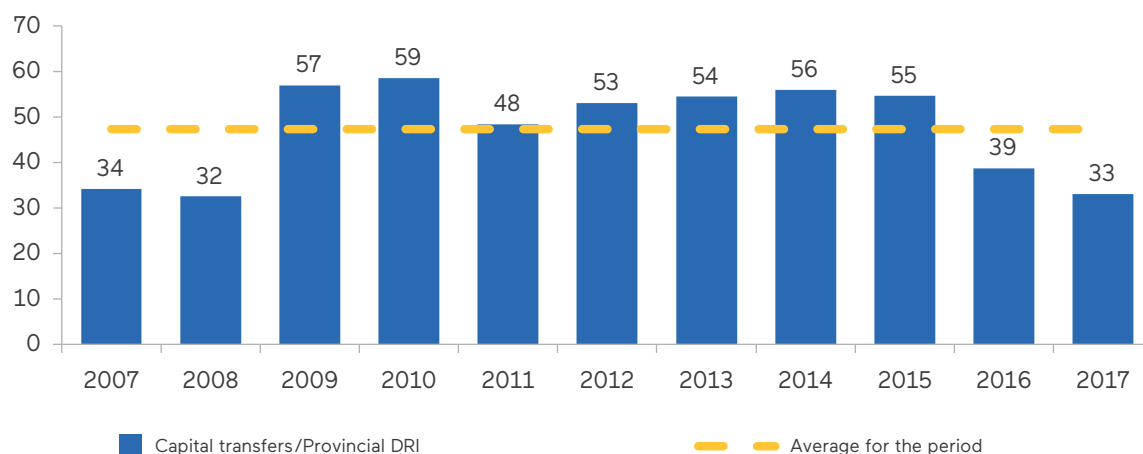
Source: IERAL Mediterranean Foundation with data from the Ministry of Economy (National Directorate for Coordination with the Provinces).





On average, between 2007 and 2017, 47 percent of the capital expenditure executed by the provinces was financed with discretionary capital transfers made by the national government. This proportion has always exceeded 30 percent, reaching almost 60 percent at some points (Figure 10).

Figure 10. Proportion of Provincial Capital Expenditure Financed with Discretionary Transfers from the National Level (as a percentage)

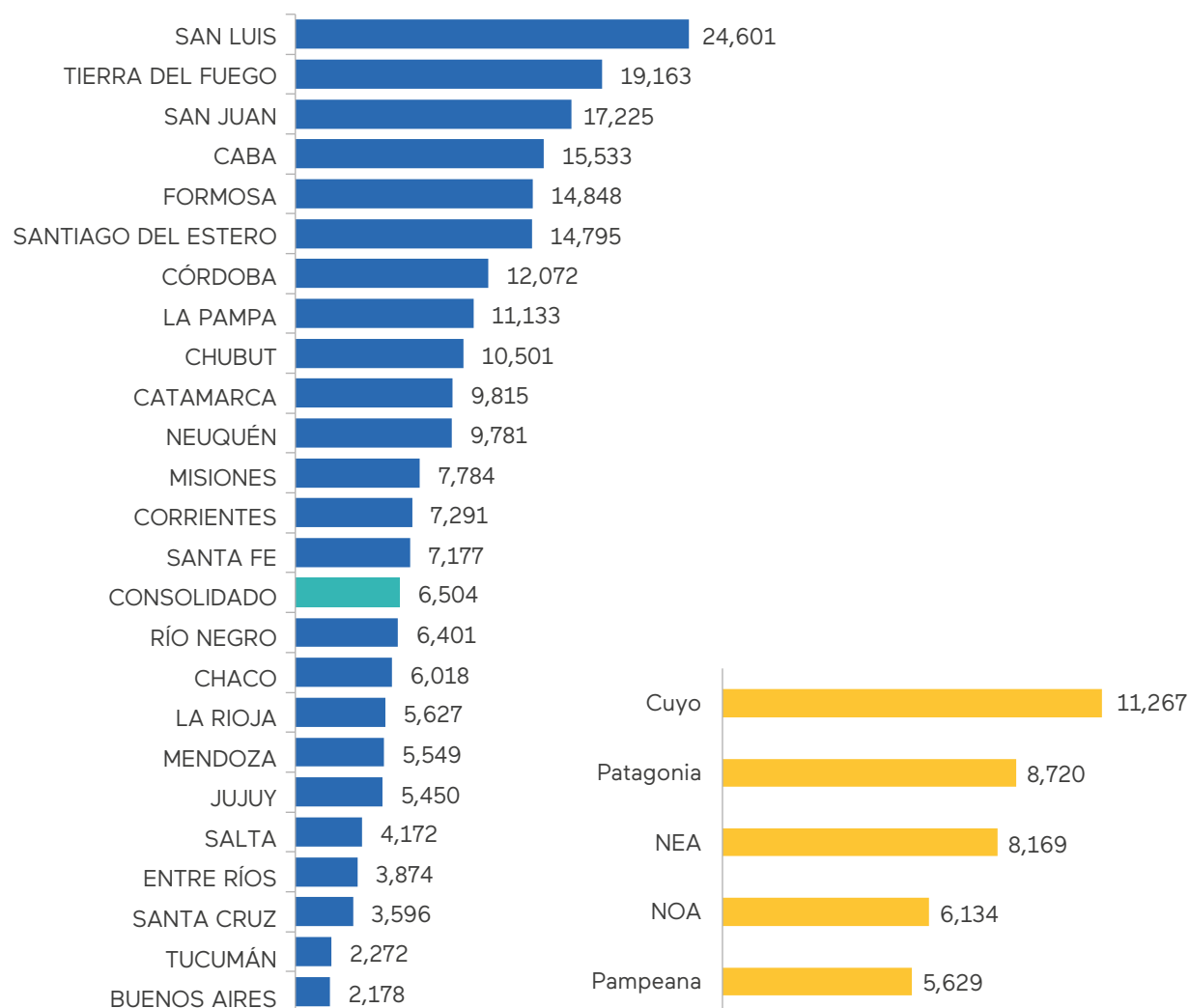


Source: IERAL Mediterranean Foundation with data from the Ministry of Economy (National Directorate for Coordination with the Provinces).

Furthermore, at the interprovincial level, wide differences are seen in executed PI. For example, with respect to RDI and capital transfers per capita in 2018, provinces such as San Luis executed PI of around of ARS 24,600 per inhabitant whereas, at the other extreme, the province of Buenos Aires recorded only around ARS 2,200 (Figure 11).



Figure 11. Real Direct Investment and Capital Transfers by Provinces and by Region of Argentina, 2018 (in current pesos per capita)



Source: IERAL Mediterranean Foundation with data from the Ministry of Economy (National Directorate for Coordination with the Provinces).

At the regional level, the differences are also significant and range from investment per capita of ARS 11,267 in Cuyo to ARS 5,629 in the Pampean region (Figure 11).





2.2.3 THE PROCYCLICALITY OF PUBLIC INVESTMENT SPENDING AND THE TREND TOWARD FISCAL DEFICIT IN PROVINCIAL GOVERNMENTS

In Argentina, PI is highly procyclical: when faced with falling revenues during an economic recession, governments—national, provincial, and municipal—tend to cut capital expenditure sharply, which implies lower subsequent political costs. Institutional and management problems, such as the absence of fiscal rules (or their inefficiency) or of countercyclical funds, aggravate this situation.

In the period 1993–2018, the contemporaneous correlation coefficient between the consolidated PI of the provinces and GDP is around 0.8, with a volatility 3.7 times higher than that of GDP. Such behavior is associated with the procyclicality also seen in the sources of funding for such investment (Table 13).

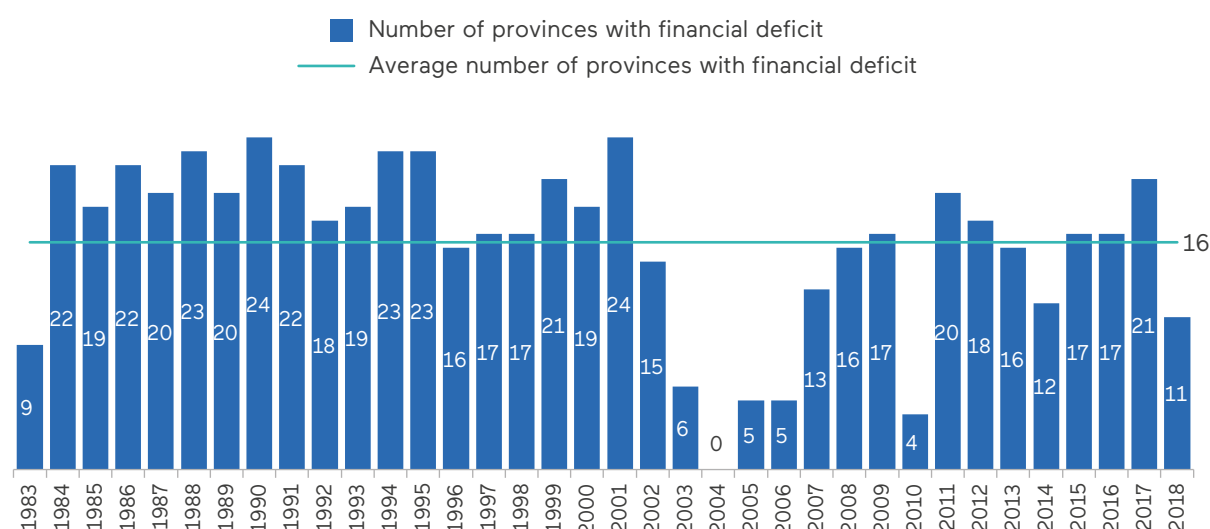
Table 13. Correlation between Public Investment and GDP in Argentine Provinces (correlation coefficients)

VARIABLES	X(T-4)	X(T-3)	X(T-2)	X(T-1)	X(T)	X(T+1)	X(T+2)	X(T+3)	X(T+4)
Capital expenditure (1993–2018)	0.0616	0.3407	0.6482	0.7094	0.7599	0.3146	-0.111	-0.388	-0.559
Capital expenditure (2004–18)	0.1030	0.1784	0.3705	0.4327	0.3426	0.2028	-0.018	-0.167	-0.198
Real direct investment (1993–2018)	0.0726	0.2806	0.5896	0.6805	0.7853	0.3528	-0.072	-0.378	-0.570
Transfers of capital (1993–2018)	0.2888	0.5085	0.7178	0.7156	0.5396	0.1075	-0.261	-0.457	-0.558
Real direct investment + transfers of capital (1993–2018)	0.1128	0.3297	0.6232	0.7045	0.7542	0.3133	-0.106	-0.394	-0.579

Source: IERAL Mediterranean Foundation with data from the Ministry of Economy (National Directorate for Coordination with the Provinces).

The volatility of PI in the Argentine provinces is also associated with volatility in the fiscal outcome observed in intermediate-level governments and with the downward trend in fiscal deficits. In the period 1983–2018, on average every year 16 provinces posted a fiscal deficit, with certain years in which all provinces were in this situation (1990, 2001), and only one year in which all achieved a surplus (2004, following the tax rebate of 2002). In 2018, there was a notable improvement in the fiscal situation of the Argentine provinces: more than half of the provinces posted a financial surplus (Figure 12).

Figure 12. Argentine Provinces with Financial Deficit (1983–2018)



Source: IERAL Mediterranean Foundation with data from the Ministry of Economy (National Directorate for Coordination with the Provinces)

2.3 FINANCIAL AND FISCAL RESPONSIBILITY REGULATIONS

At the federal level, the most significant laws with regard to public sector operations are: Financial Administration (Law No. 24,156) and the recently approved Fiscal Responsibility Regime (Ley de Responsabilidad Fiscal, or LRF) and Best Government Practices (Law No. 27,428).

This latter rule establishes some limitations on the SNG funding process. Specifically, provincial governments and CABA must strive to ensure that the ratio between debt servicing and current revenues (net of co-participation transfers to municipalities) does not exceed 15 percent in any fiscal exercise. If a jurisdiction goes beyond this limit, it cannot access new financing unless it is used to refinance existing debt (and this refinancing implies an improvement over existing conditions).

In the event that SNGs wish to seek financing from organizations outside of the non-financial public sector, they must send the relevant documentation to the national government, which has the power to authorize the operation according to macro-fiscal guidelines established for the period, but only insofar as the entity making the request complies with the principles of the LRF. Moreover, as long as the Federal Fiscal Responsibility Council does not report failure to comply with these principles, the SNG will be entitled to access funding operations with multilateral credit organizations and national programs.





Furthermore, Article 10 establishes that net primary current spending (national and provincial) cannot increase faster than the inflation rate foreseen in the macro-fiscal guidelines. This restriction extends to the totality of net primary spending in the event that the jurisdictions achieve a negative primary current spending result in the previous period (Art. 10 a). Nonetheless, not all capital expenditures may be affected, given that those financed by allocated resources and those earmarked for implementing national public policies are excluded.

2.4 INSTITUTIONAL AND REGULATORY FRAMEWORK OF PUBLIC INVESTMENT MANAGEMENT

With regard to the legal and institutional framework of PIM, the National Directorate of Public Investment (Dirección Nacional de Inversión Pública, or DNIP) is responsible for the National Public Investment System (Sistema Nacional de Inversiones Públicas, or SNIP). Its primary aim is to collaborate with the political authorities in choosing the best selection of projects to incorporate into the national budget.

The DNIP has been located at different times in various agencies. Initially, it was part of the Undersecretariat for Economic Coordination, under the auspices of the Secretariat for Political Economy of the Ministry of Economy and Production. In 2009, its functions were divided between the Ministry of Economy and Public Finances and the Ministry of Production (the DNIP gravitated toward the latter). Following the change of government, toward the end of 2015 it was relocated to the Secretariat for Budget Evaluation, Public Investment and Public-Private Partnerships, which falls under the Office of the Cabinet of Ministers, within the Presidency.

In practice, the normative change enables the Head of the Cabinet to manage the SNIP. The SNIP plays a key role in defining the infrastructure and investment projects that are incorporated each year into the budget. Following this regulatory modification, the Office of the Cabinet assumed responsibility for defining and monitoring all of the large-scale works carried out in the country. These include a wide array of projects, ranging from road building—for which National Roads is responsible—to building power plants, designing nuclear reactors, procuring capital goods, and assisting the provinces with public investments.

Among the DNIP's functions are: (i) participating in setting budget priorities; (ii) giving technical priority to the projects presented; (iii) consulting with the provinces about projects to be executed in their jurisdictions; and (iv) drafting the National Public Investment Plan (Plan Nacional de Inversiones Públicas, or PNIP), which is sent to the National Congress along with the draft budget legislation.



The PNIP, drafted annually, with a three-year projection period, comprises the total investment made by national public sector organizations and investment funding through transfers, both to provinces and in the private sector. Drafting the PNIP is a multidisciplinary activity that brings together national public sector organizations, the Office of the Cabinet, the Secretariat of the Treasury, the National Budget Office, and the provincial jurisdictions. The ultimate responsibility falls to the DNIP.

The SNIP consists of a set of principles, organizational arrangements, regulations, and procedures whose objective is the initiation and permanent updating of an inventory of national public investment projects and the annual formulation and management of the PNIP. These projects are incorporated into the Public Investment Project Bank (Banco de Proyectos de Inversión Pública, or BAPIN). Created via Decree 720/95, the BAPIN enables information for project monitoring and control to be recorded, as stipulated by Law No. 24,354 and its regulations. Incorporation of investment projects into the BAPIN is a necessary step prior to their inclusion in the PNIP and, consequently, in the national budget.

Starting in 2007, the government attempted to add a new dimension to cooperation between the national government and the provinces. The Territorial Strategic Plan (Plan Estratégico Territorial, or PET) seeks to improve organization of infrastructure, through a variety of actions, including: (i) increasing and rationalizing infrastructure provision; (ii) prioritizing the most backward and least dynamic areas; and (iii) stimulating management capacity in the subnational administrations. All jurisdictions participate. With the framework of the PET, the Strategic Project Prioritization and Planning System (Sistema de Ponderación y Planificación de Proyectos Estratégicos, or SIPPE) was created. The SIPPE is a platform for establishing the provinces' investment projects or needs. However, the PET/SIPPE has yet to be coordinated with the SNIP, given the limitations in the IT system, nor has it been linked to the budget system.

The most important advances in the relationship between national government and provinces took place at the level of the SIPPE, currently under the Ministry of the Interior. Projects demanded by the municipalities were incorporated (this previously only happened at the provincial level), the IT system was updated, project information was organized and standardized, and progress was made toward project management based on preparedness (idea, project, pre-feasibility, and feasibility).

Castillo (2017) suggests that the upcoming challenges are the following: (i) improving the “technological” features of the BAPIN; (ii) reviewing regulations and processes; (iii) improving the specific process of allocation and prioritization; (iv) coordinating compliance with the new financing scheme using public-private





partnership (PPP) contracts; (v) expanding interaction with the SIPPE; and (vi) building pre-investment capacities throughout the public sector. Implementation of these improvements got underway as part of the National Investments Plan 2019–21.

The basic components of the SNIP can therefore be divided into four elements:

- 1. Organizations that propose, evaluate, and execute public investment:** the Ministry of Transportation, the Ministry of Energy, and the Ministry of the Interior, Public Works and Housing are among the most important.
- 2. Coordinating organizations:** the DNIP, a cross-cutting agency responsible for coordinating the SNIP, and which is also host to the BAPIN. Likewise, the SIPPE functions under the auspices of the Ministry of the Interior, Public Works and Housing, which coordinates territorial planning for the different levels and sectors of government (both provincial and municipal).

To summarize, the Office of the Cabinet defines the priority sectors to receive allocations for public investments and finds funding for those projects. The initiatives are selected in coordination with other organizations. Thereafter, the Office of the Cabinet submits the proposed budgets and the guarantees to the Secretariat of the Treasury, for adjustment to the borrowing of each jurisdiction.

- 3. The agency responsible for seeking and managing international project funding:** the Directorate of External Finance, under the Ministry of the Treasury.
- 4. The agency responsible for the budget:** the National Budget Office, under the Budget Undersecretariat of the Secretariat of the Treasury, which formulates, programs, modifies, and evaluates national public sector budgets for the investment projects that comprise the national state budget. If the president so wishes, the Office of the Cabinet can set a maximum amount that enables an investment project to be approved directly by a ministry for direct inclusion in the SNIP. This amount must never exceed the ratio of one per thousand (1/1000) of the annual national public investment budget for the previous financial year.

Provincial Public Investment Systems (Sistemas Provinciales de Inversión Pública, or SPIPs), often have executive units that operate in a decentralized way: each ministry or agency takes charge of executing the investment for which it is responsible.



Project execution is usually undertaken by ministries analogous to public works, water, education, health, and others (whose names may vary in each province), or

Chapter 2

organizations that, although under the auspices of a ministry, tend to enjoy a degree of autonomy, such as organizations responsible for home or road construction.

The executive unit may also be centralized in ministries such as infrastructure, planning or public works—the name varies by province—or in secretariats that may or may not fall under these ministries. This is the case where one agency is responsible for evaluation, execution, and monitoring activities, whereas the organizations responsible for the work itself are the ones that detect the need for it. Some provinces may also have a unit or agency for coordinating international loans, which may or may not be ascribed to a ministry.

Moreover, although the BAPIN exists at the national level, there is no provincial requirement to submit the project to the national BAPIN to be included in the provincial budget, even though the province is attached to the system. As previously mentioned, there is also the SIPPE, which both provincial and municipal governments may join (no exhaustive use of this resource has been recorded at the provincial level).

The challenges, in relation to the provinces, include making the need to improve provincial PI management a political priority, improving the provinces' own pre-investment capacities, consolidating or creating an SPIP in each jurisdiction, integrating the municipalities into the provincial system, and deepening assistance and collaboration from the national level to the provinces.





2.5 INDEX OF DECENTRALIZED PUBLIC INVESTMENT MANAGEMENT IN THE ARGENTINE PROVINCES

The following section presents the results of the index of D-PIM efficiency by province, dimension, and sub-dimension. The index is also estimated by geographic region. Moreover, it compares the national management index proposed by Armendáriz and Contreras (2016) and the subnational index elaborated by IERAL for the Inter-American Development Bank.

This construction uses closed-ended questions in the survey questionnaire, scoring the responses on a scale from 0 (zero) to 4 (four), with 4 being maximum performance. The value or score obtained for each sub-dimension will emerge from the simple average of the scores allocated to all the corresponding questions, so that the structure of weighting remains uniform. The same criterion was used to give a value to the five dimensions.¹³

The questionnaire employed in the Argentine case was made up of 157 questions (by virtue of subnational characteristics and the available information, questions were incorporated into sections 5.7 and 5.8 of the questionnaire) divided into 20 sub-dimensions and 5 dimensions of analysis. It is important to point out that the final dimension proposed reveals aspects that cut across the different stages of the PI process, including operational and legal issues, human resources, access to information, monitoring the entire cycle, support systems, strategic guidelines, and, above all, aspects pertaining to levels of intra- and inter-government coordination, as well as those that refer to investment funding and managing the fiscal cycle.

Sub-dimensions 5.7 and 5.8 were included because of the importance, in a federal country, of studying cooperation between provinces and between levels of government to complete the PI cycle. Other aspects explored are the fiscal characteristics of provincial governments, the capacity to generate current saving, the existence or lack of fiscal rules that lead to greater PI, and the use (or otherwise) of PI for countercyclical purposes, among others factors of interest.

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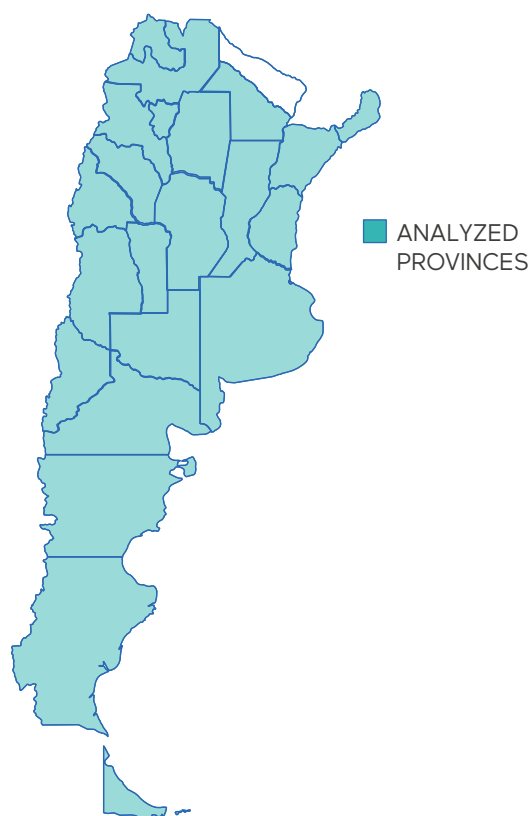
13 The decision to apply similar weighting to the different dimensions and sub-dimensions was taken after performing a robustness check. To test the robustness of the indices, the Spearman rank-order correlation was applied. In its general definition, the coefficient seeks to evaluate the existence (or otherwise) of a relationship of order in a ranking within the population represented in the sample. In this sense, obtaining high levels of direct linear correlation between the global index and the three simulations presented (0.87, 0.70, and 0.75, respectively) would indicate that the procedure used to construct the index yields robust results and that they are not significantly affected by modifying specifications, such as the weighting structure. These results are similar to those found in the study by Armendáriz et al. (2016).



2.5.1 GLOBAL INDEX OF ARGENTINE PROVINCES

Previous studies developed by the IDB demonstrate that countries with solid PIM institutions make more predictable, efficient, and results-based investments (Fretes Cibils and Armendáriz, 2017).

Map 1. Argentine Provinces Analyzed



Source: Authors' elaboration.

These institutions are responsible for ensuring that countries have pluriannual investment programming linked to strategic priorities, a solid system for managing project costs, and systematic learning based on ex post evaluation of completed projects. These are the necessary foundations for improving the quality and the efficiency of PI expenditure. However, how efficient is public investment management at the subnational level in Argentina?

To attempt to answer to this question, an index of PIM efficiency was estimated for the Argentine provinces, including the CABA but excluding the province of Formosa (Map 1). As explained in the previous chapter and in the methodological annex, the dimensions that comprise this index include (i) strategic guides and project evaluation; (ii) project selection;

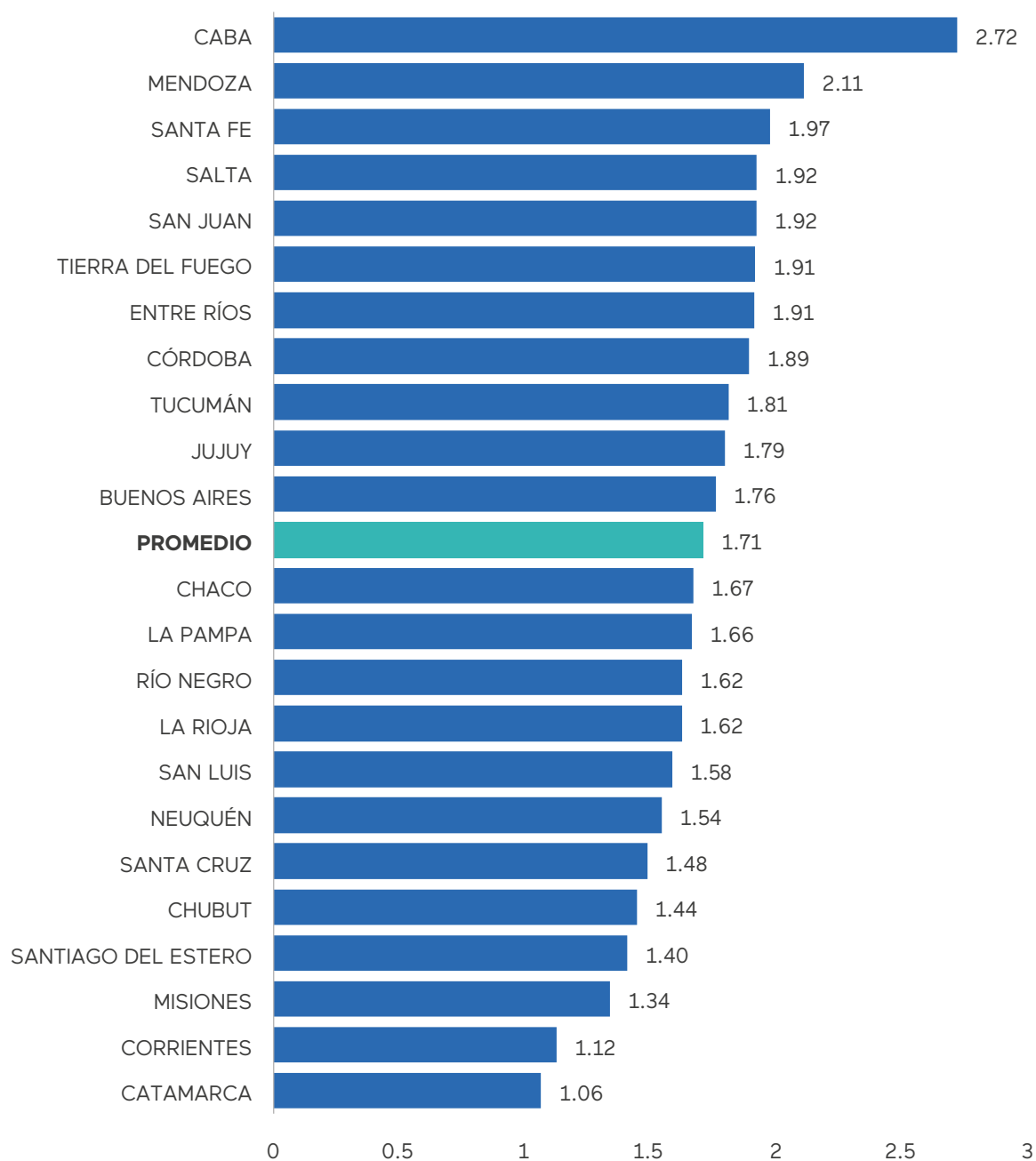
(iii) project implementation; (iv) ex post project evaluation, audits and asset management; and (v) general characterization and coordination of public investment.

The results of the study reveal that the general level of PI system efficiency in the Argentine provinces reaches an average value of 1.71 from a maximum of 4.0 points, although with much heterogeneity, ranging from 2.72 in CABA to 1.06 in the province of Catamarca. These results show that 12 out of the 23 jurisdictions surveyed recorded below-average levels of efficiency, 3 just slightly exceeded the average, and 8 exceeded it by a considerable margin. Of the latter, two have an efficiency index of around of 2.0 points (Mendoza and Santa Fe) and only one (CABA) exceeds the score of 2.50 (Figure 13).





Figure 13. Global Index of Public Investment Management Efficiency in the Argentine Provinces



Source: IERAL (2016).



2.5.2 INDEX BY DIMENSION AND SUB-DIMENSION

The analysis reveals that the dimensions of the index that posted the weakest performance at the general level were Dimension 4 (Ex post project evaluation, audits and asset management) and Dimension 1 (Strategic guides and project evaluation). This shows that the worst results are obtained at the end and at the beginning of the PI cycle (Table 14 and Figure 14).¹⁴

Table 14. Heat Map of Results According to Dimensions Included in the Index of Public Investment Management Efficiency (as a percentage)

	DIMENSIONS					INDEX OF D-PIM EFFICIENCY
	1	2	3	4	5	
	STRATEGIC GUIDES AND PROJECT EVALUATION	PROJECT SELECTION	PROJECT IMPLEMENTATION	EX POST PROJECT EVALUATION, AUDITS AND ASSET MANAGEMENT	GENERAL CHARACTERIZATION AND COORDINATION OF PUBLIC INVESTMENT	
BS. AS.	1.49	2.44	2.93	0.33	1.59	1.76
CABA	2.13	3.08	3.24	3.07	2.05	2.72
CATAMARCA	1.06	1.20	1.63	0.00	1.43	1.06
CHACO	1.98	2.25	2.26	0.00	1.85	1.67
CHUBUT	1.35	1.87	2.57	0.00	1.43	1.44
CÓRDOBA	1.57	2.04	3.43	0.67	1.73	1.89
CORRIENTES	0.70	1.15	2.34	0.33	1.10	1.12
ENTRE RÍOS	1.16	2.35	3.02	1.00	2.01	1.91
JUJUY	1.02	1.79	2.97	1.67	1.52	1.79
LA PAMPA	1.25	2.05	2.91	0.67	1.42	1.66
LA RIOJA	1.15	2.12	2.39	0.40	2.05	1.62
MENDOZA	1.14	2.54	3.14	2.30	1.41	2.11
MISIONES	1.23	1.33	1.67	1.00	1.44	1.34
NEUQUÉN	1.61	0.67	2.73	1.17	1.53	1.54
RÍO NEGRO	1.11	2.43	2.92	0.00	1.65	1.62
SALTA	1.74	2.33	2.60	1.17	1.75	1.92
SAN JUAN	1.51	2.59	2.87	0.83	1.79	1.92
SAN LUIS	1.00	1.08	3.17	0.67	2.00	1.58
SANTA CRUZ	1.20	0.70	2.05	1.61	1.86	1.48
SANTA FE	1.69	2.59	3.04	0.83	1.70	1.97
SGO. DEL E.	1.22	1.02	2.78	0.67	1.33	1.40
TIERRA DEL F.	2.26	2.03	2.26	0.83	2.19	1.91
TUCUMÁN	2.31	1.33	2.88	0.67	1.84	1.81
PROVINCIAL AVERAGE	1.43	1.87	2.69	0.86	1.68	1.71

Source: IERAL (2016).

14 These results coincide with the study of 16 LAC countries carried out by Armendáriz et al. (2016).



In this respect, Dimension 4 (Ex post project evaluation, audits and asset management) records the poorest performance, with an average index of 0.86, a maximum score of 3.07 in CABA, and a minimum score of 0.00 in Catamarca, Chaco, Chubut, and Río Negro. Dimension 1 (Strategic guides and project evaluation) also shows poor performance, with an average index of 1.43, a maximum value of 2.31 in the province of Tucumán, and a minimum of 0.70 in the province of Corrientes.

Figure 14. Index of D-PIM Efficiency in the Argentine Provinces, by Dimension



Source: IERAL (2016).

By contrast, the best scores obtained are in the third dimension (Project implementation), with an average performance of 2.69, and with values that range between 3.43 (Cordoba) and 1.63 (Catamarca). The remaining dimensions—Project selection and General characterization and coordination of public investment—obtain intermediate results compared to the above. Project selection records an average index score of 1.87, with variations ranging from 3.08 in CABA to 0.67 in Neuquén. This dimension registers a steady performance in the provinces, obtaining an average score of 1.68, with a maximum of 2.19 in Tierra del Fuego and a minimum of 1.10 in Corrientes.

Given the scope of the themes that the fifth dimension attempts to capture, it seems advisable to divide the analysis into sub-dimensions. Therefore, Sub-dimensions 5.2 (The role of legislation), 5.3 (Appropriate human resources) and 5.7 (Cooperation between national, provincial, and municipal governments) obtained the best ratings, ranging between 1.96 and 1.90. For their part, the sub-dimensions with the worst performance are 5.5 (Support systems), with a score of 1.05, and 5.6 (Strategic guidelines of the system), with a median score of 1.38. This shows the fundamental need to incorporate or improve the use of digital tools to facilitate PI processes.

Finally, by focusing on the sub-dimensions that are presented as an innovation in the index, Sub-dimension 5.7 (Cooperation between national, provincial, and municipal governments) posted a better score, with a provincial average of 1.90, a minimum of 1.22 in the province of Misiones, and a maximum of 2.28 in Entre Ríos, and with a high degree of inter-regional heterogeneity. Sub-dimension 5.8 (Investment funding, fiscal responsibility, and project cycle management policy) obtained an average provincial score of 1.68, and was thus among the three with the lowest score. Jujuy recorded the worst performance (0.92 points) and San Luis, the best (2.58 points). These contrasts (for more details, see Annex 2. Results of the decentralized public investment management index in Argentina show that practically all the provinces included in the study display shortcomings in at least one of the dimensions considered (except for CABA).

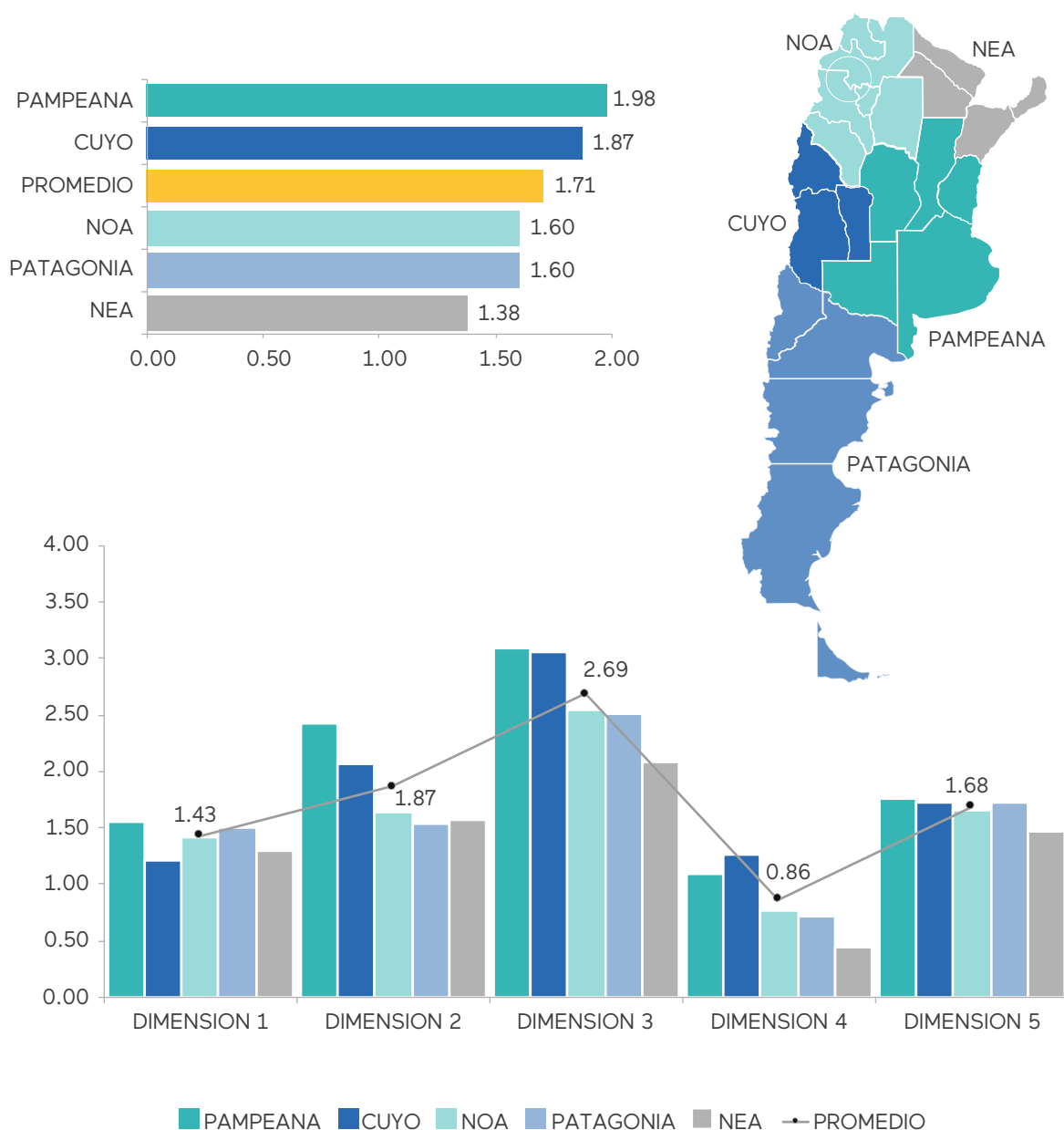
2.5.3 INDEX BY GEOGRAPHIC REGION

The Pampean region achieved the best performance in terms of PIM efficiency (1.98 points). The Cuyo region is next in the ranking, with a score of 1.87, also above the provincial average (1.71). It is followed by NOA and Patagonia, with a score of 1.60 in both cases, and finally, NEA, with a score of 1.38 (Figure 15).





Figure 15. Global Index According to Region of Argentina



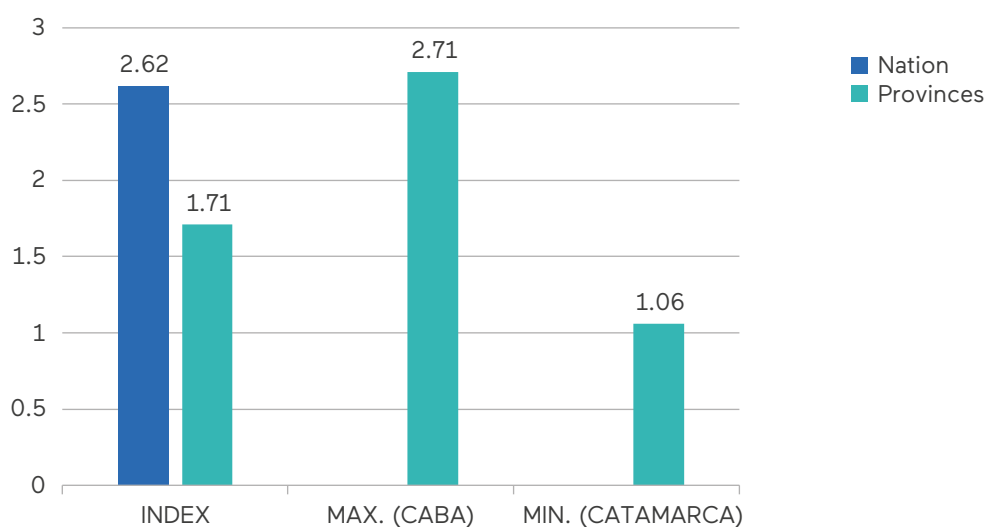
Source: IERAL (2016).

By dimensions, the Pampean region recorded the best performance in four of the five. In contrast, in Dimension 4 (Evaluation ex post), Cuyo is the leading region. The NEA region had the worst performance compared with the rest of the regions, with low scores in the three latter dimensions, whereas in the first two it occupies fourth place among the five regions. The Patagonian and the NOA regions showed similar results in their PIM performance levels, recording an equivalent global index (1.60). The scores they obtained in each dimension were also similar.

2.6 COMPARISON BETWEEN THE GLOBAL PUBLIC INVESTMENT MANAGEMENT INDEX PROPOSED BY IDB-IERAL AND THE ONE DEVELOPED BY ARMENDÁRIZ AND CONTRERAS

Comparing the index calculated at the national level by Armendáriz and Contreras (2016) with the one calculated for the provinces by IERAL-IDB, two aspects stand out that merit attention. First, the average value of the provincial index scores is lower than the national index constructed by Armendáriz and Contreras (2016) (1.71 compared to 2.62), which shows that PIM capacities at the provincial level are, on average, more limited than those encountered at the federal government level. Second, there was considerable variation between the Argentine provinces, especially in the case of CABA, whose score was higher than the national index. This indicates that the statement that the management capacities of subnational governments are inferior to those seen at the national level is not always true (Figure 16).

Figure 16. Indices of Public Investment Management Efficiency at the National and Provincial Levels in Argentina



Source: Authors' elaboration.





2.7 POLICY RECOMMENDATIONS FOR THE ARGENTINE PROVINCES

In general, the performance of the Argentine provinces in terms of D-PIM is unsatisfactory. In most cases, discretionality is the rule in allocating investment resources. There is a general lack of rules, regulations, and standardized allocation procedures; a low level of profitability of the projects executed; heterogeneous project selection criteria; incomplete documentation; a low level of accountability, incomplete auditing, and negligible project transparency and information disclosure.

Despite the fact that most of the provinces have ad hoc legislation in place to formalize their systems, this does not ensure PI efficiency in terms of socioeconomic profitability. Likewise, there are persistent concerns about the use of public resources for investment and about the effects of political discretionality on their performance.

Despite the accompaniment of multilateral credit organizations, which often requires a special framework and procedures for their projects from provincial governments, some aspects that have hampered the achievement of a solid body of PI programming and execution in the Argentine provinces have to do with the following: (i) there is high turnover among the actors responsible for managing operations; (ii) project formulation and evaluation capacities and skills focus only on certain projects and fail to percolate to all institutions and technical teams; (iii) the effort has been neither sustained nor persistent over time, nor has it permitted formal provincial coordination actions to be developed with sectors that depend on the central level, although some decentralization of certain investment decisions has been permitted, and (iv) there are no detailed regulations and operational guides that support the creation and development of new sector-based data analysis and impact evaluation capacities.

Thus, in accordance with the design of the PIM index, policy recommendations can be divided into the five dimensions that comprise the index. Although the dimensions are evaluated separately, progress in one stage improves the dynamic of the entire investment process, establishing the basis for the subsequent stages.

2.7.1 DIMENSION 1: STRATEGIC GUIDES AND PROJECT EVALUATION

In this dimension, the average performance of the Argentine provinces was unsatisfactory (1.43/4). In general, PI planning is not aligned with strategic objectives, or with economic, social, and environmental priorities. Likewise, there is no formal project preparation process, which makes it difficult to discard low-quality proposals and thereby avoid wasting budget resources.



Formalization by the national government of the **strategic planning** process to boost provincial development or growth is a good basis for improving performance in this dimension. This implies developing procedures, regulations, rules, and instructions for regulating strategic planning processes and PIM integration without invoking excessively rigid rules and regulations.

First, the development of **methodological manuals or guides** for project preparation and evaluation is recommended, using social profitability indicators such as current net value (CNV) or the internal rate of return (IRR). Among others, the SNIP in Argentina recommends the use of product input matrix methods that, although measuring aggregate project effects on gross national product, fail to measure how efficiently resources are allocated in terms of their social profitability at the project level.

Furthermore, establishing **specialized strategic planning units** in each province, if none previously exist, is a move in the right direction, as these can take charge of the process of assessing needs and project ideas to build a portfolio of PI initiatives. The functions of these units, which preferably should not be the same ones in charge of project execution, include: (i) carrying out technical and economic analysis of PI initiatives; (ii) supervising pre-investment studies, (iii) recommending definitive approval, redesign, or rejection of initiatives (acting as a “seal of quality”); (iv) developing project preparation and evaluation methodologies and standards; (v) monitoring and guiding compliance with PI standards, policies, and procedures through audits; (vi) establishing inter-project integration and cooperation mechanisms, and (vii) managing the project repository, either a database or the Integrated Project Bank.

Ex ante evaluations, in addition to being independent, should include socioeconomic and long-term aspects, characteristics that are not often considered in many Argentine provinces. Methodologies and templates (analytical tools) should be developed for socioeconomic project formulation and evaluation, with a view to harmonizing the analytical instruments. Likewise, the development and implementation of sector-based methodologies should be initiated with at least with two generic documents: Project Preparation and Evaluation for Productive Infrastructure Projects and Project Preparation and Evaluation for Social Infrastructure Projects.

In the planning and evaluation area, environmental aspects should be considered in all cases. These include the consequences of climate change for infrastructure needs and designing a methodology that incorporates the risk of environmental catastrophe as a variable. Likewise, aspects such as citizen participation or even gender perspectives should also be included as part of the analysis.





With respect to selecting PI projects, a solid foundation is required. In this way, the more mature and internalized the development strategies in each province, the easier it will be to guide the prioritization mechanisms to align them with those objectives. Similarly, any improvement in ex ante information significantly reduces the risks associated with project implementation, and the discretionary components will have less influence on the prioritization systems.

2.7.2 DIMENSION 2: PROJECT SELECTION

With regard to **project selection**, the provinces' performance in general is less than acceptable (1.87/4). The failure often lies in not establishing explicit prioritization criteria to reflect both provincial and sector priorities. This means that the budget process is not sufficiently integrated for joint planning of capital spending and current disbursements. The role of decision makers in this context acquires significance, making it essential that they have the relevant technical knowledge to estimate the costs and benefits (private and social) implied by each project.

The importance of strengthening this dimension lies in the impact of the prioritization criteria on territorial and sector-based PI allocation (OECD, 2014). If the province has a strategic development plan and selection is discretionary, the resources allocated to the first stage of the PI cycle will have been unjustified. There is a close link between these dimensions and the feedback between them.

As a future policy, the process of project selection and budget integration must be strengthened, specifically through a database or the Integrated Project Bank, which should be common to both the national and the subnational level. It is important to remember that the Integrated Project Bank must record all stages of the projects, since not only is it associated with Dimension 2, but it also records the results of Dimension 1, in particular the ex ante evaluation, as well as whatever is happening with the project in Dimensions 3 and 4.

Further actions should also be considered, such as: (i) process analysis and re-engineering (mapping); (ii) development of software components; (iii) development of the data gathering module; (iv) integration with fiscal accounting; and (v) the budget process. The database program must be fully integrated with the current budget system. Before the selection process begins, projects must undergo technical scrutiny to avoid conducting subsequent technical-economic studies that delay the execution process and interrupt the stages of the political cycle.



2.7.3 DIMENSION 3: PROJECT IMPLEMENTATION

Project implementation is the dimension that records the best scores in this study (2.69/4). This does not mean that the performance of the Argentine provinces is satisfactory in all cases and aspects, since there are many points with room for improvement. In this respect, in some provinces there are no efficient project management mechanisms to ensure that investment projects are delivered on time, within budget, and fulfilling the original specifications. Furthermore, most of the provinces (more than 80 percent) carry out internal controls and audits. Nonetheless, this does not correspond with the proportion of jurisdictions that use this information to take corrective actions.

Even without changing the current legislation, actions can be undertaken to increase **transparency and efficiency** in procurement processes, such as adapting the public procurement system to bring it into line with procurement policies of the multilateral credit organizations (IDB, World Bank, CAF) and training professionals in this area, particularly in the use of collaborative procurement mechanisms and e-commerce tools.

In this context, implementing or improving **monitoring and evaluation** (M&E) systems is likewise recommended. The aim of introducing an M&E system is to provide policymakers with the tools needed to monitor the critical variables of projects, schemes, and programs. M&E systems should therefore include at least the following three critical areas of project implementation: (i) project completion times, (ii) cost, and (iii) performance. Likewise, everything should be duly recorded in the project banks.

2.7.4 DIMENSION 4: EX POST PROJECT EVALUATION, AUDITS, AND ASSET MANAGEMENT

In terms of **ex post project evaluation, audits, and asset management**, PIM performance in the Argentine provinces is wholly deficient, as this is the dimension with the lowest score (0.86/4). This stage is essential for closing the PIM cycle, enabling performance during the process to be analyzed and measuring deviations from the planned project.

At the SNGI level, however, systematic project reviews are never carried out after they are finalized, nor is a final report ever prepared to prove they were completed on time, within budget, and to the specifications of the original design. To be useful, this final report should be more than a process of certification. In addition to identifying deviations, it must analyze the reasons for the divergences





and suggest corrections and plans of action that are applicable to future projects, as well as including the results of surveys of service quality. Evaluations should normally be carried out years after project completion and with sufficient time to enable the impacts to be evaluated and attributable to the project, an action that is rarely seen in the majority of the provinces.

A possible action to help move toward better performance in this dimension is to develop **formal mechanisms of ex post project evaluation**, at least with respect to the short term (upon completion of the project). For this purpose, general methodologies and specific guides should be elaborated for ex post evaluation of the short term (physical and budgetary execution), the medium term (results), and the long term (impacts), considering a less rigorous evaluation for small projects and a more rigorous evaluation for the larger or riskier projects.

To this end, the implementation of ex post **monitoring and evaluation systems** is recommended, with a view to examining both the physical achievements (products) and the impact on stakeholders (results) of a project or program after its completion.

In the initial stage of improvement of PIM practices, as in the case of Argentina, the evaluation should begin with the physical performance of the project in terms of results (costs, time, performance of the contractor and general management) and subsequently the impact analysis in terms of achieving economic and social objectives (outcomes for the target group of beneficiaries).

Furthermore, in **short-term** evaluations, subnational technical teams can lead the process, with information provided by the executive and financial unit. Deviations that the projects are experiencing at their particular stage of execution with respect to the plan should be identified, as well as the causes of such differences. Relevant issues should be reported and concluded in the regulations and procedures set out by the SNIP.

With regard to **medium-term** evaluations, the fundamental difference compared to ex post evaluation of the short term is that project operation is also incorporated. Provincial public investment systems must therefore verify how the project is operating, whether demand was as expected, whether benefits and costs were as estimated, whether the execution management model was as conceived, and whether the project is operating as foreseen. This evaluation can help to provide feedback and update the methodologies, parameters, and assumptions of the technical-economic analysis (ex ante evaluation).



With respect to ex post evaluation of the **long term**, the evidence is inconclusive about the advisability of using resources for this line of evaluation, both in methodological terms and in terms of opportunity costs.

It is also a good idea to ascertain the **citizen perspective** during ex post evaluation. An additional criterion is added to the feedback on the cycle of investments: determining a measure of citizen well-being that can help to build and improve knowledge of the project's social impact. Digital platforms offer the most systematic and effective format, since they provide tools for commenting on specific policies in real time.

Finally, it is important to highlight two significant aspects of this dimension: (i) technical and financial auditing of the projects, which is generally not carried out systematically in all the investment projects; and (ii) arrangements that are formulated for asset management, such as the maintenance or allocation of budget resources for operation once the project has been completed. Serious shortcomings are also observed in both these sub-dimensions in the Argentine provinces.

2.7.5 DIMENSION 5: GENERAL CHARACTERIZATION AND COORDINATION OF PUBLIC INVESTMENT

Finally, Dimension 5, which relates to **the general characterization and coordination of PI**, achieved a rating of 1.68/4. A detailed and exhaustive description of operational aspects is not often found at the subnational level; nonetheless, the legal attributes of PIM are better explained. In this area, the existence of a provincial public investment system is important as a holistic organization for coordinating the different areas and also to take charge of the relationship with the national system. The above poses a problem that requires a solution in the case of many Argentine provinces.

A **training program** should be organized at the national level that addresses the different needs of the national, provincial, and municipal PI systems. Both the internal teams and the policymaking institutions should receive training, but this requires a permanent effort. It is important to create a critical mass of professionals who are trained in PIM, bearing in mind the high turnover rate of professionals, especially in SNGs.

The first problem with the system of transfers, especially when it comes to co-participation is that, as Capello and Iglesias (2019) demonstrate, automatic unconditional transfers have a considerable bearing on public employment levels in the Argentine provinces. Since co-participation in national taxes is a significant





component of provincial revenues, an excess of public employment restricts the possibilities of achieving appropriate levels of current saving that can be used to fund capital expenditures.

To encourage higher levels of PI in the provinces, a redesign of the **fiscal transfer system** is required. The weight of transfers earmarked for PI should be increased, with a higher proportion of matching grants (currently underused) based on automatic transfers defined with criteria of leveling and closing the infrastructure gap over time.

Given the strong heterogeneity seen in terms of PIM procedure manuals, laws, and execution guidelines, some harmonization would seem to be necessary. To this end, central level coordination is essential. It could be achieved through the centralized production of **guides and procedures** (either by the central government or the organizations that group together the provinces, such as the Federal Investment Council).

Furthermore, the different levels of government of Argentina have at least two channels of interconnection for PIM coordination purposes: the SNIP and the SIPPE. However, these platforms are not linked to each other. Efforts made in this direction would be extremely useful.

The incorporation of building information modeling (BIM) technologies, which enable digital construction to take place in a collaborative way, in virtual space and in real time, is recommended. This software involves modeling of architecture, structure, and installations as well as sustainability analysis, scheduling, cost control, and operations management. Furthermore, it has enormous potential for introducing innovation into the construction sector, in the form of big data and predictive analysis, augmented and virtual reality, advanced building materials, wireless monitoring, and connected equipment, among others.

Applying this technology can generate benefits in terms of savings, efficiency, and transparency. Incorporating BIM technologies into subnational PIM is a challenge for the public sector, the private sector, and academia that requires significant capacity for cross-cutting coordination and interoperability between all provincial departments. Moreover, it would enable improvements in local competitiveness and a clear long-term vision for public works management.

Moreover, by following the recommendations of the Organisation for Economic Co-operation and Development (OECD, 2014), co-financing arrangements with other provincial governments could be incorporated. The proposal would encourage



horizontal coordination, which would lead to a loosening of fiscal restrictions. At the same time, the possibility of sharing the risks of investment projects with other jurisdictions could also be beneficial, as well as exploiting economies of scale and the spillover effects of PI.

State-regional planning contracts are one way of contributing to **vertical coordination**. These instruments are created through a voluntary agreement between levels of government. Their main objectives include achieving coordination and coherence in defining the strategic priorities of the different levels of government, formulating those priorities in a joint development vision, and executing investment projects in the agreed manner.

Another point with a low score in Dimension 5 of the index has to do with financing investments and the relationship between investment and the economic cycle. Argentina's three levels of government have been incapable of developing a sustainable fiscal policy, or a countercyclical fiscal policy, or at least one that is not excessively procyclical. With respect to **sustainability**, past rules of fiscal responsibility have usually been ignored, although there is now a new scheme that should bring improvements in certain aspects, such as: (i) fiscal rules with fewer possibilities of escape clauses (to encourage current saving and prevent unsustainable borrowing); (ii) higher effective penalties for jurisdictions that fail to comply with the fiscal rules; (iii) prohibition of grace periods in loans to governments and so-called bullet bonds (in which the entire principal value is paid all at once on the maturity date); and (iv) a more robust definition of borrowing capacity when authorizing further borrowing.

With respect to the need to ensure a **countercyclical or acyclical fiscal policy**, in a federal country in which subnational levels of government execute more than half of capital expenditure, fiscal policies and rules such as the following will be necessary: (i) create countercyclical funds, prior to the distribution of federal tax co-participation between the national government and the provinces; (ii) distribute co-participation resources between national government and provinces to create such funds, based on the moving average of tax revenue over the last 24 or 36 months, to smooth out the transfers; (iii) establish individual accounts in the national government and the provinces where the resources of the countercyclical fund will be accumulated, with the legal guarantee that only they can use these resources, in the present or the future; (iv) use the resources of the countercyclical fund automatically when tax revenues begin to fall due to the effect of a recession, according to the distribution by moving averages; (v) regulate the additional resources of the countercyclical fund, when the recession is very severe, to execute additional public investments; and (vi) establish an integrated bank of investment projects between the national





government and the provinces, with the aim of ensuring the effectiveness of the countercyclical policy and, at all times, the existence of projects already evaluated and classified as ready for execution, to rapidly implement such investments as soon as a new recessive economic cycle is detected.

2.8 CONCLUSIONS

The concept of a system of PI presupposes the existence of national and sector-based directives and policies in matters of investment. Nonetheless, the efforts made in Argentina have failed to achieve the full institutional transformation required for the operation of an integrated and comprehensive PI system. More effort is required to ensure that PI plans enjoy an adequate management framework that enables them to set sector investment priorities and direct resource allocation based on the criteria of efficiency and equity.

According to the results obtained in this study, there are noticeably different levels of efficiency in subnational PI systems. In addition to the problems of general coordination between levels of government and the characteristics of the provincial governments' fiscal policies (such as a marked procyclicality), the biggest problems faced by the provinces in the investment cycle are mainly concentrated in Dimensions 1 and 4, that is, at the outset of the process and at the end of the cycle, when the respective ex ante and ex post evaluations should be carried out.

In general, the experience of the Argentine provinces in terms of D-PIM is far from satisfactory. In the majority of cases, discretionality is the rule when allocating investment resources. On top of this are the lack of standardized rules, regulations, and procedures for resource allocation, a low level of appropriation of profits from completed projects, heterogeneous project selection criteria, incomplete process documentation, low accountability, substandard auditing, and inadequate transparency and integrated information. A vicious circle is thereby created around PIM efficiency.

Furthermore, despite the fact that most provinces have enacted ad hoc legislation to formalize the systems, this fails to ensure PI efficiency in terms of socioeconomic profitability. At the same time, worries persist about the use of public resources in investment matters and the effects of political discretionality on investment performance.

Consequently, the challenge remains of achieving more efficient PIM. This depends on many factors (of both context and process), such as the quality of the institutions, the quality of the human capital involved in the process, and, especially, good cooperation between different institutions and levels of government.



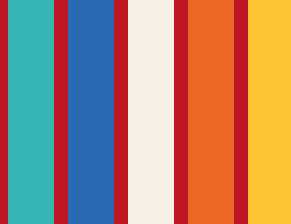
Therefore, in order for subnational PI to become a motor of economic growth—through enhanced public resource allocation and management—strategic guidance must be introduced for medium-term projects. Coordination with other levels of government should be included, while possible synergies with investments by private agents should also be explored, thus achieving an integrated vision of territorial development.

Likewise, intermediate government PIM capacity must be strengthened to guarantee balanced regional development. The SPIP information system should be modernized to improve subnational management. This involves redesigning and standardizing information, for example, through project banks integrated with other management systems at the national level, such as budget, procurement, and contracting.

Similarly, it is essential to promote ex post project evaluation at the subnational government level, to produce a comprehensive evaluation that includes the entire project life cycle and identify the outcomes and the best practices, enabling the information to be exploited for the continuous improvement of ex ante project evaluation. This would help develop strategic regional and local project portfolios aimed at narrowing the gaps in basic infrastructure and improving territorial competitiveness.

In terms of countercyclical policy, subnational governments should take the lead role, especially with respect to PI execution. This requires more coordination with national fiscal policy and a responsive and updated project bank that permits a rapid reaction with regard to project execution whenever the evolution of the macroeconomic situation requires it. The creation of countercyclical funds at the national and provincial levels is also key, taking into consideration the restrictions imposed in this area by a federal government regime.





Chapter 3

Public Investment Management Efficiency in the Mexican States

GABRIEL FARFÁN MARES

3.1 INTRODUCTION¹⁵

This chapter is divided into two parts. The first begins with a brief reflection on the conceptual and contextual components that form the basis of a common analytical framework throughout this paper. There is a brief review of the link between management and public finances and economic growth and development, especially at the subnational level. Then, the findings of the literature regarding the relationship between management, government efficiency, and the effect of public investment (PI) are presented, with particular emphasis on Mexico.

The trajectory and composition of public investments by Mexico's subnational governments (SNGs) are analyzed from a historical series using different indicators. The purpose is to build a regional vision of the investments before extending it, from the country perspective, to the results of public goods and services satisfaction and quality surveys.

Specifically, size maps are constructed for revenues and expenditures of the 32 Mexican SNGs, from an individual perspective. Finally, the main elements and milestones that comprise the applicable legal constitutional framework are described, followed by a synthesis of findings from the regulatory, administrative, organizational, and functional variables. These inputs help to establish the form and the capacities of the administrative structures responsible for public investment in each SNG.

The second part presents the results of the public investment management (PIM) index for Mexican SNGs, broken down according to the following results:

- Global results of the State PIM index in Mexico.
- Average results of the PIM index, broken down by dimension and SNG of Mexico.
- Results for each Mexican SNG by sub-dimension, according to the index of the Mexican State PIM index.
- Results by region (global index by regions and regional index by dimensions).

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¹⁵ This chapter synthesizes the results of a study made by Integralia Consultores for the Inter-American Development Bank under the project *Cuánto y cuán eficiente es la gestión de la inversión pública subnacional*. The review was carried out jointly by Huáscar Eguino, in his role as IDB project coordinator; Alejandro Rasteletti, formerly Lead Specialist for the IDB in Mexico, and the consultants Juan Carlos Aguilar, Hugo Menéndez, and Marcelo Martínez. The author would like to thank Sebastián Garrido and Juan Javier Santos, from the National Public Policy Laboratory in Mexico City.





- Results of the comparison of the D-PIM index estimated in this study with the national values calculated by the Armendáriz and Contreras (2016) index.

Finally, general conclusions and policy recommendations are presented.

3.2 CONCEPTUAL AND ANALYTICAL FRAMEWORK OF PUBLIC INVESTMENT IN THE SUBNATIONAL GOVERNMENTS OF MEXICO

The role of public investments in economic performance in a decentralized context has been analyzed in the pioneering work by Oates (1993; 1999). Oates argues that the efficiency or inefficiency of fiscal competence, systems of equalization, or intergovernmental fiscal relationships determines the relationship between decentralization and economic performance. However, based on an exhaustive analysis of the literature that followed these studies, it is still impossible to state with certainty what type of impact (positive or negative, relevant or marginal) subnational PI has on economic performance. Moreover, there is no consensus about the causal mechanisms or the chains of transmission between decentralization and economic performance (Feld, Baskaran, and Schnellenbach, 2016).

As Feld, Baskaran, and Schnellenbach (2016) indicate, the literature on decentralization and economic performance is still in its early stages, and the cases in which a positive or negative effect between both is identified depends to a large degree on the nature of the assumptions used to develop the analysis. For the authors, the most appropriate transmission mechanism for determining the effect of decentralization on economic performance has yet to be ascertained. Nonetheless, what can be confidently stated is that the types of studies that focus on countries with a lower level of development—those based on case studies and that examine the institutions that govern fiscal federalism—are more likely to explain the type and the scale of the relationship between federalism and the economy (Feld, Baskaran, and Schnellenbach, 2016: 48).

Although significant knowledge has been accumulated about the relationship between decentralization and economic performance and, seemingly, a consensus has been built around the link between the two, not all the findings associate them in a positive or even a determinative way.¹⁶ A review of the literature, especially



16 See Feld et al. (2016), which includes an exhaustive review of the literature that addresses the link between both national and subnational PI (or fiscal decentralization) and economic growth and GDP per capita. It also includes a systematization of the studies carried out, the country or countries, the period, the method, and the main findings.

that which addresses the effect of public investments, uncovers studies with two types of emphasis:

- Those of the *input* type, which focus on amounts, funding stability, and sustainability; in sum, the certainty that there will be an appropriate amount of financial resources available, as well as sufficient institutional resources (financial, human, material, technological, etc.) and an efficient, effective and productivity-based cycle of management and of administration.
- Those of the *output* type, such as ex post controls, monitoring and evaluation, as well as the improvement and maintenance of the investments—such as in the public works sector—and monitoring of results-based indicators, in terms of both economic and social profitability.

Generally, the positive impact of PI can be assumed to derive from factors of both the input and the output type. For example, the nature and amount of PI financing influences the final impact, whereas appropriate allocation and application of resources affect both the strictly economic and financial results and social outcomes. Nonetheless, the accumulated knowledge regarding the impact of PI on economic performance has rarely centered its analysis on factors of transition or process. In addition to input and output factors, those associated with the process by which public investments are executed—in other words, by whom, when, how, what, and where—play a crucial role. Therefore, administrative and PIM components are central for efficiency. Of course, this is a necessary but not sufficient condition to enable a country to boast PI that impacts positively on the levels of well-being.

With respect to Mexico, one study stands out that analyzes the link between public borrowing, PI, and economic growth, based on the application of different econometric methods and a long series of data (1993–2002) for the 32 state governments, which finds a positive relationship between PI and economic growth (Sánchez-Juárez and García Almada, 2016). The authors reveal evidence of a clear relationship between borrowing levels and PI, and between PI and economic growth. Nonetheless, they caution that the latter link can only be confirmed if the levels of borrowing correspond to the levels of PI, insofar as the debt may be being used to cover current expenditures.

Finally, another study of Mexico shows that the effects of PI on subnational economic growth are positive and statistically significant (Sánchez-Juárez and Srithongrung, 2015). The authors demonstrate that taxes impact negatively on state gross domestic product (GDP), whereas PI is positive. The effect of taxes ranges between -1.03 and -0.91, while the impact of PI is positive, as total GDP rises by





5.27 percent for each additional percentage point of PI. The scale of the impact of PI is greatest when the context engenders a virtuous chain. In other words, a deficit in the public capital stock, which cannot be satisfied by private sector participation, has a positive multiplier effect.

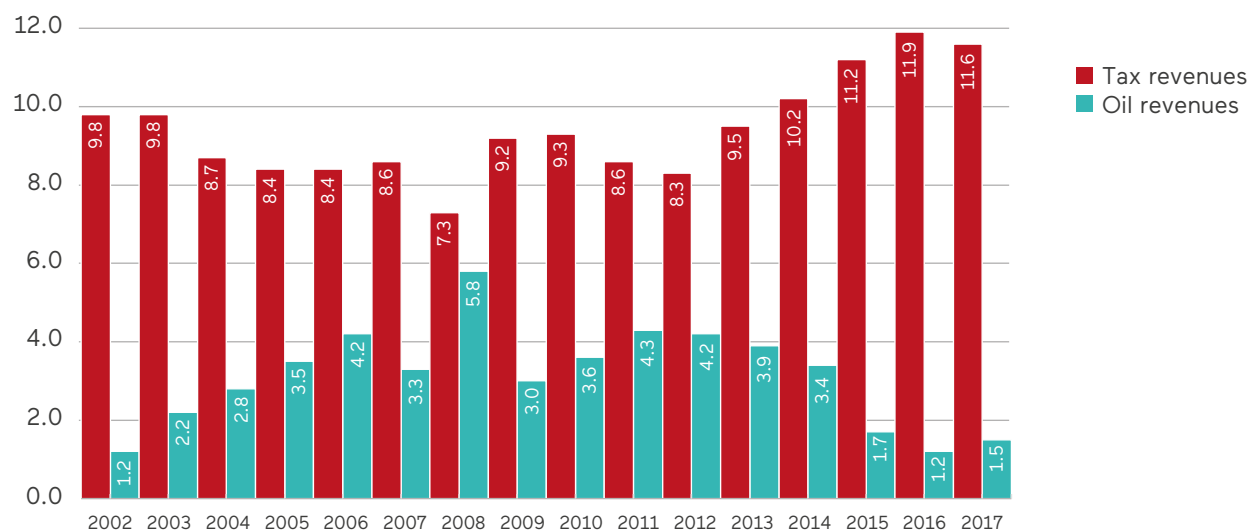
What are the conditions for the possibility of intermediate success—of the input type—of PI allocation? Identifying the crucial aspects that link public investments positively with economic performance has to do with institutional capacities, especially the degree of management efficiency of the actors involved. An integrated study by the International Monetary Fund (Ke-young, Clements, Hewitt, Lugaresi, Schiff, Schuknecht, and Gerd, 1995) states that for public investments to have a positive impact, particularly based on management, it is important that investment program and project productivity is enhanced by efficiency. This can only derive from an analysis that considers all the variables involved, identified and evaluated in accordance with the evidence and backed by statistics. The purpose of this paper is to propose an index that can measure the efficiency of decentralized public investment management (D-PIM) in Mexico to identify potential PI productivity.

3.3 THE TRAJECTORY AND COMPOSITION OF PUBLIC INVESTMENTS BY THE SUBNATIONAL GOVERNMENTS OF MEXICO

Transfers from the federal government of Mexico to SNGs have grown constantly, at least since 2002. The resources provided from federal government “participatory” revenues, or transferred to the SNGs, have increased considerably not only in the tax revenue dimension, but also in the oil revenue component, which represented nearly 6 percent of GDP in 2008 (Figure 17).



Figure 17. Transfers to State Governments, 2002–17
(federal participatory revenue, percentage of GDP)



Source: Authors' elaboration with data from the Secretariat for the Treasury and Public Credit (SHCP, undated).

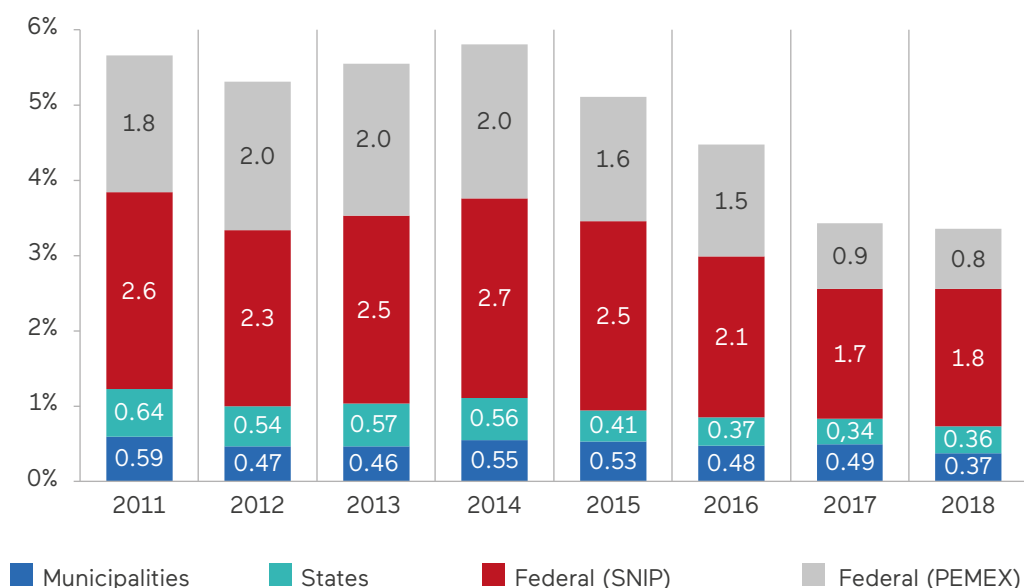
Although the behavior of subnational PI varies significantly and is not correlated with the size of the transfers, as will be seen below, PI has experienced a generalized slowdown. A cursory review of the evidence might lead one to suppose that the borrowing commitments derived from the 2008–09 crisis reduced the fiscal space due to the corresponding financial costs and amortizations, and that due to the residual growth of current expenditures and the recent fall in the oil revenue component, the current expenditures component intensified or grew more than proportionally, in a similar way to borrowing. These two factors relating to the composition of expenditure, alongside the two external shocks, might be behind the shrinking fiscal space for subnational PI seen in Mexico.

Figure 18 presents the trajectory of PI promoted by the federal government through the National Public investment System (SNIP) for states and municipalities and the investments that these make by themselves. It is notable that states and municipalities have reduced their share with regard to GDP and that SNIP resources have also decreased significantly. In the period 2015–18, PI by the municipalities surpassed that of the states, as a result of a fiscal adjustment made at the federal level by the fall in prices and, therefore, in public oil revenues, which implies that the municipalities wished or attempted to fill the void in federal PI.





**Figure 18. Public Investment by States and Municipalities by Origin
(percentage of GDP)**



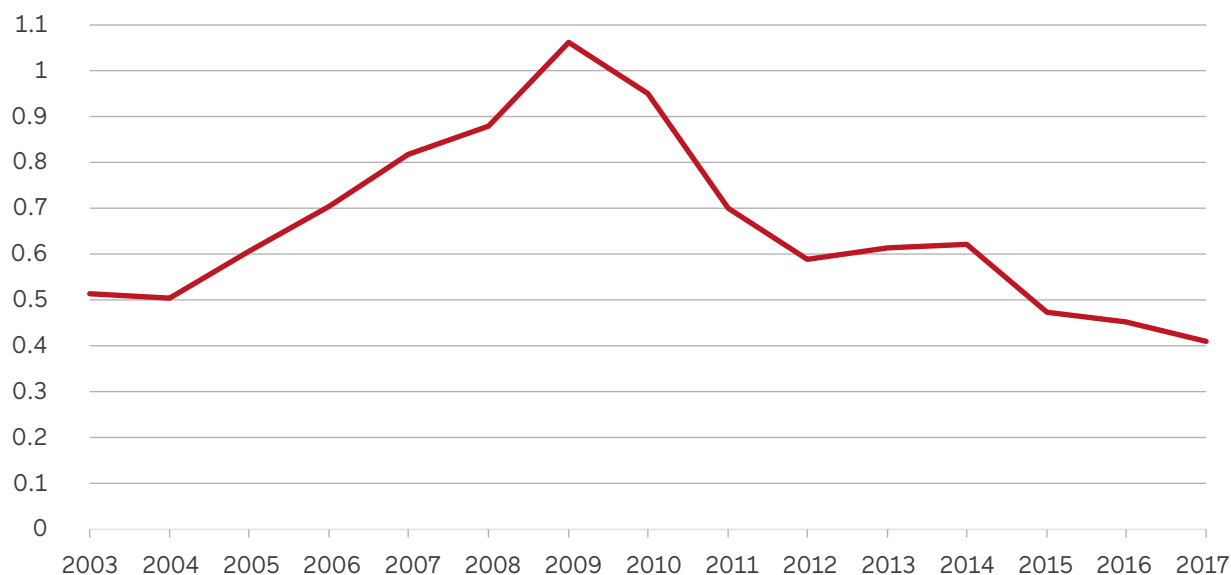
Source: Authors' elaboration with data from the National Institute of Statistics, Geography and Information Technology (Instituto Nacional de Estadística, Geografía e Informática, or INEGI) (INEGI, 2018) and the Secretariat of the Treasury and Public Credit (SHCP, undated).

PI is subject to sharp internal or local cycles, both political and budgetary, and in general is a variable that depends on external factors such as the dynamism of economic activity and expected revenues, as well as endogenous factors. Similarly, there is a noticeable trend toward geographic concentration of PI, strongly related with demand or the population size of each state.

The crisis of 2009 had a significant effect on PI among all of Mexico's SNGs, which altered its upward trajectory and reduced it in real terms. PI as a percentage of total spending at the beginning of the 1990s was just above 16 percent, whereas in 2017 it represented less than 4 percent. Similarly, the share of PI by Mexican SNGs with respect to GDP has fallen. This means that state PIM has lost ground in the context of expenditure decisions and priorities in the available public budget totals (Figure 19).



Figure 19. Total Public Investment Spending by the Subnational Governments of Mexico (percentage of GDP)



Source: Authors' elaboration.

Notably, the indicators reflect a downward trend, irrespective of the indicators utilized. Hence the particular importance of studying PIM at the SNG level in Mexico, as a tool for reducing stagnation or at least promoting more uniform growth throughout the country. As a recent IDB study (Izquierdo, Pessino, and Vuletin, 2018: 84) rightly points out: "The effect of public investment on growth is strong: a rise of just one percentage point in public investment expenditure increased the level of GDP over the long term by more than 8 percent. Nonetheless, when social expenditure, excluding education, is raised at the expense of productive investment, growth decreases. In relation to total spending, it might be the case that government spending on transfers has effects that reduce growth."

The states also present significant differences in the scale of PI per capita and as a proportion of their spending. The differences in investment adjusted by population are substantial, ranging from nearly US\$100 to just under US\$2,300 per capita (Table 15).



**Table 15. Selected Indicators of Public Investment Management**

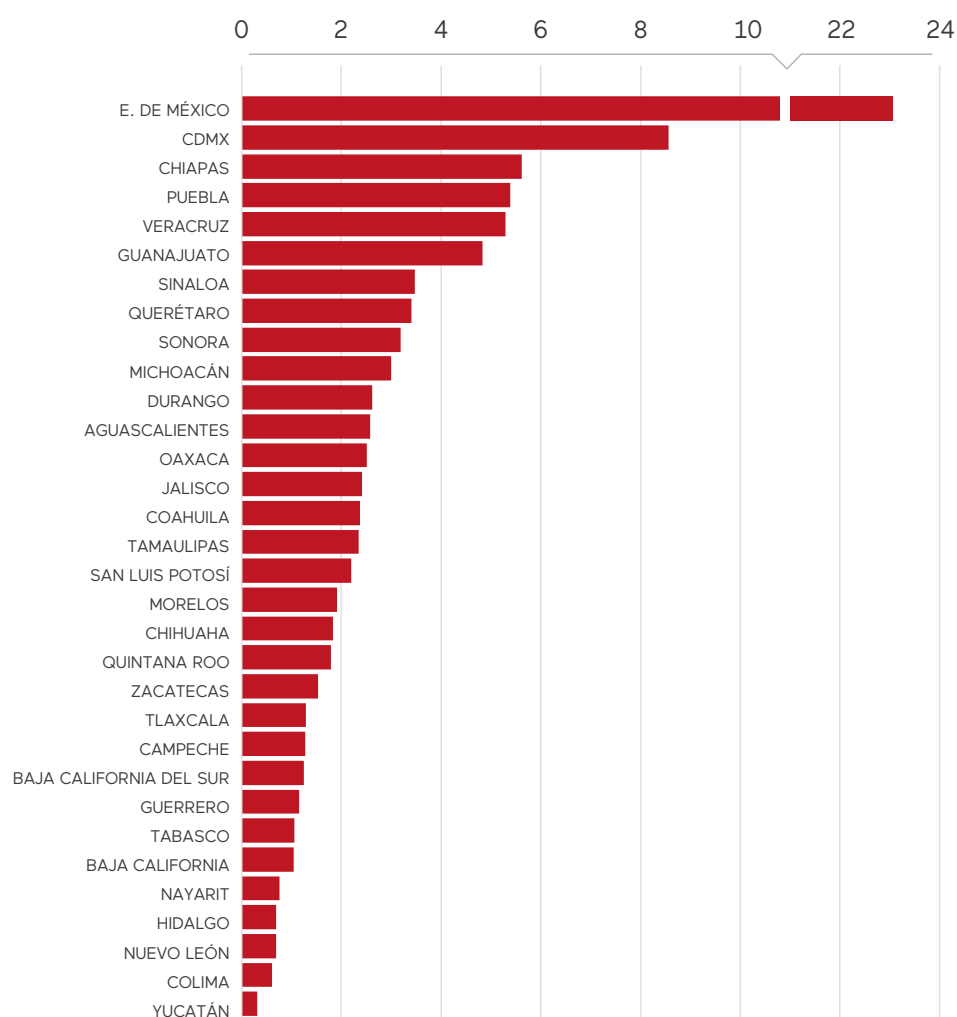
STATES	INDICATORS OF THE FISCAL BURDEN OF PIM		
	% OF PI/TOTAL SPENDING	PI PER CAPITA - CENSUS 2010 IN USD	PI PER CAPITA - INTERCENSAL ESTIMATE 2015 IN USD
BAJA CALIFORNIA SUR	9.15	\$2,564.84	\$2,294.67
QUERÉTARO	14.40	\$2,261.80	\$2,028.29
CAMPECHE	5.75	\$1,599.22	\$1,847.20
STATE OF MEXICO	8.22	\$1,575.91	\$1,477.41
SINALOA	6.45	\$1,246.32	\$1,162.89
SAN LUIS POTOSÍ	5.51	\$1,049.49	\$998.41
CHIAPAS	4.79	\$992.09	\$911.98
DURANGE	4.06	\$966.10	\$899.03
COAHUILA	5.01	\$958.41	\$891.42
AGUASCALIENTES	4.44	\$972.82	\$878.29
SONORA	3.22	\$801.66	\$748.82
MORELOS	4.26	\$781.68	\$729.71
ZACATECAS	2.85	\$757.89	\$715.40
COLIMA	3.00	\$762.56	\$697.50
NAYARIT	3.52	\$724.88	\$665.91
PUEBLA	4.38	\$708.16	\$663.49
GUANAJUATO	4.22	\$681.96	\$639.17
TLAXCALA	3.66	\$691.96	\$636.01
QUINTANA ROO	1.72	\$640.41	\$565.36
TABASCO	2.39	\$544.22	\$508.62
TAMAULIPAS	2.73	\$476.85	\$452.86
GUERRERO	2.11	\$402.48	\$386.02
BAJA CALIFORNIA	2.02	\$350.75	\$333.75
OAXACA	1.62	\$331.45	\$317.59
MICHOACÁN	1.77	\$292.37	\$277.48
JALISCO	1.89	\$285.36	\$267.38
NUEVO LEÓN	1.02	\$261.58	\$237.77
CHIHUAHUA	1.20	\$215.19	\$206.11
YUCATÁN	0.99	\$199.43	\$185.97
VERACRUZ	0.84	\$159.09	\$149.89
HIDALGO	0.56	\$101.39	\$94.54

Source: Authors' elaboration, based on INEGI (undated) and the National Population Council (Consejo Nacional de Población, or CONAPO) (CONAPO, undated).



Finally, the relative share of the federal states in total PI spending carried out by all Mexican SNGs is concentrated in a few places. The top six account for approximately 75 percent of the total (Figure 20).

Figure 20. Relative Share of Public Investment by Subnational Governments of Mexico (average 2014–17)



Source: Authors' elaboration.

3.4 ANALYSIS OF SUBNATIONAL PUBLIC INVESTMENT IN MEXICO: A REGIONAL FOCUS

This section analyzes investment behavior from a regional perspective. To build financial indicators, Mexico has been divided into eight regions: Region 1, Northwest: Baja California, Baja California Sur, Chihuahua, Durango, Sinaloa, and Sonora; Region 2, Northeast: Coahuila, Nuevo León, and Tamaulipas; Region 3, North Central: Aguascalientes, Guanajuato, Querétaro, San Luis Potosí, and Zacatecas; Region 4, West: Colima, Jalisco, Michoacán, and Nayarit; Region 5, South Central: Mexico City, State of Mexico and Morelos; Region 6, Southwest: Chiapas, Guerrero and Oaxaca; Region 7, East: Hidalgo, Puebla, Tlaxcala, and Veracruz, and Region 8, Southeast: Campeche, Quintana Roo, Tabasco, and Yucatán (Map 2).





Map 2. Geographic Regions of Mexico



Source: Authors' elaboration.

The analysis resulting from the deployment of three indicators grouped by region is shown in Table 16.

Table 16. Regional Behavior with Regard to Financial Indicators (2017)

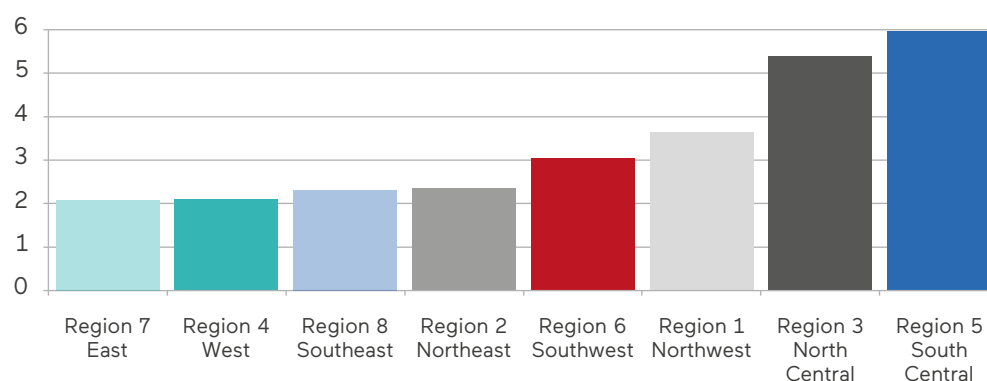
REGION	PI EXPENDITURE AS A PERCENTAGE OF TOTAL	PI EXPENDITURE AS A PERCENTAGE OF GDP	PI EXPENDITURE PER CAPITA
POSITION EACH REGION OCCUPIES WITH REGARD TO THE TOTAL NUMBER OF REGIONS			
1 NORTHWEST (NW)	5	6	5
2 NORTHEAST (NE)	3	3	3
3 NORTH CENTRAL (NC)	1	5	1
4 WEST (W)	6	1	6
5 SOUTH CENTRAL (SC)	2	7	8
6 SOUTHWEST (SW)	8	4	2
7 EAST (E)	4	8	7
8 SOUTHEAST (SE)	7	2	4

Source: Authors' elaboration.



As the descriptive analysis reveals, in per capita terms, the amounts are heterogeneous with respect to each region. However, Figures 21 and 22 indicate that groupings can be identified on the basis of a regional logic. For example, as Figure 22 (PI as a percentage of total spending) reveals, the following groupings can be made: Regions 7 (East), 4 (West), 8 (Southeast) and 2 (Northeast); Regions 6 (Southwest) and 1 (Northwest), and Regions 3 (North Central) and 5 (South Central).

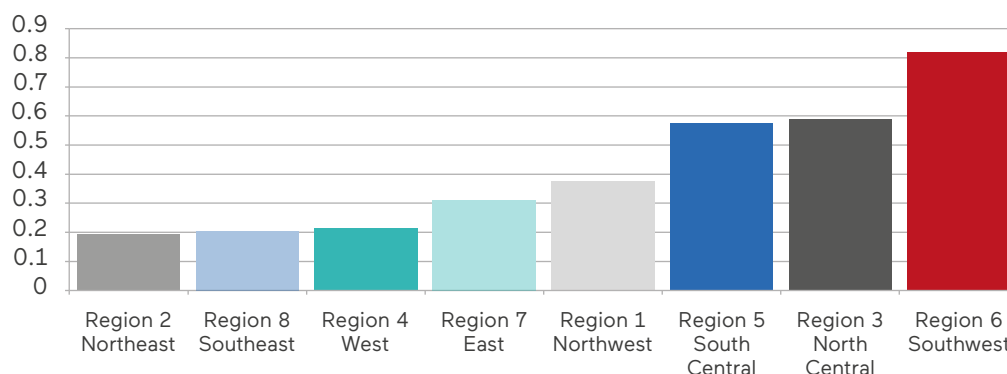
Figure 21. Expenditure on Public Investment as a Percentage of Total Spending by Region, 2017



Source: Authors' elaboration with data from the INEGI (undated).

As Figure 22 indicates, in terms of GDP, Region 6 (Southwest) stands out above the others, whereas Regions 3 (North Central) and 5 (South Central) are repeated in the same group, although by an intermediate amount.

Figure 22. Public Investment Expenditure Behavior by Region, 2017 (percentage of GDP)



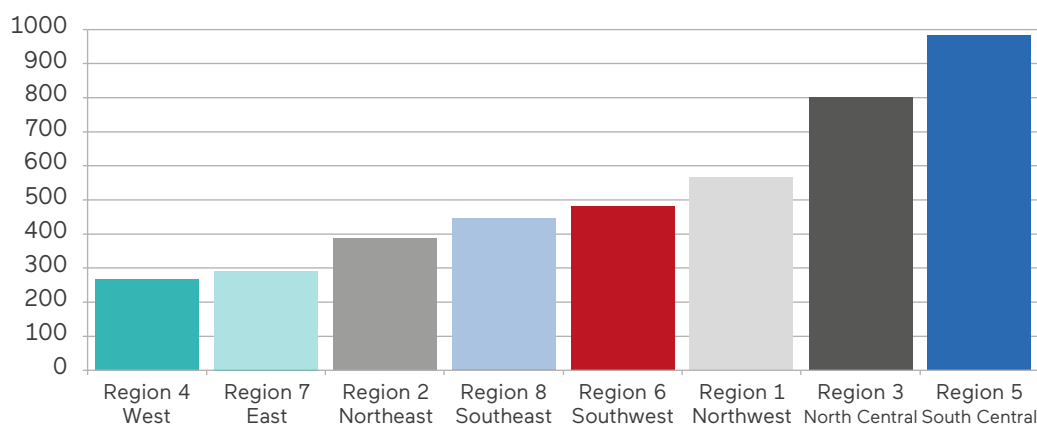
Source: Authors' elaboration with data from INEGI 2018 (INEGI, undated).





Finally, in Figure 23, in terms of PI spending per capita, the amounts are heterogeneous with respect to each region and it is difficult to group together more than one region, as was possible with the other indicators.

Figure 23. Public Investment Expenditure per Capita by Region, 2017



Source: Authors' elaboration with data from INEGI (undated) and CONAPO (undated).

Taking into account the grouping of states into regions, as presented above, it is significant that the expenditure indicators calculated for the eight regions (PI expenditure as a percentage of expenditure, as a percentage of GDP, and per capita) do not maintain a relatively similar relationship to the grouping of the index. In other words, the states positioned highest in the aforementioned indicators are in different positions in the index. Guerrero and Oaxaca (Chiapas was not included in the index), in Region 6, are in similar positions, but at the bottom of the table. In Region 5, although the State of Mexico, Mexico City, and Morelos occupy the highest positions in the indicators, they are above the average, just below the average, and almost at the bottom on the table, respectively. Region 3, which takes second place in the indicators, occupies in all cases one place above the average (Aguascalientes, Zacatecas, San Luis Potosí, Guanajuato, and Querétaro). In Region 3, there is an almost perfect correspondence between the financial-economic and social indicators and the index of state PIM efficiency. The other regions cannot be grouped into a configuration that might be considered a group in the index. This general comparison confirms that public investment management capacities are not often determined by the amount of PI.

The heterogeneous nature of the economic and public finance indicators described above is also reproduced with respect to the satisfaction with and quality of public goods and services. It can be inferred that the proportion of public investments with regard to total spending, as well as their amount adjusted per capita, have a geographic correlation. The states that devote a small percentage of their total



expenditures and record low amounts of investment per capita are located in specific geographic areas associated with the worst poverty and inequality (for example, Southwest and East). Apparently, they are also associated with poor performance in terms of satisfaction with and the quality of public goods and services at the SNG level.

3.5 COMPOSITION AND SPECIFIC WEIGHT OF PUBLIC INVESTMENT

On average, 80 percent of state budgets correspond to resources transferred by the federal government to regional entities (47 percent in the exceptional case of Quintana Roo), under the headings of “federal shares” and “federal grants.”¹⁷

Meanwhile, own revenues such as taxes were very low in 2017, with an average share of 4 percent. Whereas average revenue from central funding was around 8 percent in that year, it was exceeded by far in states such as Quintana Roo (43 percent), Nuevo León (29 percent), Veracruz (20 percent), and Durango (14 percent). At the opposite end of the spectrum are Guanajuato, Hidalgo, Nayarit, Puebla, and San Luis Potosí, which received no revenues at all from this source (Table 17).

This is, however, a specific situation, since the states that did not receive funding in 2017 did receive funding in fiscal year 2010, in which the figures were: 3 percent in Guanajuato, 10 percent in Nayarit, 5 percent in Puebla, and 1 percent in San Luis Potosí. In general, these situations vary from one six-year government term of office to another, depending on the margin of borrowing available to the states (INEGI, undated).

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¹⁷ Part of these transfers are made through Ramo 23, which are recorded in the Federal Government Project Bank. Moreover, an ex ante cost-benefit evaluation with an analysis of social profitability is only mandatory as a funding requirement for certain cases.





Table 17. Breakdown of Origin of Budget Revenue per Federal Entity, 2017 (percentage)*

	FEDERAL GRANTS	DUTIES	IMPROVEMENT GRANTS	SOCIAL SECURITY CONTRIBUTIONS	RIGHTS	INITIAL PROVISIONS	FINANCING	TAXES	OTHERS	FEDERAL SHARES	PRODUCTS
Aguascalientes	44.9	2.9	0.0	0.0	1.7	0.0	7.1	3.6	7.5	31.6	0.6
Baja Calif.	44.0	0.4	0.0	0.0	2	0.0	5.1	7	0.0	41.0	0.4
Baja Calif. Sur	58.1	0.8	0.0	0.0	2.9	0.0	3.3	5.2	0.0	29.7	0.1
Campeche	55.7	0.7	0.0	0.0	2.3	0.0	4.2	6.1	0.0	30.5	0.5
Coahuila	43.5	0.9	1.2	0.0	5.9	0.0	7	5.1	0.4	35.3	0.9
Colima	47.7	1.5		0.0	2.2	0.0	3.2	4.2	9.2	31.7	0.2
Chiapas	59.0	1.4	0.0	0.0	1.3	0.0	7.1	1.4	0.0	29.5	0.2
Chihuahua	42.1	3.2	0.0	0.0	4.2	4.8	0.0	7.2	0.8	37.3	0.4
Mexico City	13.3	3.1	0.0		10.8	0.0	1.8	24.7	4.4	40.1	1.7
Durange	49.6	0.5	0.0	0.0	3.4	0.0	14.4	5.0	0.0	26.8	0.2
Guanajuato	43.3	12.1	0.0	0.0	2.2	0.0	0.0	3.8	0.0	37.6	1.1
Guerrero	66.0	0	0.0	0.0	0.5	0.0	4.6	2.3	0.1	26.3	0.2
Hidalgo	63.1	0.4	0.0	0.0	1.6	0.0	0.0	2.3	0.0	32.1	0.5
Jalisco	42.3	3	0.0	0.1	2.7	0.0	0.3	4.1	0.0	47.1	0.5
S. of Mexico	34.8	1.3	0.2	6.7	2.7	0.0	2.2	6.0	10.6	35.2	0.2
Michoacán	61.0	0.3	0.2	0.0	2.6	0.0	1.8	1.3	0.0	32.3	0.6
Morelos	51.5	0.2	0.4	0.0	2.3	0.0	11.5	2.0	0.3	31.6	0.2
Nayarit	58.3	1.7	0.0	0.0	1.2	0.0	0.0	3.4	0.2	34.9	0.2
Nuevo León	27.4	1.6		0.0	3.1	0.0	29	8.3	0.0	30.4	0.3
Oaxaca	66.0	1.3	0.0	0.0	1.9	0.0	3.7	1.6	0.1	25.0	0.4
Puebla	51.9	0.3		0.0	2.4	0.0	0.0	5.5	3.3	35.9	0.7
Querétaro	46.3	2.6	0.0	0.0	3.8	0.0	0.0	8.4	0.0	37.3	1.5
Quintana Roo	26.4	0.7		0.0	2.7	0.0	42.9	6.5	0.0	20.6	0.3
SL Potosí	52.3	0.0	0.0	0.0	4.8	0.0	0.1	3.3	2.6	35.0	2.0
Sinaloa	55.2	0.0	0.0	0.0	5.5		0.0	4.1	0.0	34.7	0.4
Sonora	36.4	0.9	0.0	0.0	2.3	0.0	12.1	4.3	11.5	32.4	0.2
Tabasco	44.5	0.3		0.0	2.0	0.0	7.5	3.1	0.0	42.3	0.3
Tamaulipas	49.6	0.7		0.0	3.5	0.0	2.6	6.2	0.0	36.8	0.6
Tlaxcala	56.0	0.1		0.0	1.8	4.4	0.0	2.0	0.6	34.2	0.9
Veracruz	43.8	1.3	0.0	0.0	1.2	0.0	20.1	2.9	0.4	30.2	0.1
Yucatán	51.9	0.9		0.0	3.3	0.0	5.5	4.7	0.0	32.6	1.1
Zacatecas	46.6	1.1	0.4	0.0	1.5	0.0	21.6	2.5	0.0	25.7	0.7

Source: Authors' elaboration with data from INEGI (undated).

*The blank cells indicate not applicable, not available, or no answer.

Chapter 3

The composition of spending of the 23 Mexican SNGs for which INEGI has information, as seen in Table 18, also shows a strong trend toward concentration in two or three areas. Among these are Transfers, allocations, subsidies and other aid, with an average of 45 percent of expenditure per state (for example, Campeche, Colima, Hidalgo, and San Luis Potosí devote around 60 percent of their budget to this category), followed by Personal services, with an average of 19 percent of expenditure (states such as Coahuila, Michoacán, Puebla, Tabasco, Tamaulipas, and Veracruz stand out, with spending of over 30 percent). In third place is expenditure on Resources allocated to municipalities, with 15 percent of average expenditure among the states analyzed (in this case, the most notable are Campeche, Chiapas, Guerrero, Hidalgo, Michoacán, and Tabasco, with allocations of between 18 and 21 percent).

Table 18. Spending Breakdown of Mexican Subnational Government Expenditure Budgets, 2017 (percentage)*

	REAL ESTATE AND INTANGIBLES	PUBLIC BORROWING	FINAL PROVISIONS	PUBLIC INVESTMENT	FINANCIAL INVESTMENTS AND OTHER PROVISIONS	MATERIALS AND SUPPLIES	OTHER	ALLOCATED RESOURCES, FEDERAL ALLOCATIONS, AND SHARES	RESOURCES ALLOCATED TO MUNICIPALITIES	GENERAL SERVICES	PERSONAL SERVICES	TRANSFERS, ALLOCATIONS, SUBSIDIES, AND OTHER AID
Aguascalientes	0.7	8.8	10.7	4.4	2.0	0.7	0.0		15.1	1.3	4.0	52.4
Baja Calif.	0.8	2.0	0.0	2.0	0.1	1.3	0.0		14.7	3.0	25.0	51.2
Baja Calif. Sur	0.3	4.2	0.4	9.1	2.0	1.2	0.0		13.5	2.9	6.2	60.0
Campeche	0.7	1.5	0.0	5.8	0.0	2.8	0.0		17.5	8.8	26.7	36.2
Coahuila	0.5	8.3	0.0	5	0.0	1.5	0.0		13.5	6.3	34.0	31.0
Colima	0.8	5.6	0.3	3	0.0	1.4	0.0		11.6	5.1	12.6	59.7
Chiapas	0.2	6.0	0.0	4.8	1.6	1.7	0.0		19.8	2.5	13.8	49.6
Chihuahua	0.6	5.9	3.0	1.2	0.1	1.6	0.0		14.4	2.7	15.6	54.9
Mexico City	0.8	3.8	2.5	3.3	0.7	1.9		34.2		6.8	15.8	30.2
Durango	0.3	16.1	0.0	4.1		1.6	0.0		11.2	2.6	29.0	35.2
Guanajuato	1.3	2.0	7.6	4.2	0.4	0.8	0.0		14.2	3.5	28.8	37.2
Guerrero	0.2	0.6	5.1	2.1	0.2	0.8	0.0		18.5	3.8	9.4	59.4
Hidalgo	0.1	1.4	7.8	0.6	0.3	0.6	0.0		18.1	5.1	4.6	61.3
Jalisco	0.7	1.9	1.5	1.9	0.0	1.1	0.0		20.6	4.0	31.4	36.9
S. of Mexico	0.1	2.3	1.3	8.2	1.1	0.5	0.0		13.3	2.1	18.1	52.9
Michoacán	0.1	3.7	0.0	1.8	0.1	1.2			18.5	6.6	37.1	31.0
Morelos	0.8	9.4	0.0	4.3	0.0	1.8	0.0		15.7	3.4	5.6	59.0
Nayarit	0.1	2.3	1.9	3.5	0.0	1.0	0.0		17.0	2.3	14.7	57.2
Nuevo León	1.2	28.2	1.1	1.0	1.8	0.6	0.0		13.2	3.1	13.6	36.1
Oaxaca	0.3	4.2	3.6	1.6	0.0	0.7	0.0		20.5	4.2	6.7	58.2





	REAL ESTATE AND INTANGIBLES	PUBLIC BORROWING	FINAL PROVISIONS	PUBLIC INVESTMENT	FINANCIAL INVESTMENTS AND OTHER PROVISIONS	MATERIALS AND SUPPLIES	OTHER	ALLOCATED RESOURCES, FEDERAL ALLOCATIONS, AND SHARES	RESOURCES ALLOCATED TO MUNICIPALITIES	GENERAL SERVICES	PERSONAL SERVICES	TRANSFERS, ALLOCATIONS, SUBSIDIES, AND OTHER AID
Puebla	0.2	0.7	1.8	4.4	1.1	1.3	0.0		16.6	4.2	32.2	37.6
Querétaro	0.7	1.2	2.8	11.8	0.2	1.0	0.0		15.2	2.7	5.7	58.7
Quintana Roo	0.7	44.8	0.0	1.7	0.0	1.1	0.0		10.1	4.3	3.6	33.7
SL Potosí	1.2	1.0	0.0	5.5	0.0	0.5	0.0		14.4	1.0	15.3	61.3
Sinaloa	1.3	1.0	3.0	6.4	0.7	0.4	0.0		12.9	3.4	8.1	62.7
Sonora	1.2	13.3	0.0	3.2	0.0	0.9	0.0		11.8	3.0	12.9	53.7
Tabasco	0.7	1.3	0.0	2.4	0.1	1.5	0.0		20.8	4.7	32.9	35.5
Tamaulipas	0.5	5.6	1.8	2.7	0.0	1.3	0.0		15.3	6.7	35.8	30.2
Tlaxcala	0.1	0.0	4.4	3.7	0.2	0.7	0.0		17	1.1	9.2	63.5
Veracruz	0.6	23.8	2.1	0.8	0.0	0.6	0.0		15.5	2.7	31.9	21.9
Yucatán	0.4	2.6	2.1	1.0	0.0	2.6	0.0		14.9	7.3	28.1	41.0
Zacatecas	0.8	21.7	0.0	2.9	1.6	2.5	0.0		12.9	2.6	28.4	26.7

Source: Authors' elaboration with data from INEGI (undated).

*Not applicable, not available or no answer.

Average expenditure on PI is 3.68 percent and ranges between 1 percent (Hidalgo, Nuevo León, and Veracruz) and 8 and 9 percent (State of Mexico and Baja California, respectively) for 2017. To summarize, the importance of PI as a share of the expenditure budget is very low in each of Mexico's SNGs.

3.6 THE REGULATORY-INSTITUTIONAL FRAMEWORK AND RELATED POLICIES

The Constitution of Mexico, in its Article 115, stipulates the spheres and authority of the state and municipal jurisdictions. Among others aspects, it states that "the states shall adopt, as their internal regime, the republican, representative, democratic, secular and popular form of government, with the free municipality forming the basis of its territorial division and its political and administrative organization..." (p. 109). This latter concept is particularly important insofar as it prompted some municipalities to lodge complaints with the Supreme Court, alleging that state government initiatives to promote budget coordination mechanisms encroached on their own authority, thereby putting a stop to possible regional PI management.



Such was the case of Controversia 6/98, a complaint filed by several municipalities of the state of Puebla before mechanisms of the municipal planning committees and budgetary audit and linkage means and instruments, against their state government following approval of the State Tax Federalism Law.¹⁸

Article 117 of the Constitution of Mexico, for its part, establishes, among other stipulations (pp.119–120), that states cannot, in any case whatsoever: “I. Form an alliance, treaty or coalition with another state or with foreign powers. VIII. Directly or indirectly enter into obligations or enterprises with the governments of others nations, with foreign companies or individuals, or that must be paid for in foreign currency or outside of the national territory.”

In general, state laws are homologous to and concurrent with the federal legal framework and enjoy almost the same scope, with some exceptions. This means that a review of the federal legal context is necessary and useful as a reference for the state framework of PIM-related laws.

3.6.1 RECENT EVOLUTION OF THE REGULATORY-INSTITUTIONAL FRAMEWORK OF PUBLIC INVESTMENT MANAGEMENT BY STATE GOVERNMENTS

To maximize management effectiveness, efficiency, and higher quality in the use of public resources executed by the federation, states, and municipalities in Mexico, in 2006 the federal government promoted a series of changes and adjustments to the country’s legal tax framework, which gained the support of the Legislature and was worked out over a period of ten years (2006–16). These regulatory changes, which, as a whole, signified the structural reform of public expenditure, became the legal tax framework that currently regulates budget management for all of the country’s public bodies.

The process to improve the management, impact, and quality of public expenditure got underway in 2006, following approval by Congress and the entry into force of the Federal Budget and Fiscal Responsibility Law, which superseded the Budget, Accounting and Public Expenditure Law of 1976. In addition to modernizing the processes of the budget cycle and including measures to ensure fiscal balance, the new Federal Budget and Fiscal Responsibility Law incorporated rules to ensure the full integration of development planning with results-based programming and

18 This type of case is an example of how information cannot be easily coordinated between the subnational levels, and between these and the national level, on a project-to-project basis. The information is often presented in a fragmentary way, which makes it difficult to analyze complementariness and/or duplication of effort between different levels (which is contrary to the spirit of the OECD recommendations), and hampers project portfolio management and, therefore, the quest for adequate planning.





budgeting, as well as improving the mechanisms of transparency and public access to information related to public spending. In terms of capital expenditure, the new Federal Budget and Fiscal Responsibility Law incorporated pluriannual investment project planning, as well as mechanisms for evaluating PI viability.

The tax reform undertaken in 2007 included a constitutional reform regarding results-based budgeting, which was specified in 2008. Mexico's Constitution was amended to establish that the federal, state, and municipal governments must manage public resources by observing the principles of efficiency, effectiveness, economy, transparency, and honesty, with a focus on results. It also stipulated that ex post evaluation of the results of the employment of such resources was mandatory, encouraging results-based allocation.

In 2008, a General Law of Government Accounting was also approved, aimed at establishing the general criteria for governmental accounting and the disclosure of financial information by federal, state, and municipal public bodies. The aim here is to appropriately harmonize the financial and accounting records of assets, liabilities, revenues, and expenditures of the three layers of government, thereby helping to measure the effectiveness, economy, and efficiency of public revenues and expenditure.

In May 2009, the Federal Auditing and Accountability Law was enacted, with the purpose of harmonizing supreme auditing with the new constitutional framework in terms of results-based budgeting. One of the significant points of this new law was that it granted powers to the Supreme Audit Institution to verify the achievement of results obtained from the execution of the expenditure allocated to the programs and projects established in the Expenditure Budget.

Following the election of the new federal administration, in 2013 a new tax reform was carried out in Mexico, which focused more on the tax collection process, with a view to increasing the State's financial capacity and the availability of resources. The reform also included incentives to increase state and municipal tax collection and to strengthen the financial capacity of state and local treasuries.

In 2015, a constitutional reform was approved that granted powers to Congress to legislate in areas concerning the financial discipline of federal bodies and municipalities. It was a response to the need for the federal government to impose effective control mechanisms to address financial imbalances in the states and municipalities, and to thereby reduce the risks of overborrowing that threatened to seriously compromise the financial viability of various state and local governments. The Federal and Municipal Entities Financial Discipline Law, promulgated in 2016,



was the legal and regulatory framework that came out of the constitutional reform. Its chief objective was to ensure the sustainable management of SNG public finances in Mexico by establishing rules to avoid overborrowing and ensuring that resources are employed exclusively for productive PI whenever federal or municipal entities enter into long-term debt.

The process of legal tax reform that got underway in 2006 saw its most recent expression in 2016, with the promulgation of a new Audit and Accountability Law, which grants greater powers to the Supreme Audit Institution of the Federation to audit non-earmarked federal expenditure (shares of Ramo 28) and thereby ensure it is appropriately executed. This reform was carried out within the framework of the establishment of the National Anticorruption System.

3.6.2 AFFILIATION AND ADMINISTRATIVE NATURE OF PUBLIC INVESTMENT MANAGEMENT

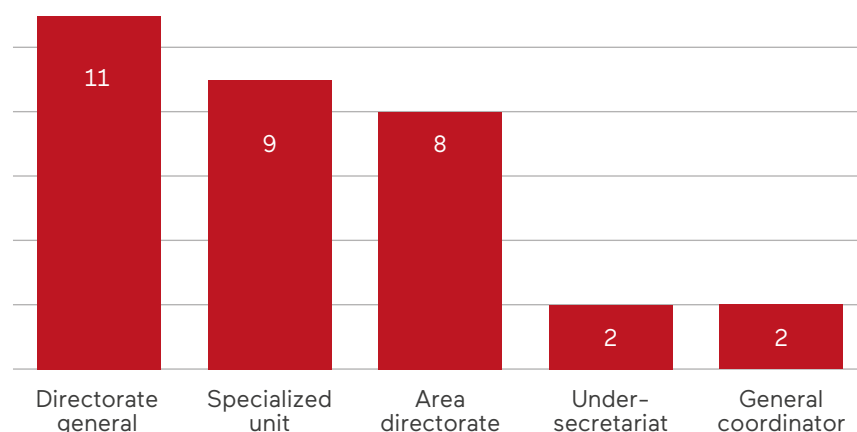
The typical administrative character of PI units in Mexican SNGs is the directorate general (11 states). These are followed by specialized units (nine states). In three of the states where the investment units are directorates general, these are generic planning directorates.

The atypical administrative PI units at the SNG level are under-secretariats and general coordinators (each represented in two states). The characteristic PI administrative unit in the remaining Mexican SNGs (eight states) is the area directorate. According to the hierarchical structure of these administrative units, under-secretariats are affiliated with the secretariats; directorates general with under-secretariats (although some of them answer directly to the secretariats); and area directorates with directorates general. The specialized units and the general coordinators are sector-based (some as a satellite), although they never rank above area directorates in the hierarchy (Figure 24).





Figure 24. State Public Investment Management Administrative Units (N=32)



Source: Authors' elaboration with information from the Organization and Procedures Manuals and the State Laws on Public Administration of each federal entity (States of the Republic).

3.7 INDEX OF PUBLIC INVESTMENT MANAGEMENT BY SUBNATIONAL GOVERNMENTS OF MEXICO

The following section presents the results obtained by calculating the index of D-PIM efficiency developed for the IDB by Integralia Consultores, based on various previous methodological proposals,¹⁹ as well as their respective sub-indices, for the 26 entities that responded to the questionnaire (Map 3).²⁰

The index was constructed based on the responses received from an online questionnaire. The questionnaire consists of 74 questions and its design used Armendáriz and Contreras (2016) and IERAL (2018) as reference points. In some cases, the form of the questions was amended or questions were incorporated or removed in each dimension to adapt them to the Mexican context.



19 Armendáriz and Contreras (2016); IERAL (2018) and Dabla-Norris et al. (2011).

20 The entities that did not respond to the questionnaire are Baja California, Chiapas, Coahuila, Durango, Michoacán, and Tabasco.

Map 3. Mexican State Governments that Participated in the Index Calculation

Source: Authors' elaboration.

Civil servants in 26 of the 32 states that make up the Mexican Republic answered the questionnaire. All those who responded are directly involved with PI in their institutions. The questions had two possible types of responses. First, there were questions in which the user could choose a single option, in which the score received (from 0 to 4) corresponds to the value associated with the option selected; depending on the number of possible responses, different fractions of the maximum value are assigned to each (4). In the second type of question, the user could select more than one option, and the score is determined by the number of responses chosen with regard to the total number of responses available.

The index was constructed in two stages. In the first, the value of the sub-index for each dimension was calculated from a simple average of the scores allocated to all the corresponding questions. In the second, the value of the index was calculated for each state from a simple average of the scores allocated to all the sub-indices of the corresponding entity.²¹

21 Tests of robustness: 1,000 alternative scenarios were simulated, each with a set of randomly generated weightings. Thereafter, the weightings were used to calculate 1,000 simulated values of the index for each entity, as well as the position in the ranking occupied by the corresponding state in each simulation. For the large majority of the states, the density of the simulated rankings is distributed in a range that is very close to the ranking calculated with observed values. This confirms that the index is robust in most cases. Perhaps the two most notable exceptions are Mexico City and Colima.





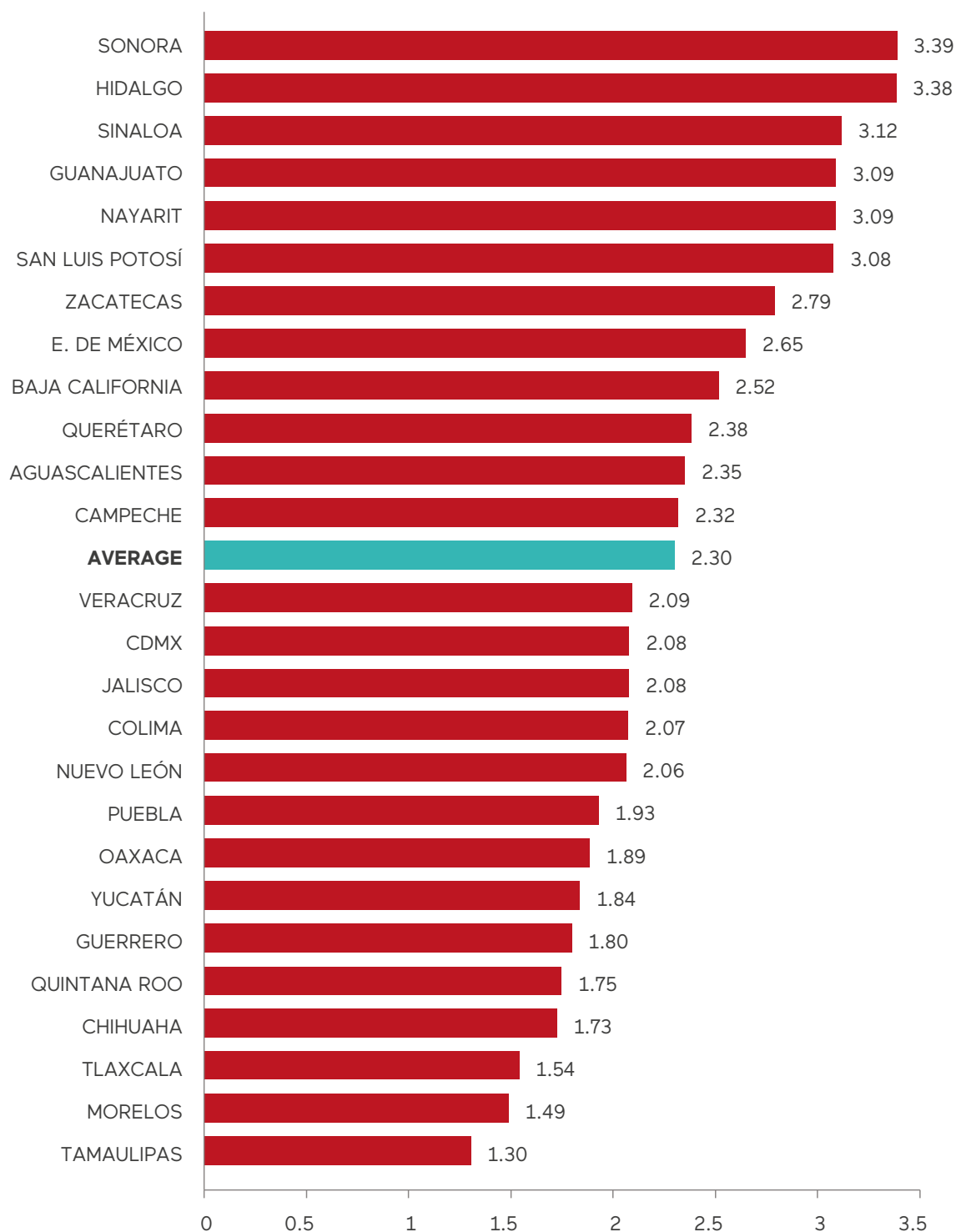
The results are presented in two complementary forms. First, the value of the index obtained by each state is shown. Thereafter, the value of the sub-index for each entity in each of the five dimensions is illustrated, as well as the average of the five dimensions. Both the index and the sub-indices may have a value of between 0 (worst result) and 4 (best result).

3.7.1 GLOBAL INDEX OF STATE PUBLIC MANAGEMENT IN MEXICO

Figure 25 illustrates the value of the index obtained by the 26 Mexican states that answered the questionnaire. The average is 2.3. The value of the index for 12 states is above this value, while the remaining 14 are below it. It also shows the significant variation between entities. Whereas Tamaulipas is the state with the lowest value (1.3), Sonora and Hidalgo share the highest score (approximately 3.4). Therefore, the gap between the state with the lowest and the highest value in the index is 2.1, more than half of the total scale of the index.



Figure 25. Global Index of Efficiency in Decentralized Public Investment Management in the Mexican States



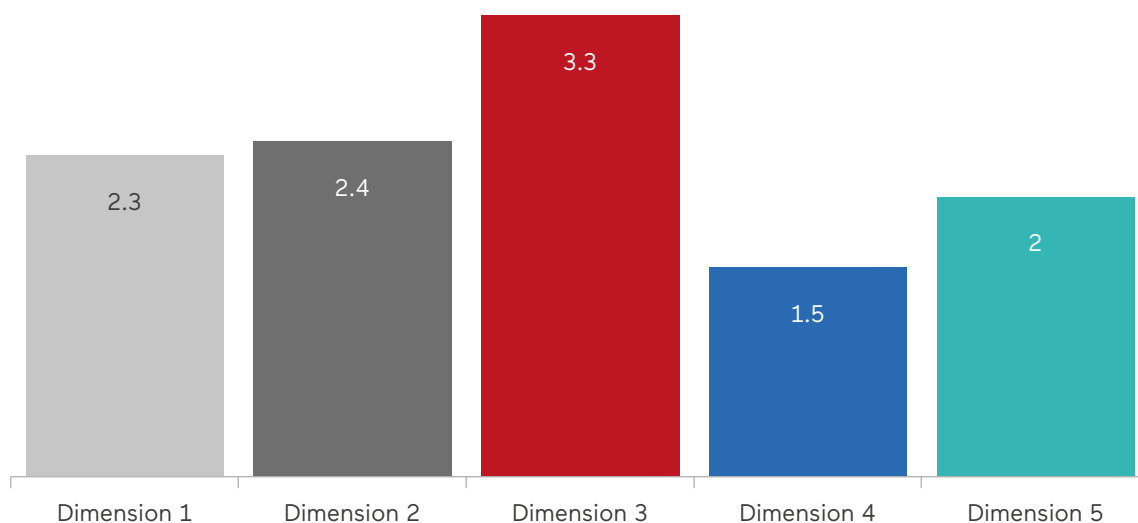
Source: Study by Integralia Consultores (2018).



3.7.2 INDEX BY DIMENSION AND BROKEN DOWN BY SUBNATIONAL GOVERNMENT OF MEXICO

The D-PIM index was calculated for the 26 states in each dimension. On average, the greatest strength of Mexico's SNGs lies in the aspects related with Project implementation (Dimension 3), and its greatest area of opportunity is related to ex post project evaluation, audits and asset management (Dimension 4). In the first case, the score is 3.3, and in the second, 1.5. For the other three dimensions, the value of the sub-index is between 2 and 2.4 (Figure 26).

Figure 26. Average Value of the Sub-index for Each Dimension



Source: Study by Integralia Consultores (2018).

Although there is some variation in the values of the five sub-indices, the amount of this dispersion changes substantially from one dimension to another. At one extreme are the values of the Dimension 3 sub-index, which range between 2.2 and 4. At the other end of the spectrum is the sub-index of Dimension 4, whose values fluctuate between 0 and 3.7. In the other three dimensions, the difference between the minimum and the maximum values ranges between 2 (Dimension 2) and 2.6 (Dimension 1).

Therefore, the data provided by the 26 entities that responded to the questionnaire indicate that Dimension 3 is not only the one with the highest average (3.3), but also has the lowest dispersion (the range is 1.8). In contrast, Dimension 4 records the lowest average (1.5) and the highest dispersion (the range is 3.7) (Figure 27).



Figure 27. Index of Efficiency of Decentralized Public Investment Management by the Mexican States, by Dimension



Source: Study by Integralia Consultores (2018).



This section offers two complementary visualizations for analyzing and comparing the value obtained by a state in the sub-indices of each of the five dimensions and in the index. The first visualization is a heat map (Table 19). Each row corresponds to one state (alphabetically ordered) and each column to one of the five sub-indices or to the index. The clearer the cell's background, the higher the value obtained by this entity in the corresponding sub-index or index.

In addition to offering a complementary perspective of the variation in the values obtained by the 26 states in each dimension and in the index, the visualization also highlights the fact that Dimension 4 is the only one in which at least one entity (in this case, four) obtained a value of 0.

Table 19. Heat Map of Results According to Dimension and Subnational Government of Mexico

	DIMENSIONS					D-PIM INDEX OF EFFICIENCY
	1	2	3	4	5	
	STRATEGIC GUIDES AND PROJECT EVALUATION	PROJECT SELECTION	PROJECT IMPLEMENTATION	EX POST PROJECT EVALUATION, AUDITS AND ASSET MANAGEMENT	GENERAL CHARACTERIZATION AND COORDINATION OF PUBLIC INVESTMENT	
Aguascalientes	2.68	2.83	3.56	0.80	1.89	2.35
Baja Calif. Sur	1.87	3.00	3.85	2.60	1.26	2.52
Campeche	2.65	1.83	3.56	1.80	1.76	2.32
Chihuahua	2.29	1.33	2.52	1.60	0.89	1.73
Mexico City	2.65	2.83	3.11	0.00	1.80	2.08
Colima	2.10	1.33	3.44	1.40	2.09	2.07
State Of Mexico	3.29	3.17	3.22	1.20	2.36	2.65
Guanajuato	3.13	3.33	4.00	2.33	2.65	3.09
Guerrero	1.05	1.83	3.33	1.20	1.58	1.80
Hidalgo	3.20	3.00	4.00	3.73	2.98	3.38
Jalisco	1.85	2.33	3.48	0.80	1.92	2.08
Morelos	1.55	1.33	2.44	0.40	1.72	1.49
Nayarit	2.55	3.17	4.00	2.80	2.92	3.09
Nuevo León	2.40	2.50	2.78	0.80	1.83	2.06
Oaxaca	1.50	2.17	3.59	0.40	1.78	1.89
Puebla	2.14	2.50	3.30	0.00	1.72	1.93
Querétaro	2.43	2.50	2.44	2.60	1.95	2.38
Quintana Roo	1.75	2.00	3.44	0.00	1.56	1.75
San Luis Potosí	3.23	3.00	4.00	2.60	2.56	3.08
Sinaloa	2.81	3.33	3.70	2.60	3.14	3.12
Sonora	3.58	3.33	3.85	3.40	2.78	3.39



Chapter 3

	DIMENSIONS					D-PIM INDEX OF EFFICIENCY
	1	2	3	4	5	
	STRATEGIC GUIDES AND PROJECT EVALUATION	PROJECT SELECTION	PROJECT IMPLEMENTATION	EX POST PROJECT EVALUATION, AUDITS AND ASSET MANAGEMENT	GENERAL CHARACTERIZATION AND COORDINATION OF PUBLIC INVESTMENT	
Tamaulipas	1.03	1.83	2.22	0.00	1.44	1.30
Tlaxcala	1.20	2.17	2.37	1.00	0.97	1.54
Veracruz	1.75	1.67	3.78	1.80	1.46	2.09
Yucatán	2.54	1.83	2.22	1.04	1.55	1.84
Zacatecas	2.65	2.50	3.85	2.60	2.35	2.79
State Average	2.30	2.41	3.31	1.52	1.96	2.30

Source: Study by Integralia Consultores (2018).

According to the values obtained by the 26 SNGs of Mexico in the five sub-indices and the PIM index of efficiency, Dimension 3 (Project implementation) by far records the best values, in contrast with Dimension 4 (Ex post project evaluation, audits, and file management), in which the majority of SNGs record a low or very low evaluation (this is the only dimension with results of 0).

Table 19 synthesizes the results of each dimension with different indicators (total results, maximum result, and distance from the maximum result). Undoubtedly, Dimensions 4 and 5 have the worst results, whereas Dimensions 1 and 2 are close to the average (final column, right side). The result is replicated by the regions.

Overall, the heat map helps to detect more easily the states that scored consistently high values in the sub-indices of the five dimensions (Guanajuato, Hidalgo, Nayarit, San Luis Potosí, Sinaloa, and Sonora); or consistently low values (Morelos and Tlaxcala), and others with relatively high values in some dimensions but very low ones in others (Mexico City, Nuevo León, and Puebla).

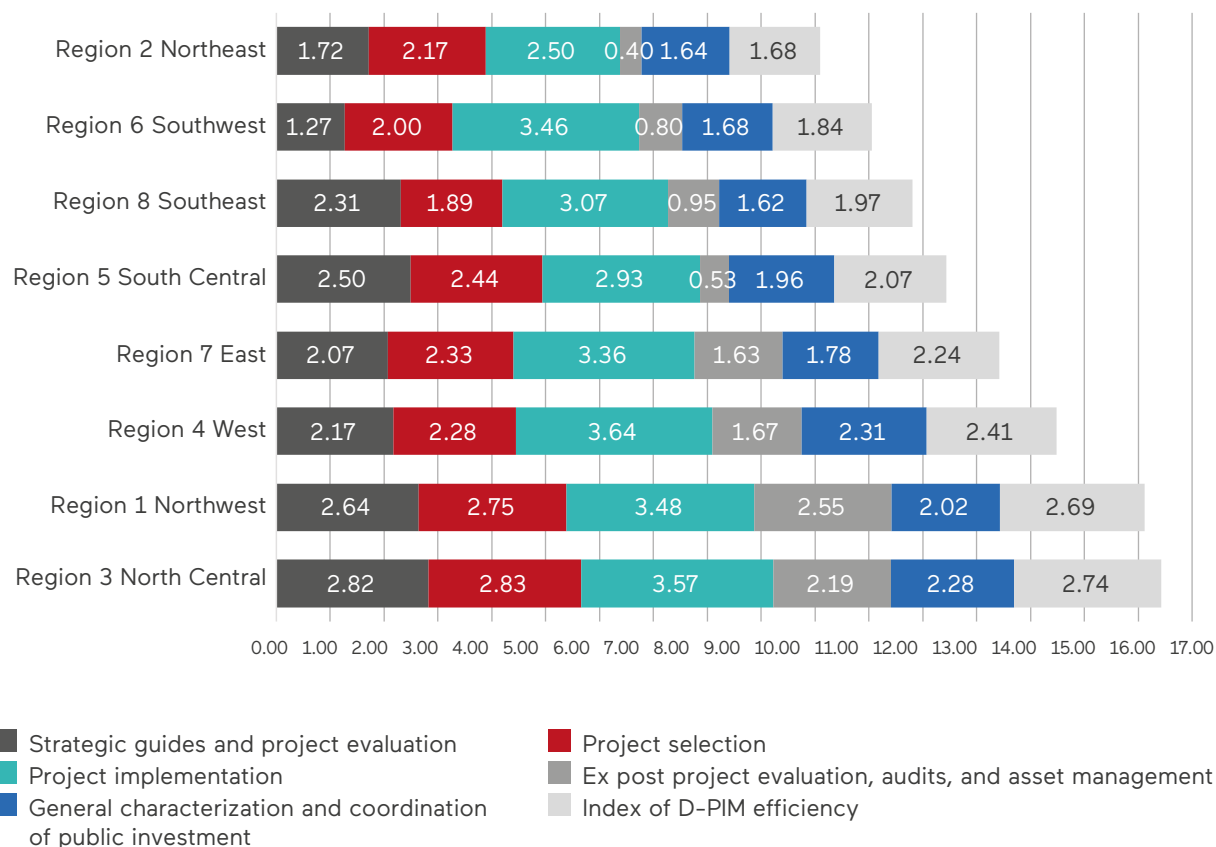
3.7.3 INDEX ACCORDING TO GEOGRAPHIC REGION

Figure 28 presents the results of the D-PIM index for Mexico, grouped by region. As can be seen, Regions 3 and 1 post the best results. One counterintuitive finding in the grouping is that two contrasting regions such as Regions 2 and 6 record similar results, occupying the final two places in the figure. Due to the scale of investments it presents, Region 5 is situated practically at the midpoint of the scale, which indicates not only its significant potential in terms of improving management, but, above all, the scale of its effect.





Figure 28. Result of the Global and Regional Index of Public Investment Management and Regional Index, by Dimension



Source: Authors' elaboration based on the study by Integralia (2018).

Table 20 presents a synthesis of the indicators grouped by region. It indicates general shortcomings in Dimension 4 of the index, ex post project evaluation, audits and asset management. Dimension 3 (Project implementation) had the best score.



Table 20. Indicators Grouped by Region

REGION	STRATEGIC GUIDES AND EVALUATION	SELECTION	IMPLEMENTATION	EVALUATION EX POST, AUDITS, AND ASSETS	PI CYCLE	D-PIM INDEX
TOTAL	17.50	18.69	26.01	10.72	15.28	17.64
MAXIMUM RESULT	104	104	104	104	104	104
DISTANCE FROM MAXIMUM RESULT	86.50	85.31	77.99	93.28	88.72	86.36

Source: Authors' elaboration.

Note: The total expresses the sum of the results by dimension, corresponding to all the regions presented in Figure 28.

The results of the proposed index can be summarized as follows (see Annex 3: Results of the D-PIM Index in Mexico): the dimension that records by far the highest average value is Dimension 3 (Project implementation), with an average of 3.3, while the worst is Dimension 4 (Ex post project evaluation, audits, and asset management), with an average of 1.5. The other dimensions show very similar averages (Dimension 1: 2.3; Dimension 2: 2.4; Dimension 5: 2.0).

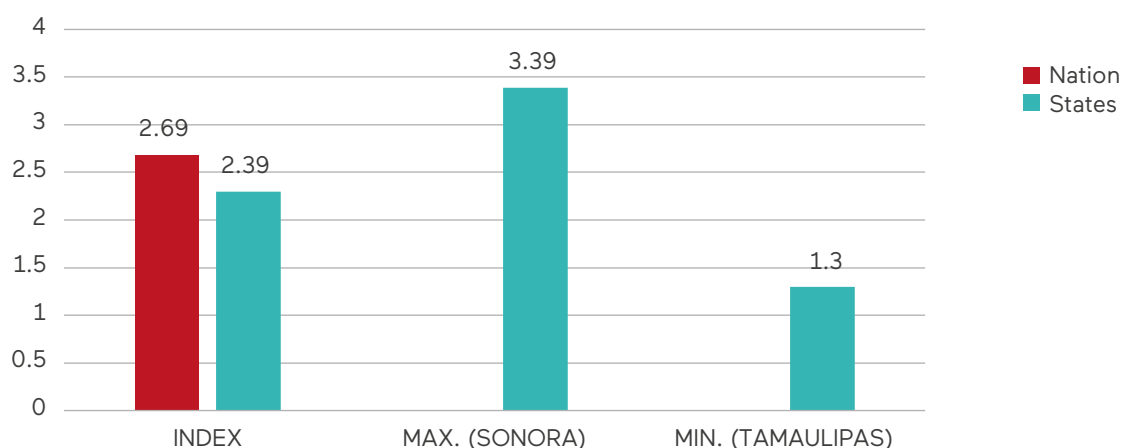




3.8 COMPARISON OF THE INDICES OF DECENTRALIZED PUBLIC INVESTMENT MANAGEMENT PROPOSED BY INTEGRALIA AND BY ARMENDÁRIZ AND CONTRERAS

Figure 29 compares the index for the national level estimated by Armendáriz and Contreras with the one calculated for the states by Integralia-IDB.²² The comparison helps to highlight two important aspects: (i) the average value of the state index is positioned below the national index constructed by Armendáriz and Contreras (2016) (2.39 compared to 2.69, respectively), which reveals that the PIM capacities at the state level are, on average, more limited than those found at the federal government level; and (ii) there is wide variation in the index between the states. Seven states scored higher than the national index, indicating that the statement that subnational government management capacities are inferior to those seen at the national level does not always hold true. Furthermore, the order of the dimensions, from the strongest to the weakest, coincides with the findings about Mexico in the study by Armendáriz and Contreras (2016).

Figure 29. Indices of Public Investment Management Efficiency at the National and State Level in Mexico (scale 1 to 4)



Source: Authors' elaboration.



²² For the sake of comparison, only the same questions that were applied in the index calculated by Armendáriz and Contreras were used. Specifically, the general index of D-PIM estimated in this study was 1.71, insofar as the same index estimated on the basis of the questionnaire employed by Armendáriz and Contreras is 1.99.

3.9 GENERAL CONCLUSIONS AND POLICY RECOMMENDATIONS FOR THE MEXICAN STATES

From the public finance perspective, Mexican SNGs may be characterized in the following way:

- They receive approximately 8.5 percentage points of GDP in transfers from the federal government, an amount similar to that seen in Argentina (8.9). However, their own revenues only account for 0.7 percentage points of GDP (5.3 in the case of Argentina). For 2018, total federal public investment derived from the SNIP for states and municipalities represented 2.6 percent of GDP, and 1.8 percent when leaving aside the investments made by the state oil company, PEMEX. Added to 0.8 percent of GDP of the combined state and municipal PI (0.4 and 0.4, respectively), combined federal, state, and municipal non-oil investment is approximately 2.6 percent of GDP.
- The SNGs of Mexico occupy second place among OECD countries in terms of the scale of transfers as a percentage of total spending (25.7), while Mexico also has the second-highest vertical fiscal gap after Austria.
- Most PI executed by SNGs is financed from external sources, which makes them de facto managers of the federal government of Mexico, considerably weakening their own management autonomy.
- 80 percent of SNG spending is financed with federal resources, while their own revenues represent only 4 percent and borrowing stands at around 8 percent. This implies that borrowing is funding current spending, generally speaking, differentiated for each case.
- Average PI expenditure for all SNGs is 3.68 percent, ranging between 1 percent in some cases and 8 percent and 9 percent, as a maximum (INEGI, undated).

From the long-term perspective and also taking a public finance approach, Mexico's internal and external macro environment has considerably affected the PI behavior of SNGs. Its variability as a percentage of GDP (2000–14) is one of the highest in Latin America, only surpassed by Panama, Peru, Ecuador, and the Dominican Republic.²³ The global financial crisis of 2008–09 significantly affected investment behavior at the SNG level, comparable with the effect on the OECD countries but

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²³ These countries are particularly prone to variation in their state revenues bearing in mind the highly-concentrated nature of their sources of income.





even greater when bearing in mind an additional external shock: the drastic fall in demand for raw materials—mainly hydrocarbons and mining products—starting in the second half of 2014. These two factors considerably increased borrowing in the states and in the municipalities. This reduced the fiscal space and redeployed PI resources for debt repayment and current spending. These external shocks were accompanied by positive growth of federal transfers in real terms, which exacerbated the already significant vertical fiscal imbalance. Tax revenues only partially compensated for lost hydrocarbons revenues.

In summary, in all the SNGs, the upward trend in PI behavior began to decline in real terms starting in 2009, by billions of pesos and as a percentage of total spending, of GDP and per capita. In 1990, approximately 16 percent of total SNG spending was earmarked for PI; in 2017, that figure barely reached 3.5 percent.

3.9.1 INDEX OF DECENTRALIZED PUBLIC MANAGEMENT

Dimension 3 (Project implementation) scored by far the best result or average value, with a state average of 3.3, whereas the worst was Dimension 4 (Ex post project evaluation, audits and asset management), with a state average of 1.5. The other dimensions recorded similar averages (Dimension 1: 2.3; Dimension 2: 2.4; Dimension 5: 2.0).

In general, both the index and the dimensions that comprise it indicate efficiency gaps in three aspects: (i) access, both internal and external, to analytical inputs for decision making, such as conceptual and methodological frameworks, duly integrated and systematized project banks, databases, and quantitative and qualitative PI information, derived from each stage of the PI cycle; (ii) absence or deficiency of accountability mechanisms and tools (public consultations, citizen debates, and citizen participation); and (iii) no guaranteed use of ex ante and ex post evaluations by internal and external actors involved in the SNGs' PIM cycle.

The following section identifies the main findings from the responses to the 26 completed questionnaires:

- Mexican SNGs lack the minimum conditions for external control and evaluation: there is no public access to project banks, no accountability mechanisms, nor are project studies or analysis used as inputs for public consultations or citizen debate. Citizen participation mechanisms are practically nonexistent in ex post and ex ante evaluations. In general, it is difficult for civil society to strengthen or enhance the state public investment system.



- Mexican SNGs lack analytical PI capacities. Ex ante and ex post evaluations are weak and, when they do exist, are scarce. Institutional and technical inputs from evaluation policy are nonexistent or very deficient. For example, methodologies to prepare projects with a sector-based approach are weak or else not used.
- SNG influence on federal PI decision making is virtually nonexistent, and there is no federal support for building local government capacities.
- There are good internal controls (used as a correction mechanism), and the PI budget, including operating and maintenance costs, is integrated into the general budget.
- There is open competition in the adjudication of contracts, projects are delivered within budget, and time overrun in project execution is minimal. This is consistent with the results on the index, since the project execution dimension posts the best results.

3.9.2 RECOMMENDATIONS FOR IMPROVING SUBNATIONAL PUBLIC INVESTMENT MANAGEMENT IN MEXICO

The following is a list of the ten most important recommendations for improving PIM efficiency.

1. **Historical memory:** Use the knowledge accumulated from projects already implemented for new project development, execution, and impact analysis. Ensure the use of ex ante and ex post evaluations by both internal and external actors involved in the PIM cycle.
2. **Project banks:** Guarantee public access to duly updated and parameterized project banks (with both operational and strategic information).
3. **Accountability:** Create or strengthen accountability mechanisms and tools (for example, public consultations, citizen debates, and citizen participation).
4. **Risk management:** A PI policy is required that internalizes the mainly institutional and political risks that affect all or some of the components of the management cycle.
5. **Monitoring and evaluation:** Build or strengthen capacities in terms of different project monitoring modalities (cost-benefit, socioeconomic impact, etc.).





- 6. Vertical and horizontal coordination:** Use institutional mechanisms and technical tools to coordinate investments either with peers or with the federal government, ensuring feedback among the different levels of government.
- 7. Prioritization and the management cycle:** Strengthen PI prioritization methodologies based on ex ante evaluations and improve PI budget execution, taking into account the costs, the benefits and, especially, the impact of PI on people's well-being.
- 8. Short, medium and long term:** Establish the foundations for ensuring that investment projects are aligned from the strategic and financial standpoint and with planning and budgeting aspects over the short, medium, and long term.
- 9. Human resources:** Due to the nature of PI, design a human resources policy that replicates the best practices as well as the mechanisms that yield the best results in organizational and functional structure design.
- 10. Incentives:** At the institutional, the economic, and the individual levels, implement an incentives system that is linked with public investment at the operational and managerial levels.





Chapter 4

Main Challenges and
Recommendations for
Improving the Efficiency
of Decentralized Public
Investment Management

HUÁSCAR EGUINO
JUAN CARLOS AGUILAR



The studies carried out in Argentina and Mexico help to identify some of the common challenges posed by public investment management (PIM) for subnational governments: those that are related to the limitations of the institutional and policy framework (contextual factors) and those associated with PIM processes at the decentralized level (process factors).

4.1 INSTITUTIONAL AND POLICY FRAMEWORK LIMITATIONS

4.1.1 THE DISCONNECT BETWEEN STRATEGIC PLANNING AND RESOURCE ALLOCATION FOR PUBLIC INVESTMENT

The best D-PIM practices suggest that investment resource allocation should derive from a medium- or long-term planning process that, in turn, is consistent with the macro-fiscal framework. Making strategic planning the basis for the effective prioritization of investments poses a significant challenge for both national and subnational governments. In particular, SNGs need to strengthen their planning instruments to enable better investment programming. The disconnect between strategic planning and PI programming may be due to the fact that these processes do not always answer to the same governing body or responsible institution (Ministry of Planning or Ministry of Economy and Finance), or to the lack of appropriate technical instruments for relating these two areas or because there is no experience working with medium-term fiscal frameworks that facilitate multiannual investment programming. In these cases, SNGs should establish regulations, policies, and instruments that facilitate the integration or interoperability of the planning and investment processes and systems, even when they function independently.

4.1.2 LACK OF CLARITY IN ASSIGNING RESPONSIBILITIES TO DIFFERENT LEVELS OF GOVERNMENT

A further limitation is that the existing legal frameworks do not always clearly define institutional responsibilities among levels of government (national and subnational) which, in turn, hampers PIM. For example, the national level does not always fulfill its role as the leader, guide, and promoter of PIM capacities or, when it does, it does not always have sufficient capacity to influence the subnational level.

Likewise, in some cases decentralization and its territorial organization have generated significant problems of scale and conflicts of responsibility that affect the way SNGs have carried out their investments. Problems of scale hamper investment planning and implementation, since many projects could be implemented in a coordinated way between other spheres of government, or should simply not be carried out by SNGs at all. Moreover, the lack of a sufficiently clear framework of



authority means that SNGs make investments that are disconnected from the priorities defined by the sectors. This leads to duplication of effort or to SNGs eventually having to assume the operating and maintenance costs of infrastructure and services that were not prioritized in their own internal planning or budgeting processes.

4.1.3 LIMITATIONS OF SUBNATIONAL PUBLIC INVESTMENT FUNDING OR FINANCING MODELS

Another limitation observed in the case studies of Argentina and Mexico is that clear rules are not always in place to govern financial resource allocation from the national level to SNGs. This favors the discretionary use of resources and hampers planning, since SNGs can never be entirely certain about the resources they will have to implement their investment plans. Moreover, a portion of the resources received by SNGs comes earmarked for predetermined purposes or, in others cases, is executed directly from the national level, which affects efficient resource allocation. There is always a risk that the apparent institutional weakness of SNGs in managing their investment resources justifies maintaining this type of practice (deciding and even managing resources that, in theory, are within the purview of the subnational level). This creates a vicious circle in which capacities are not developed because there are insufficient resources, and resources are insufficient because institutional capacities are insufficient.

4.1.4 LACK OF CO-FINANCING POLICIES AND SUBNATIONAL PUBLIC INVESTMENT INSTRUMENTS

The lack of co-financing instruments for subnational PI limits SNG capacity to leverage investment resources among institutional levels and obstructs the completion of projects coordinated between different levels of government. The absence of national, sectoral, or territorial policies prevents the best use or optimization of the resources available for investment throughout the territory. In the studies of Argentina and Mexico, it has been impossible to identify efforts that foster the development of transparent co-financing schemes in line with national, sectoral, or territorial policy aims. These schemes should preferably be developed at the national level, based on medium-term development plans that clearly identify the public policies to be prioritized in resource allocation and the type of financing that they can obtain, within the framework of a co-financing policy with clear objectives and roles for the different institutional levels of government.





4.1.5 THE NEED FOR FISCAL RULES AT THE SECOND LEVEL OF GOVERNMENT

Fiscal rules are considered a determining factor of public spending (current spending and capital expenditure) composition. Therefore, their design must be fine-tuned. The introduction of fiscal rules at the international level, which began in the 1980s, has contributed to greater macroeconomic stability, reducing the likelihood of debt crises and procyclicality, although they have sometimes created undesired situations, thereby deepening the bias against PI. From that period on, the region began to make permanent efforts to maintain macroeconomic stability and fiscal discipline and sustainability by promoting fiscal stabilization policies. In these efforts, PI expenditure nearly always served as an adjustment variable, probably becoming one of the factors that has kept economic growth lower than it should be, given the region's potential. Toward the end of the 1990s, aggregate fiscal rules were introduced, with varying degrees of success. With a view to promoting stability over time and establishing an appropriate legal framework, many countries opted to approve a so-called fiscal responsibility law that, in general, imposes fiscal deficit ceilings and limits on the growth of public expenditure. Nonetheless, in both Argentina and Mexico, fiscal rules have yet to include conditions that protect PI expenditure in situations of financial stress or fiscal adjustment.

In recent years, various governments in the region have attempted to introduce conditions into their fiscal rules designed to protect PI expenditure in situations of financial stress or fiscal adjustment. These conditions are part of the so-called "dual condition fiscal rules" (Izquierdo, Pessino, and Vuletin, 2018: 305), which are based on fiscal rules added to those that include an additional condition to "ring fence" public investment, either direct or indirectly. Over time, this new situation should help to reverse the bias against PI in the region, since the countries that apply such rules de facto recorded higher growth and better controlled their economic fluctuations.



4.2 LIMITATIONS IN PROJECT MANAGEMENT PROCESSES

4.2.1 LACK OF APPROPRIATE INSTRUMENTS TO SUPPORT INVESTMENT PROJECT SELECTION

The weaknesses in strategic planning instruments limit SNG capacity to identify investment projects and establish clear criteria for their prioritization. National governments have failed to include systematic support for SNG strategic planning processes among its own strategic roles, an aspect that would enable greater consistency between development plans and investment programming, and establish a bank of projects ready to move into the preparation and execution phase whenever necessary. Likewise, heterogeneous criteria are widely used in project prioritization and selection, which means that the same project may or may not be prioritized depending on the criteria applied or on particular decisionmakers.

4.2.2 WEAKNESSES OF THE PROJECT CYCLE

The studies of Argentina and Mexico have confirmed that the main weaknesses of PIM processes are encountered at the beginning of the project cycle (ex ante evaluation) and upon completion of the cycle (evaluation of results and auditing).²⁴ The lack of standardized tools required for ex ante project evaluation is at the root of this significant limitation. It is well known that, despite the efforts made and the resources provided by international organizations, project formulation and evaluation skills have focused only on a few types of projects and on only a few SNG institutions and technical teams.

Similarly, review mechanisms are conspicuously absent, irrespective of the projects that, due to their size, impact, or cost, deserve more detailed assistance, preparation, and control. Again, the organization of these independent capacities should be regulated and supported from the national level.

A further weakness in the project cycle is the limited capacity to evaluate the results of completed investments. Results evaluation (ex post or impact) is important since it can verify achievement of project goals, evaluate the efficiency of project implementation, and gather the lessons learned that, in turn, will serve as feedback for the preparation of new projects. It is noteworthy that the culture of results evaluation has yet to be implanted among SNGs. They miss the opportunity to exploit the accumulated knowledge and the lessons learned from completed

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²⁴ These results are consistent with those found by the study by Armendáriz and Contreras (2016) for the central level.





projects. Weaknesses are also seen in the processes of auditing and accounting for resources earmarked for subnational public investment. Specifically, the opportunities offered by new technology to facilitate beneficiary participation in project audit and control processes have not been fully exploited. Carrying out monitoring from the beneficiaries' perspective is fundamental not only for ensuring the relevance and efficiency of projects implemented by SNGs, but also to legitimize actions taken at this level of government. The use of information and communication technologies (ICTs) in accountability processes is a further opportunity yet to be fully exploited by the SNGs studied.

4.2.3 SHORTCOMINGS IN SUBNATIONAL PUBLIC INVESTMENT INFORMATION SYSTEMS

The lack of information systems that are up to the task of managing the PI project cycle was evident when their use by SNGs was explored. In the places where these systems are functioning, it was observed that the efforts to develop them have not always been supported by the national level. This means that their operability, compatibility, and, eventually, their sustainability are not guaranteed. Again, national governments have failed to fulfill their role as governing body or to fully exploit the advantages that they enjoy (due to economies of scale) to create modern and flexible management systems. Many SNGs lack integrated or interoperable investment systems that both plan investments and manage specific projects. Moreover, development of any of these systems should be compatible with those existing at the national level. This which would facilitate their continuous improvement and support better decision making at all levels of government.

4.2.4 THE WEAKNESSES OF PROJECT BANKS

Project banks (both national and subnational) have not been sufficiently promoted as an instrument that can unite the investment projects of various institutional authorities in their different phases of preparation and create qualified demand for investment opportunities whenever resources are available. Establishing updated project banks at the subnational level, ideally linked to national project banks, would facilitate measurement of demand for PI resources, facilitate investment complementarity and coordination among government authorities, and build an appropriate project portfolio for elaborating financial requirement programs (programas de requerimiento de financiamiento, or PRF). An updated PRF is a very important instrument for negotiating and managing investment resources. This aspect has been largely ignored by most SNGs analyzed in this study.



4.2.5 HUMAN RESOURCE LIMITATIONS

Most SNGs lack sufficiently qualified personnel to manage investment project cycle processes and technical functions. Neither country studied has made systematic efforts from the national level to train existing human resources at the subnational level in the skills needed for PI process management. The national institutions responsible for training human resources should prioritize the formation of technical teams with the appropriate skills for operating national and subnational investment systems and to ensure fulfillment of the technical requirements associated with project identification, evaluation, and implementation processes. In turn, these teams could also help strengthen project culture at the subnational level by working as trainers and promoters.

4.2.6 FAILURE TO ADDRESS THE OPERATION AND MAINTENANCE OF INFRASTRUCTURES AND PUBLIC SERVICES

The majority of SNGs lack the technical and financial resources to manage the assets they possess. The efforts observed are limited to making an inventory of the institutions' existing physical assets and omit, for example, operation and maintenance of the works carried out.

To make better use of public resources, it is essential that PIM incorporate operation and maintenance. This theme is also related to inadequate investment planning and its disconnect from budgetary processes. It fails to adequately reflect the range of resources (both current and investment) that will be needed to manage the completed investments, which will demand recurrent funding when they enter into the operational phase to ensure correct operation and thereby avoid premature deterioration.





4.3 RECOMMENDATIONS FOR IMPROVING PUBLIC INVESTMENT MANAGEMENT AT THE DECENTRALIZED LEVEL

This section presents a set of recommendations for improving PIM, elaborated by the team of researchers who participated in this study and by representatives of the national and subnational governments of Argentina and Mexico. To facilitate presentation, They are organized into 11 themes that the team that participated in the project deem essential for improving decentralized public investment management (D-PIM) efficiency.

- 1. Policy and regulatory framework:** The regulatory framework that governs PIM and subnational public investment decentralization and management policies should be revised. Improving these aspects could lead to more efficient public resource allocation by defining clear responsibilities or establishing formal coordination and linkage schemes for investment initiatives that facilitate project execution on a scale commensurate with the SNG level of authority. It is also important that national governments expand or develop their role as governing bodies of PI by setting regulations and guidelines, providing pre-investment resources, and establishing co-financing schemes and other instruments to help SNGs improve their PIM.
- 2. Strategic planning:** Efficient planning, linked to medium-term macroeconomic frameworks that are compatible with multiannual investment frameworks, should inform the project identification and selection process and establish clear criteria for making the best use of pre-investment resources. In this vein, basic sector studies and strategic territorial plans are fundamental tools for identifying investment needs, exploring potential cooperation among different institutional levels, and developing the projects that can generate the most benefits. It is further recommended that strategic planning instruments should include emerging themes, such as developing resilient infrastructures that can help tackle the challenges of climate change.
- 3. Economies of scale:** The regulations established to govern the national PI system should enable and foster inter-institutional and intergovernmental coordination for large-scale projects for more efficient design and implementation. This should apply not only to the projects' technical and financial characteristics (joint or concurrent projects), but also to the use of new management instruments, such as multi-level investment programs or the possibility of sharing available D-PIM human resources.



4. **Project banks:** There should be only one project bank. It should be integrated with all levels of government and should contain the basic information demanded for all projects, irrespective of their type or size, as well as any additional information necessary in the case of more complex projects.

A project bank should also include all pre-investment studies that facilitated decision making and reduced preparation costs and times for new projects. Moreover, it must be easily accessible by the population, thereby encouraging participation in social monitoring and helping to canvas the reactions of possible interest groups.

5. **Ex ante evaluation and selection processes:** It is the national government's obligation to develop the instruments needed to ensure project quality by establishing regulations governing ex ante project evaluation and selection. These instruments must be placed at the disposal of the SNGs, alongside a program to build the necessary capacities to consolidate them in the sub-national authorities. Regardless of the results of the evaluations of projects that, owing to their scope, size or impact, deserve special consideration, the review should be carried out from outside of the department that proposes the project (an independent review). Moreover, small-scale or sector-based projects (to which cost-efficiency evaluation techniques should be applied) should be differentiated from the medium and large or sector-based projects (to which cost-benefit analysis techniques should be applied). Finally, the obligation to inform the legislature of the outcome of the evaluations of projects that compete for budget resources should be established by law, so as to provide additional information about their achievements and continuity.
6. **Implementation of investment projects:** Although this dimension generally received good evaluations in the D-PIM index used in this study, it could be improved by strengthening the competitive processes between contractors and the transparency of procurement and contracting processes. Similarly, introducing information systems for integrated project execution monitoring should be encouraged. This would facilitate monitoring and achievement of the established delivery dates, timely review of any deviations from the agreed budget, and greater involvement by potential beneficiaries in monitoring projects throughout implementation.
7. **Ex post evaluation and monitoring:** The evaluation of project results stage should be supported and strengthened to verify achievement of the initial objectives, evaluate the efficiency of project implementation, and gather the lessons learned that feed into new project preparation. Ideally, the life cycle





of all projects should end with a results evaluation (ex post or impact) that would establish whether the development objectives and the expected goals were achieved. However, in the initial phase and until a culture of evaluation has been fully developed, ex post evaluations for projects of a certain scale should be made mandatory. Depending on the desired institutional model, these evaluations might remain the responsibility of duly accredited independent agencies. Project design should also include the resources needed to ensure compliance with this key stage in the search for better PI quality.

- 8. Human resources:** PI system maintenance needs the support of training programs of different levels of complexity, geared toward civil servants at all levels of government. Given the time limitations faced by staff responsible for investment management, online training models should take precedence over in-person training. Such programs could be developed with the participation of universities and private institutions, incorporating in turn the necessary incentives to retain the most highly qualified human resources at the subnational level. Likewise, mechanisms should be established that permit access to technical assistance or support systems and online consultations for complex project evaluation for SNGs that lack specialized teams and require this kind of assistance.
- 9. Use of new technologies:** PIM offers a series of opportunities for exploiting information technologies (big data, artificial intelligence, and other modern technologies for the detection of needs or complaints, project georeferencing, etc.) that can help, for example, reveal investment needs, monitor the different stages of the project cycle online, or provide information for the processes of accountability. In theory, such technologies should permit interconnection and linkage between different levels of government and with other complementary management systems.
- 10. Improve the public investment governance framework:** This would reduce the fragmentation of responsibilities, promote horizontal and vertical cooperation, and build capacities at the subnational level. Fully exploiting the negotiation and agreement opportunities among different institutional levels is a central element of project success and of achieving more efficient D-PIM. Coordination or cooperation among levels of government is essential in identifying investment opportunities and reducing project bottlenecks, managing joint initiatives, guaranteeing sufficient financial and human resources, and building trust among the main actors involved in D-PIM. The development of tools or institutional arrangements that facilitate better intra- and inter-governmental coordination and cooperation is a pending task in the countries studied.



11. Integrated vision of the PI process: There is a noticeable tendency to execute the phases of investment management in a fragmentary way that is sometimes disconnected from other public financial management systems. The following elements should be considered phases of the same process: (i) project identification, (ii) project evaluation, (iii) the decision to invest based on budget resource availability, (iv) project execution through appropriate application of the relevant procurement processes, (v) monitoring and control of all investment-related aspects during the execution phase, (vi) incorporation of financial information about the project by government accounting, (vii) appropriate and orderly project closure, (viii) impact evaluation to gather the main lessons learned from the completed process, (ix) estimation of the resources needed to ensure smooth operation, and (x) providing accountability through existing channels. However, for this to happen, it is essential that PI systems are better coordinated with the systems of planning, budget, procurement and contracting, and evaluation. This task, which some years ago seemed merely an aspiration, today has increasing chances of success thanks to the new ICTs and the growing recognition of the need to modernize PI governance, fostering more consensus and better coordination in the use of public resources.





References

- Afonso, A. and M. St. Aubyn. 2008. Macroeconomic Rates of Return of Public and Private Investment: Crowding-In and Crowding-Out Effects. Working Paper Series No. 864. Washington, DC: European Central Bank.
- Agosto, W. and P. Carreras. 2018. Índice de transparencia presupuestaria provincial. 2017 Edition. Public Policy Paper No. 198. Buenos Aires: CIPPEC.
- Aktiva Servicios Financieros. 2017. Propuesta de guía metodológica de planeación y gestión de proyectos de infraestructura para las entidades federativas. Mexico City: Centro de Estudios de las Finanzas Públicas de la Cámara de Diputados.
- Alfonso, M. 2015. La descentralización y la autonomía de los municipios en el marco del Estado Unitario Colombiano. Nueva Granada Military University.
- Armendáriz, E. and E. Contreras. 2016. El gasto de inversión pública en América Latina: cuánto y cuán eficiente? (Not yet published). Paper presented at the VI Conference on Public Investment System Management in Latin America and the Caribbean. Costa Rica.
- Armendáriz, E., E. Contreras, S. Orozco, and G. Parra. 2016. La eficiencia del gasto de inversión pública en América Latina. Paper presented at the XXI International Congress of CLAD on State Reform and Public Administration. Santiago, Chile (Vol. 8).
- Arslanalp, S., F. Bornhorst, S. Gupta, and E. Sze. 2010. Public Capital and Growth. IMF Working Paper. Washington, DC: International Monetary Fund.
- Barreix, A. and L. F. Corrales. 2019. Reglas fiscales resilientes en América Latina. Washington, DC: Inter-American Development Bank.
- Belli, P., J. R. Anderson, H. N. Barnum, J. A. Dixon and J.-P. Tan. 2001. Economic Analysis of Investment Operations: Analytical Tools and Practical Applications. Washington D. C.: World Bank.
- Buffie, E., A. Berg, C. Pattillo, R. Portillo and L.-F. Zanna. 2012. Public Investment, Growth and Debt Sustainability: Putting Together the Pieces. IMF Working Papers.
- Cachanosky, I. 2012. Eficiencia técnica, eficiencia económica y eficiencia dinámica. *Revista Europea de Economía Política*, 9(2): 51-80.
- Capello, M. 2018. Elaboración de propuesta metodológica para la evaluación de la gestión de la inversión pública descentralizada y plan de acción para su implementación. Paper prepared for the IDB. Washington, DC: Inter-American Development Bank.
- Capello, M. and H. Eguino. 2019. Inversión pública en provincias de Argentina: ¿Cuán eficiente es su gestión? VII Jornadas Iberoamericanas de Financiación Local (JIFL).
- Capello, M. and L. Iglesias. 2019. XXII Seminar on Fiscal Federalism, Torcuato Di Tella University. Los determinantes del empleo público en las provincias argentinas. Buenos Aires: Argentina. Unpublished.
- Carneiro, F. G. and L. Garrido. 2015. New evidence on the cyclicity of fiscal policy. Policy Research Working Paper. No. WPS 7293. Washington D. C.: World Bank.
- Carranza, L., C. Daude and Á. Melguizo. 2011. Public Infrastructure Investment and Fiscal Sustainability in Latin America: Incompatible Goals? *Journal of Economic Studies*. 41. 10.1108/JES-03-2012-0036.



References

- Carvalho, E. and S. Tomás. 2016. Ahorrar para desarrollarse: cómo América Latina y el Caribe puede ahorrar más y mejor. Inter-American Development Bank.
- Castillo, M. 2017. Taller Inversión Pública Descentralizada: intercambios sobre desafíos de gestión y buenas prácticas. 29 and 30 November 2017. Washington, D. C.: Inter-American Development Bank.
- Chakraborty, C. and E. Dabla-Norris. 2009. The Quality of Public Investment. IMF Working Papers 09/154. Washington D. C.: International Monetary Fund.
- CONAPO. (Undated). Consejo Nacional de Población. Taken from: Proyecciones de la Población de México y de las Entidades Federativas, 2016–2050. Available at : <https://datos.gob.mx/busca/dataset/proyecciones-de-la-poblacion-de-mexico-y-de-las-entidades-federativas-2016-2050>.
- Currístine, T. and J. Pereira. 2018. Diálogo a fondo: Cómo mejorar la eficiencia de la inversión pública en Brasil. Available at: <https://blog-dialogoafondo.imf.org/?p=10463>.
- Dabla-Norris, E., J. Brumby, A. Kyobe, and C. Papageorgiou. 2011. Investing in Public Investment: An Index of Public Investment Efficiency. IMF Working Paper WP/11/37. Washington D. C.: International Monetary Fund.
- ECLAC. 2018a. Gastos e ingresos públicos en América Latina desde fines de los años ochenta hasta 2015. Tendencias observadas, desafíos actuales y lineamientos de reformas. Santiago, Chile: Economic Commission for Latin America and the Caribbean.
- ECLAC. 2018b. Fiscal Panorama of Latin America and the Caribbean. LC/PUB.2018/4-P. Santiago, Chile: Economic Commission for Latin America and the Caribbean.
- ECLAC. 2019. Fiscal Panorama of Latin America and the Caribbean. LC/PUB.2019/8-P. Santiago, Chile: Economic Commission for Latin America and the Caribbean.
- Edward, B., A. Berg, C. Pattillo, R. Portillo and L.-F. Zanna. 2012. Public Investment, Growth and Debt Sustainability: Putting Together the Pieces. IMF Working Paper. Washington D. C.: International Monetary Fund.
- Eguino, H. 2017. ¿Cómo medir la eficiencia de la gestión de la inversión pública? Desafíos metodológicos a nivel subnacional. Taller Inversión Pública Descentralizada: intercambios sobre desafíos de gestión y buenas prácticas. Washington, D. C.: Inter-American Development Bank.
- Farfán Mares, G. 2019. Eficiencia de gestión de la inversión pública en Gobiernos Subnacionales de México.
- Feld, L., T. Baskaran, and J. Schnellenbach. 2016. Fiscal Federalism, Decentralization and Economic Growth: A Meta-analysis. *Economic Inquiry*. 54(3): 1445–1463.
- Fretes Cibils, V. and E. Armendáriz. 2017. Abre los ojos: América Latina necesita gastar mejor. Available at: <https://blogs.iadb.org/gestion-fiscal/es/eficiencia-en-la-gestion-de-la-inversion-publica/#comments>.
- García Lopez, R. and M. García Moreno. 2010. Managing for Development Results: Progress and Challenges in Latin America and the Caribbean. Washington D. C.: Inter-American Development Bank.
- IDB (Inter-American Development Bank). 2016. Modernización de los Sistemas de Gestión Financiera Pública a nivel provincial en Argentina. Washington D. C.: Inter-American Development Bank.





- IMF (International Monetary Fund). 2015a. *Perspectivas de la economía mundial: Crecimiento dispar; factores a corto y largo plazo*. Washington DC: IMF.
- . 2015b. *Making public investment more efficient*. Washington, DC: IMF.
- . 2018. *Public Investment Management Assessment – Review and update*. Washington, DC: IMF.
- . (Undated). IMF DATA Access to Macroeconomic & financial data. Taken from Government and Finance Statistics. Available at: <https://data.imf.org/?sk=a0867067-d23c-4ebc-ad23-d3b015045405>.
- INDEC (Instituto Nacional de Estadística y Censos) 2010. *Censo nacional de población, hogares y viviendas 2010: censo del bicentenario, resultados definitivos*. Buenos Aires: INDEC.
- INEGI (Instituto Nacional de Estadística y Geografía). 2018a. *Encuesta Nacional de Calidad e Impacto Gubernamental (ENCIG) 2017*. Mexico, DF, Mexico: INEGI.
- . 2018b. *Sistema de Cuentas Nacionales de México: fuentes y metodologías: año base 2013*. Mexico, DF, Mexico: INEGI.
- . (Undated). *Instituto Nacional de Estadística, Geografía e Informática*. Taken from: public, state and municipal finances. Available at: <https://www.inegi.org.mx/programas/finanzas/>.
- Izquierdo, A., C. Pessino, and G. Vuletin. 2018. *Mejor gasto para mejores vidas: Cómo América Latina y el Caribe puede hacer más con menos*. Washington, DC: Inter-American Development Bank.
- Izquierdo, A., J. Puig, C. Végh, and G. Vuletin. 2018. *On Recent Trends and Determinants of Public Spending Composition*. Washington, DC: Inter-American Development Bank. Unpublished.
- Ke-young, C., B. J. Clements, D. P. Hewitt, S. Lugaresi, J. A. Schiff, L. Schuknecht and S. Gerd. 1995. *Unproductive Public Expenditures, A Pragmatic Approach to Policy Analysis*. Pamphlet Series, No. 48. Fiscal Affairs Department. Washington, DC: International Monetary Fund.
- Lam, W. F. 2005. *Coordinating the Government Bureaucracy in Hong Kong: An Institutional Analysis*. *Governance*. 18: 633–54.
- Mendoza, E. and D. Solís. 2009. *¿Cómo construir una mística intergubernamental en la política social? Análisis de cuatro experiencias latinoamericanas*. *Revista del CLAD Reforma y Democracia*. 43: 27–62.
- Ministry of Economy. (Undated). *Dirección Nacional de Asuntos Provinciales*. Available at: www.minhacienda.gob.ar.
- Ministry of Education, Culture, Science and Technology. 2019. *Anuario Estadístico Educativo 2018*. Buenos Aires, Argentina: Ministry of Education, Culture, Science, and Technology.
- Oates, W. E. 1993. *Fiscal Decentralization and Economic Development*. *National Tax Journal*. 46: 237–243.
- . 1999. *An Essay on Fiscal Federalism*. *Journal of Economic Literature*, 37: 1120–49.
- OECD (Organisation for Economic Co-operation and Development). 2008. *Handbook on constructing composite indicators: methodology and user guide*. Paris: OECD.



References

- . 2014. Recommendation of the Council on Effective Public Investment across Levels of Government. OECD Council.
- . 2015. Planificación e inversión en infraestructuras en los distintos niveles de gobiernos: retos actuales, experiencias y posibles soluciones. OECD and Committee of the Regions. European Union.
- . 2016a. Panorama de las Administraciones Públicas: América Latina y el Caribe 2017. Paris: OECD. Available at: <http://dx.doi.org/9789264266391-es>.
- . 2016b. Inversión pública más eficiente en Colombia - Mejorar la gobernanza multinivel: Multi-level Governance Series. Paris: OECD.
- OECD/CAF/ECLAC. 2018. Perspectivas económicas de América Latina 2018: Repensando las instituciones para el desarrollo. Paris: Organization for Economic Cooperation and Development. Available at: <http://dx.doi.org/10.1787/leo-2018-es>.
- Párraga, R. 2016. Incidencia económica de proyectos de inversión pública sectorial en el PIB de Bolivia (periodo 2000-2013). *Revista Estudios de Políticas Públicas*, 1(2): 17-33.
- Ponce Sono, S. S. 2013. Inversión pública y desarrollo económico regional. Tesis para optar el Grado de Magíster en Economía. Lima, Peru: Pontifical Catholic University of Peru.
- Porto, A., C. Pineda Mannheim, and H. Eguino. 2018. Descentralización y autonomía fiscal subnacional en América Latina: panorama comparado de Brasil, Colombia, México y Perú. Fiscal Management Division. Washington DC: Inter-American Development Bank.
- Rajaram, A., T. M. Le, N. Biletska, and J. Brumby. 2010. A Diagnostic Framework for Assessing Public Investment Management. Policy Research Working Paper No. WPS 5397. Washington, DC: World Bank.
- Sánchez-Juárez, I. and R. M. García Almada. 2016. Public Debt, Public Investment and Economic Growth in Mexico. *International Journal of Financial Studies*, 4(2): 1-14.
- Sánchez-Juárez, I. and A. Srithongrung. 2015. Fiscal Policies and Subnational Economic Growth in Mexico. *International Journal of Economics and Financial Issues*. 5(1): 11-15.
- SHCP (Secretaría de Hacienda and Crédito Público de México). Undated. Taken from: Estadísticas Oportunas de Finanzas Públicas. Available at: http://www.shcp.gob.mx/POLITICAFINANCIERA/FINANZASPUBLICAS/Estadisticas_Oportunas_Finanzas_Publicas/Paginas/unica2.aspx.
- Ter-Minassian, T. 2020. Intergovernmental Fiscal Cooperation and Subnational Revenue Autonomy, Discussion Paper, IDB-DC-748. Washington, DC: Inter-American Development Bank.
- Urrunaga, R. and C. Aparicio. 2012. Infraestructura y crecimiento económico en el Perú. *Revista Comisión Económica para América Latina y el Caribe (ECLAC)*. Pps. 157-77.





Annex 1

Methodology and Questionnaire

INTRODUCTION²⁵

The review of the methodologies used in the analysis of public investment management (PIM) and the study of the socioeconomic, institutional, and legal characteristics found in each territory constitute fundamental inputs in defining recommendations for a methodological approach and determining the survey instrument, in line with the objectives proposed for this study. Moreover, bearing in mind that this work focuses on the subnational level, it is also important to analyze the effects on government coordination throughout the process.

To build an index of decentralized public investment management (D-PIM) efficiency, a bibliographical review of the instruments developed to measure it, particularly those related to management at the decentralized level, was conducted. First, the contributions that analyze PIM from the project cycle perspective were assessed, such as the effective public investment framework (Rajaram, Le, Biletska and Brumby, 2010), the principles of effective public investment among levels of government and the Public Investment Management Assessment (PIMA) (IMF, 2015b). The methodologies that seek to measure the gaps were also considered, as in the case of the PIM index of efficiency (Dabla-Norris, Brumby, Kyobe, and Papageorgiou, 2011) and the index of PIM efficiency applied to LAC (Armendáriz, Contreras, Orozco, and Parra, 2016). This also preserves the logic of the entire investment cycle analyzed from the standpoint of “stages” or “processes” that correspond to the logical steps that PIM must follow in practice. Special consideration of these methodologies and their associated questionnaires thus enables this study to develop a set of key questions for the analysis of PIM at the subnational level and the challenges with respect to the national jurisdiction.



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25 This annex was prepared by Huáscar Eguino and Hugo Menéndez.

Moreover, thanks to the incorporation into the analysis of the evolution of public investment (PI) behavior and the legal and institutional framework, new variables can be included based on evidence from the significant challenges often faced by LAC countries, which can have a significant influence on the outcome in terms of PIM quality and efficiency in the region. Finally, as the subject is D-PIM, special attention is also given to government coordination. Specifically, the proposed index incorporates sub-dimensions of analysis that are not generally found in the literature. They are: cooperation between national, provincial, and municipal governments (Sub-dimension 5.7 of the proposed index) and the relationship between investment funding, fiscal responsibility, and PI cycle management policy from a decentralized perspective (Sub-dimension 5.8 of the proposed index). Therefore, one of the main contributions of this paper is to propose an integrated index for evaluating PIM from a decentralized perspective of analysis or, in other words, considering the role of subnational governments in this area.

REVIEW OF THE EXISTING METHODOLOGY

A DIAGNOSTIC FRAMEWORK FOR ASSESSING PUBLIC INVESTMENT MANAGEMENT (RAJARAM ET AL., 2010)

In this framework of evaluation, proposed by the World Bank (Rajaram, Le, Biletska, and Brumby, 2010), eight “must be/must have” features are identified for integrated PI management that can support decision making and investment execution and maintenance. Each one represents a step in the project life cycle. By identifying the strengths and weaknesses associated with each one, governments can make more effective modifications and improvements to their systems.

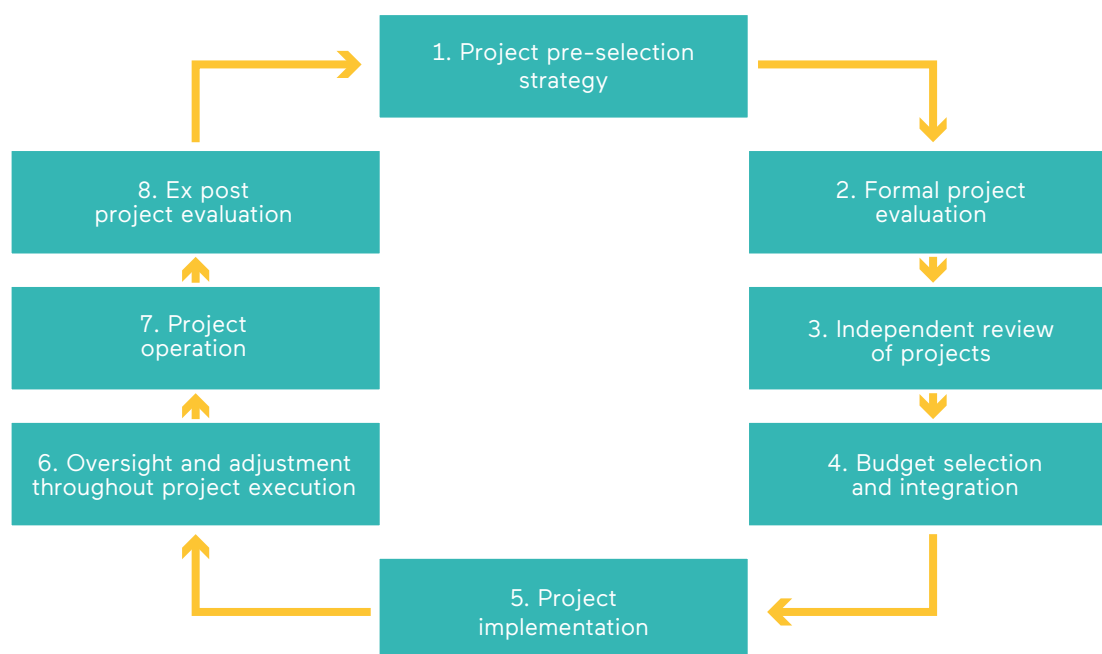
Essentially, this consists of a comparative evaluation exercise, which aims to help identify current strengths and weaknesses, develop a shared understanding of the reform efforts that should be prioritized, and establish a baseline against which future progress can be measured. The following section briefly describes the steps and sub-areas of study addressed by the methodology through a proposed questionnaire containing diagnostic questions that enable evaluation of PI efficiency.

Figure A1.1 presents the sequence and interrelation between the eight “must be/must have” features of PIM systems, according to the World Bank paper.





Figure A1.1. Characteristics of an Integrated Public Investment Management System



Source: Authors' elaboration based on Rajaram et al. (2010).

PRINCIPLES OF EFFECTIVE PUBLIC INVESTMENT ACROSS LEVELS OF GOVERNMENT

According to the toolkit provided by the work of the OECD (2014) for this type of study, the impact of PI depends to a large extent on how it is managed by governments. In this sense, three systematic challenges for multilevel PI governance are defined: (i) challenges of coordination (intersectoral, inter-jurisdictional, and intergovernmental), (ii) challenges of capacity (investment design and implementation strategies), and (iii) challenges of the macro conditions, among which best practices for budgeting, procurement, and regulatory quality stand out as an integral part of a successful investment process. This process must also be defined in a comprehensive and coordinated manner across different levels of government.

The recommendations are organized around three fundamental pillars, which contain 12 principles applicable to national, regional, and local governments, providing them with a toolkit for implementation of the assessment (based on the evaluation of indicators) and advice for applying the recommendations in practice. These pillars and principles are summarized in Figure A1.2.



Figure A1.2. Pillars of an Integrated Public Investment Management System

PILLAR A COORDINATION BETWEEN LEVELS OF GOVERNMENT AND POLICIES	PILLAR B BUILD CAPACITIES AND PROMOTE LESSON-LEARNING AT ALL LEVELS OF GOVERNMENT	PILLAR C GUARANTEE THE INSTITUTIONAL AND REGULATORY FRAMEWORK AT ALL LEVELS OF GOVERNMENT
• Principle 1: Integrated investment strategy • Principle 2: Adopt effective coordination instruments between the different levels of government • Principle 3: Horizontal coordination between sub-national governments to invest on a significant scale	• Principle 4: Ex ante evaluation of long-term impacts and risks for PI • Principle 5: Involve stakeholders at all points of the cycle • Principle 6: Mobilize private sector actors and financing agencies • Principle 7: Strengthen the experience of the civil servants and institutions involved • Principle 8: Focus on results and promote experience-based learning	• Principle 9: Develop a suitable fiscal framework • Principle 10: Demand solid and transparent financial management • Principle 11: Promote transparency and the strategic use of public procurement • Principle 12: Achieve quality and consistency in normative and regulatory frameworks

Source: Authors' elaboration based on OECD (2014).

The main strength of this methodology lies in the importance it attributes to analysis from a consolidated perspective, across different levels of government, highlighting the role and the importance of subnational governments in consolidating the best practices that help achieve the positive externalities of efficient PIM.

PUBLIC INVESTMENT MANAGEMENT ASSESSMENT – PIMA

This methodology (IMF, 2015) begins by arguing that the differences between countries with respect to the quality of their infrastructure and economic performance are measured by a wide variety of factors. These include, among others, the level of economic development, the structural characteristics of the economy, the quality of governance, geography, and the climate. However, it is noteworthy that the recent literature highlights the significance of the part played by institutional, legal, and procedural PIM arrangements. Thus, certain PIM best practices could help to narrow the efficiency gaps that exist between countries. This would, however, require continuous effort and the development of new skills and capacities, which underlines the importance of investing in PIM.



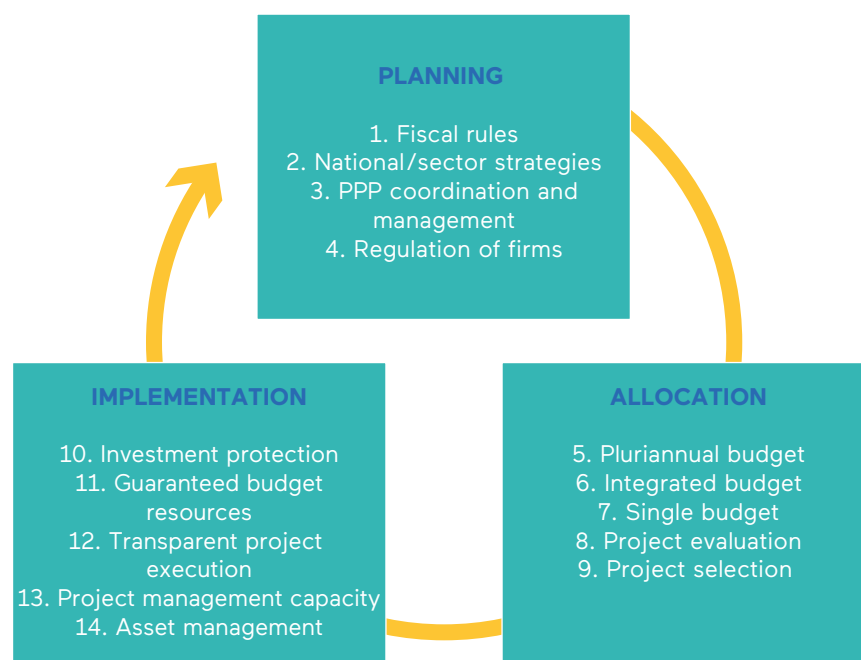


For all of the above-cited reasons, the IMF has developed a PIM evaluation methodology that analyzes 15 indicators or key characteristics for planning, allocating, and implementing PI. These indicators represent a subset of a broader framework of budgetary aspects that govern the process of financial management in the public sphere. In particular, the PIMA includes elements similar to other methodologies such as the one developed by the World Bank (Rajaram, Le, Biletska, and Brumby, 2010) or the IMF itself (Dabla-Norris, Brumby, Kyobe, and Papageorgiou, 2011), which will be further examined below. However, according to its authors, the PIMA provides the most comprehensive evaluation of the PI decision-making process throughout the three key stages:

- **Step 1:** Planning for sustainable levels of investment in the public sector
- **Step 2:** Efficient allocation of PI among projects and sectors
- **Step 3:** Appropriate project implementation within the stipulated budget and time frames

In these stages, the degree of effective achievement is assessed according to key characteristics, which are explained more fully in Figure A1.3.

Figure A1.3. Stages and Indicators of Public Investment Management (PIMA - IMF)



Source: Authors' elaboration based on IMF (2015b).

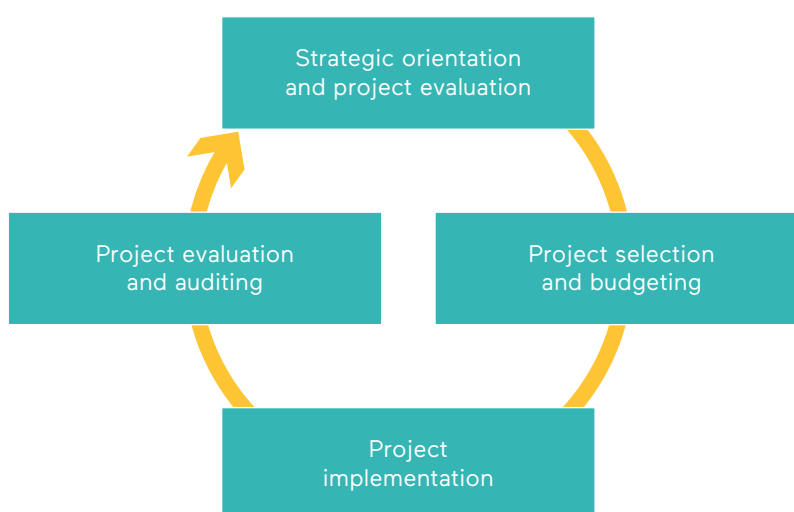
Based on this methodology, the results of these indicators are classified into three possible responses: not in place, partly in place, or fully in place. According to the number of key characteristics achieved, countries are given a PIMA rating that ranges from 0 (without key characteristics in the territory) to 10 (the 45 characteristics evaluated all scored the maximum rating). This evaluation yields a comprehensive measurement for PIM analysis and evaluates elements related to macro-fiscal frameworks, integration of investment planning with the medium-term budget, coordination of public investment across levels of government, and private sector participation in public infrastructure provision.

PUBLIC INVESTMENT MANAGEMENT INDEX - PIMI

This methodology (Dabla-Norris et al., 2011), developed by breaking down the PI cycle into its different stages and determining the desirable attributes in each of them, is one of the first indices of PIM efficiency ever developed. It follows evaluation criteria for process indicators and, on this basis, generates a metric that is comparable between countries, meaning that other PIM rankings can be elaborated in different latitudes.

In this work, the indicator is presented in four relevant dimensions, defined in relation to investment projects (Figure A1.4).

Figure A1.4. Dimensions Included by Dabla-Norris et al. (2011) (PIMI – IMF)



Source: Authors' elaboration based on Dabla-Norris et al. (2011).





The dimensions contain 17 sub-dimensions under which questions are formulated whose responses are scored between 0 and 4. Based on these responses, a simple average is calculated for each sub-dimension and, using the same criterion, a global score is obtained for each aggregate dimension and for the resulting indicator itself. Table A1.1 presents the 17 sub-dimensions included in the methodology.

Table A1.1. Dimensions and Sub-dimensions Included by Dabla-Norris et al. (2011)

DIMENSION	SUB-DIMENSION
STRATEGIC ORIENTATION AND PROJECT EVALUATION	1. Nature of strategic orientation and availability of sector-based strategies.
	2. Transparency of evaluation standards.
	3. Observed conduct of ex ante evaluations.
	4. Independent review of the evaluations carried out.
PROJECT SELECTION AND BUDGETS	5. Existence of a medium-term planning framework and its integration with the budget.
	6. Inclusion in the budget of projects financed with external resources.
	7. Integration of both current and investment expenses in the budget.
	8. Nature of the selection and funding of projects approved by legislative bodies, including by committees.
	9. Public access to essential fiscal information.
PROJECT IMPLEMENTATION	10. Degree of open competition for contract adjudication.
	11. Nature of any contracting-related complaint mechanism.
	12. Flows of funding throughout budget execution.
	13. Existence and effectiveness of internal controls, such as commitment controls.
	14. Effectiveness of the internal audit system.
PROJECT EVALUATION AND AUDITING	15. Degree of ex post evaluation.
	16. Degree to which external audits are carried out on time and analyzed by the legislative branch.
	17. Maintenance of records of assets and/or asset values.

Source: Authors' elaboration based on Dabla-Norris et al. (2011).



INDEX OF PUBLIC INVESTMENT MANAGEMENT EFFICIENCY IN LATIN AMERICA AND THE CARIBBEAN

This work (Armendáriz et al., 2016) is based on the consideration that the methodology proposed by Dabla-Norris et al. (2011) does not include the evaluation of indicators that cut across all aspects of the PIM process. Therefore, Armendáriz et al. (2016) decided that while the four original dimensions are necessary, a new dimension should also be added, which they called “General characterization of the public investment cycle. It included five new sub-dimensions: (i) operational descriptions, (ii) the role of legislation, (iii) appropriate human resources, (iv) public scrutiny/access to information in general, and (v) support systems. As can be seen, this new dimension is based on indicators that relate to institutional variables and to the behavior of the system in aspects that are common throughout all stages of the PI cycle. This new dimension, which incorporates quantitative data, acquires added significance when constructing indicators that are comparable between countries.

Furthermore, the authors analyze the sources of information²⁶ available for estimating the PIMI in Latin American and Caribbean (LAC) countries, identifying important difficulties: there is insufficient information about PI, geographical coverage is limited,²⁷ and/or the information is outdated. Based on these limitations, Armendáriz et al. (2016) propose adapting the questionnaire put forward by Dabla-Norris et al. (2011) and including the aforementioned fifth dimension. This questionnaire is addressed to the managers of the national public investment system in each country. Specifically, the authors propose two new sub-dimensions within the other dimensions already included. One of them is found under “Strategic guides and project evaluation” and is called “Project preparation and evaluation methodologies/ social prices.” The other, under “Project selection,” is called “Selection criteria.” The authors’ methodological proposal for building the PIM index is summarized in Table A1.2.

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26 The sources used include: Public Expenditure and Financial Accountability (PEFA); Public Expenditure Review (PER); Country Procurement Assessment Report (CPAR, World Bank); International Budget Practices Database (OECD), and Budget Institutions Database and PIM (World Bank).

27 For example, for the cases regarding information about Chile, Mexico, Nicaragua, or Uruguay.





Table A1.2. Dimensions and Sub-dimensions Proposed by Armendáriz et al. (2016) (PIMI-ALC)

DIMENSION	SUB-DIMENSION
STRATEGIC GUIDES AND PROJECT EVALUATION	Strategic guide
	Project preparation and evaluation methodologies/ social prices
	Project evaluation
PROJECT SELECTION	Integration with the budget
	Role of legislation
	Public scrutiny
	Selection criteria
PROJECT IMPLEMENTATION	Adjudication
	On-time project completion
	Internal monitoring and audits
EX POST PROJECT EVALUATION, AUDITS, AND ASSET MANAGEMENT	Project evaluation, audits, and asset management
GENERAL CHARACTERIZATION AND COORDINATION OF PUBLIC INVESTMENT	Role of legislation
	Appropriate human resources
	Public scrutiny/access to information in general
	Support systems

Source: Authors' elaboration based on Armendáriz et al. (2016).

Finally, to design the survey itself, the work takes into consideration the questions put forward in other works, presenting and evaluating them comparatively and with a high degree of detail in light of the objectives of the proposed survey. A further interesting aspect of this work is that it incorporates questions about the relevance of each dimension (as well as the questionnaires aimed at evaluating the PI efficiency index). The aim is to establish a weighting in accordance with the importance of each dimension considered, instead of applying a uniform weighting.



QUANTITATIVE AND INSTITUTIONAL ANALYSIS OF DECENTRALIZED PUBLIC INVESTMENT

In addition to the valuable exercise of reviewing the existing methodology, this study seeks to analyze aspects that are crucial to achieving efficient D-PIM. To put this into context and thereby complement the results of the D-PIM efficiency index proposed in the following section, it is important to present the socioeconomic and productive variables of the country being analyzed, as well as the evolution of PI and other significant fiscal variables from previous years, at both the national and the subnational levels. It is also necessary to present a brief description of the legal and institutional environment at the intermediate government level in which D-PIM takes place. The variables could include the government regime and the structure of the public sector, the number of intermediate government units (IGU), the regulations governing the operation of government administration, the organizations responsible for PIM and the powers of the IGU with regard to PI, as well as its relationship with the central government in the investment cycle process and its financing mechanisms.

INTERGOVERNMENTAL COORDINATION AND FISCAL POLICY FROM THE DECENTRALIZED MANAGEMENT PERSPECTIVE

One recurring theme that surrounds the PIM decision-making framework is intergovernmental coordination, which, in turn, requires an organizational and institutional structure. If an organizational dynamic is imposed, it will be more costly to implement and its operation more fragile, whereas if it emerges and is adopted, partly due to the interest of those involved, the necessary incentives will be created to guarantee and strengthen its function as a regulatory element of collective action, as well as being less expensive to implement (Mendoza and Solís, 2009). Lam (2005) likewise argues that reciprocity and trust are basic and essential mechanisms for guaranteeing intergovernmental coordination, which is based on the theories of federalism and decentralized government. In this way, intergovernmental coordination can be considered a rational instrument of the State for developing decentralization, since it enables authority to be shared or distributed. However, in line with Mendoza and Solís (2009), when decentralization is accompanied by new problems that derive from inefficient coordination in public actions and a loss of coherence in the face of weak coordination and cooperation capacity across levels of government, a return to centralization may become tempting.

The strategic role played by coordination in the successful and lasting development of decentralization processes, which is a characteristic of federal





systems, therefore becomes clear. However, to effectively achieve results, there must be synergies and interdependence between them. The PIM quality index proposed in this study therefore enables the evaluation of aspects specifically linked to cooperation between different levels of government (national, provincial, and municipal), as well as consideration of the fiscal and administrative aspects and relations of the PI cycle that may involve and interrelate these different jurisdictional levels.

With regard to cooperation across levels of government for PI planning and execution, the study aims to detect whether subnational governments are legally entitled to perform these tasks, whether they have done so in the recent past, and in what form. It also explores whether there are projects co-financed by two levels of government and whether national programs exist (intermediate governments) to build capacities or facilitate evaluation of investments made by intermediate governments (municipalities). The questionnaire also includes questions that explore the characteristics of the capital transfers received by intermediate and municipal governments, paying particular attention to how they are defined (the use of objective criteria and the degree of discretionality, among other aspects).

The questionnaire also attempts to detect the capacity of subnational governments to generate their own resources that can be used for PI, the amount that such investment has reached in recent years, and the existence or lack of fiscal rules that seek to regulate the public finances of subnational governments, as well as to generate incentives for PI.

Finally, the study evaluates subnational government capacity and efforts with regard to countercyclical fiscal policy. This theme is included as macroeconomic instability has been one of the main characteristics of many Latin American economies in recent decades, and one of the major causes of its weak economic performance. Macroeconomic volatility distorts and hampers decision making at the micro level. When accompanied by severe crisis, it can lead to episodes of legal uncertainty that affect investment over the long term.

One of the main, but not the only, causes of macroeconomic volatility is often a markedly procyclical fiscal policy, especially on the public expenditure side. It often accompanies an economic boom with significant rises, while acting asymmetrically during recessions.



Although centralized and uniform implementation of a countercyclical fund in a federal country has the clear advantage of increasing the chances of carrying out a successful stabilization policy, it is not without its difficulties. The chief disadvantage is that the economic cycles of different jurisdictions are not necessarily homogeneous

nor do they run concurrently, especially in regions with different levels of external economic integration that are exposed to asymmetrical shocks. In the face of this dilemma, and despite the fact that the regulatory approach maintains that the fiscal power to perform the task of stabilizing the economy rests with the central government, the alternative of establishing subnational countercyclical funds emerges as a second-best option.

This mechanism would require clear institutional rules to determine the situations in which it would be possible to deploy the fund's resources, the amount of such deployment, and the permitted uses, among other factors, to maximize countercyclical effects at the macroeconomic level. Moreover, good-quality provincial statistics would be needed to permit reliable calculation of the state of the cycle in each province, and with a mechanism that can distinguish between temporary problems that are natural in any market economy and structural problems that affect a region permanently. Moreover, there should be project banks and national and regional public programs that can be deployed in situations of falling economic activity and to minimize the typical delays often seen in countercyclical fiscal policy.

INDEX OF PUBLIC INVESTMENT MANAGEMENT EFFICIENCY AT THE SUBNATIONAL LEVEL

CONSTRUCTION OF THE INDEX AND THE QUESTIONNAIRE

Bearing in mind the above, the proposed methodology for compiling the Index of D-PIM Efficiency is based on the idea put forward by Armendáriz et al. (2016) as a general framework for constructing the relevant dimensions and sub-dimensions, since it represents an improvement on the pioneering work of Dabla-Norris et al. (2011) and the other methodologies analyzed.

This construction takes a sequential view of the different stages of PIM, and its evaluation takes a similar form to that proposed by Rajaram et al. (2010). However, in contrast to the latter, it includes closed questions in the survey questionnaire, scoring the responses from 0 to 4, where 4 indicates maximum performance.

These questions are presented in three modalities. First, a multiple choice scheme is used in which each receives a certain score that emerges from the previously mentioned scale (different fractions of the maximum value are assigned according to the number of alternatives).

Second, there are questions whose score is the sum of the corresponding fractions of the maximum value. This type of instruction is designed to verify whether





the system under evaluation has certain characteristics deemed desirable for PIM efficiency.

Finally, a series of single-response and numerical questions is proposed that may be either directly or inversely related with PIM efficiency. In this case, implementation of the Min-Max criterion identified by the OECD (2008) should be considered as a normalization option. The maximum value (4) is assigned to the member of the sample that presents the best performance and the minimum (0) to the one that records the worst. The intermediate values are normalized through the quotient between the distance that separates the observation in question from the sample minimum and the distance between the maximum and the latter. Since the normalized values will be found between 0 and 1, they must be multiplied by 4 to conform to the scale used in the work.

Therefore, the value or score obtained for each sub-dimension will emerge from the simple average of the scores allocated to all the corresponding questions, in such a way that the weighting structure is uniform. Similarly, the same criterion is used to give a value to the dimensions.

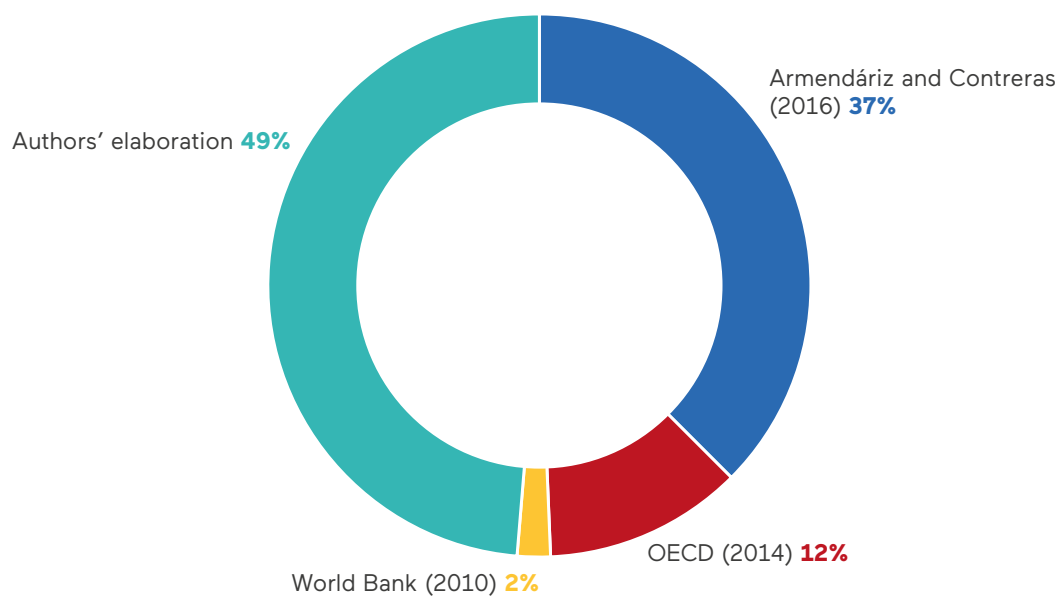
In line with the aspects raised, the methodological definition expressed here includes and attempts to integrate in a robust and uniform index aspects of the evidence revealed by the different methodologies. It also incorporates new variables typical of institutional idiosyncrasy based on the evidence of the major challenges often faced by LAC countries that can have a significant influence on PIM quality and efficiency outcomes in the region.

The final questionnaire consists of around 150 questions divided into 20 sub-dimensions and five dimensions of analysis. The final dimension proposed by the methodology ("General characterization and coordination of public investment") explores aspects that cut across all stages of the public investment process, including operational themes, legal questions, human resources, access to information and monitoring the entire cycle, support systems, strategic guidelines and especially aspects of coordination and financing.

The questionnaire is administered to subnational governments at the intermediate level (SNGI), through interviews with civil servants who are involved with PI systems. It must be complemented with secondary information requested from these governments or gathered from other sources (legislation, third-party documents, etc.) (Figure A1.5).



Figure A1.5. Breakdown of Questions in the Questionnaire According to the Original Source



Source: Authors' elaboration.





The dimensions and sub-dimensions included are presented in Table A1.3.

Table A1.3. Dimensions and Sub-dimensions of the Questionnaire

DIMENSION 1: STRATEGIC GUIDES AND PROJECT EVALUATION
1.1 Strategic guide
1.2 Project evaluation capacity
1.3 Project preparation and evaluation methodologies/social prices
1.4 Project evaluation
DIMENSION 2: PROJECT SELECTION
2.1 Integration with the budget
2.2 The role of legislation
2.3 Public scrutiny
2.4 Selection criteria
DIMENSION 3: PROJECT IMPLEMENTATION
3.1 Adjudication
3.2 On-time project completion
3.3 Internal monitoring and audits
DIMENSION 4: EX POST PROJECT EVALUATION, AUDITS, AND ASSET MANAGEMENT
4.1 Project evaluation, audits, and asset management
DIMENSION 5: GENERAL CHARACTERIZATION AND COORDINATION OF PUBLIC INVESTMENT
5.1 Operational descriptions
5.2 The role of legislation
5.3 Appropriate human resources
5.4 Public scrutiny throughout the entire cycle/access to information in general
5.5 Support systems
5.6 Strategic guidelines of the system
5.7 Cooperation between national, provincial, and municipal governments
5.8 Investment funding, fiscal responsibility, and PI cycle management policy

Source: Authors' elaboration.



FINAL CONSIDERATIONS AND THE IMPORTANCE OF ESTABLISHING A SUBNATIONAL INDEX

In this paper, the methodological guidelines were set out for compiling and measuring an index of public investment management applicable to SNGs in countries with a federal structure. To construct it, the various methodologies in the literature were taken into consideration, along with evidence from evaluations conducted over recent years. Particular emphasis was placed on aspects relating to assessing cooperation between different levels of government—national, provincial and municipal—in terms of PIM, and on the fiscal aspects relative to the relationship between levels of government in areas such as PI funding, fiscal responsibility, and macroeconomic cycle management policies.

Specifically, both the design of the index and its subsequent implementation call for a survey to be incorporated at the subnational level and results compiled that correspond to variables of interrelations with the national jurisdiction. Much hard work was therefore done to complement the methodological design contained in the works of Armendáriz et al. (2016) and Rajaram et al. (2010).

To develop the proposed index, which focuses on the subnational level survey and the relationship with the national jurisdiction, the questionnaires designed in the works of national-subnational coordination from the PIMA methodology (IMF, 2015) and the methodological definition proposed in the OECD index (OECD, 2014) were merged and adapted; in the latter, important aspects are introduced with regard to the relationship between national and subnational governments, with specific questions in the case of the second. Likewise, the survey developed by the OECD (2015), which covered 295 subnational governments in the region, was also examined.

The new idea of introducing cooperation between levels of government—essential when discussing PIM at the decentralized level—is one of the reasons why it is worthwhile to build an index with these characteristics. It is certainly true that, to date, there is a profound lack of awareness of the D-PIM situation among LAC countries. Although studies have been done to understand PIM at the national level, this cannot be said of intermediate governments. This problem is exacerbated by the knowledge that the ISNGs of decentralized countries in the region play a significant role in PI expenditure management and execution. Therefore, establishing an index of these characteristics is a firm step forward toward assessing D-PIM in LAC countries.





Annex 2

Results of the Decentralized Public Investment Management Index in Argentina

Table A2.1. Average Results for the Set of Argentine Provinces According to Dimensions and Sub-dimensions

DIMENSIONS AND SUB-DIMENSIONS	PROVINCIAL AVERAGE
DIMENSION 1: STRATEGIC GUIDES AND PROJECT EVALUATION	1.43
1.1 Strategic guide	2.04
1.2 Project evaluation capacity	1.16
1.3 Project preparation and evaluation methodologies/social prices	0.81
1.4 Project evaluation	1.71
DIMENSION 2: PROJECT SELECTION	1.87
2.1 Integration with the budget	2.07
2.2 The role of legislation	2.13
2.3 Public scrutiny	1.58
2.4 Selection criteria	1.70
DIMENSION 3: PROJECT IMPLEMENTATION	2.69
3.1 Adjudication	2.84
3.2 On-time project completion	2.70
3.3 Internal monitoring and audits	2.53
DIMENSION 4: EX POST PROJECT EVALUATION, AUDITS, AND ASSET MANAGEMENT	0.86
4.1 Project evaluation, audits, and asset management	0.86
DIMENSION 5: GENERAL CHARACTERIZATION AND COORDINATION OF PUBLIC INVESTMENT	1.68
5.1 Operational descriptions	1.85
5.2 The role of legislation	1.96
5.3 Appropriate human resources	1.92
5.4 Public scrutiny throughout the entire cycle/access to information in general	1.71
5.5 Support systems	1.05
5.6 Strategic guidelines of the system	1.38
5.7 Cooperation between national, provincial, and municipal governments	1.90
5.8 Investment funding, fiscal responsibility, and project cycle management policy	1.68

Source: IERAL.

Table A2.2. Results Obtained in the Sub-dimensions Included in the Public Investment Management Efficiency Index for Argentina

Sub-dimensions	1.1	Strategic guide	Tucumán	2.15	2.59	2.22	1.41	2.22	2.74	1.11	3.19	2.37	2.22	1.42	2.30	1.85	2.00	1.70	2.67	1.56	2.15
	1.2	Training in project evaluation	T. de F.	2.59	2.22	1.44	2.22	0.44	0.89	1.11	0.00	0.00	0.00	0.44	1.33	0.89	0.44	0.44	1.33	0.89	2.59
	1.3	Project preparation and evaluation methodologies	Sgo. del E.	1.41	2.22	0.59	0.67	1.44	1.15	1.33	0.81	0.00	0.00	0.59	0.81	0.96	0.44	0.00	0.30	0.30	1.41
	1.4	Project evaluation	Santa Fe	2.74	0.44	2.45	2.45	2.78	2.45	2.45	2.33	2.33	2.33	2.45	2.33	2.22	1.67	2.45	0.67	1.33	3.67
	2.1	Integration with the budget	Santa Cruz	1.11	0.89	1.33	1.45	2.78	1.45	1.00	2.00	3.20	3.20	1.56	1.00	0.67	2.67	3.20	0.80	2.33	2.00
	2.2	The role of legislation	San Luis	3.19	0.00	0.81	0.00	2.78	0.00	1.00	1.00	3.00	3.00	3.00	0.00	2.00	4.00	3.00	3.00	2.00	2.00
	2.3	Public scrutiny	San Juan	2.37	0.00	1.33	2.33	2.78	2.33	0.00	1.50	2.67	2.67	2.67	0.00	1.00	2.50	1.13	2.75	1.50	0.00
	2.4	Selection criteria	Salta	2.22	2.22	0.96	1.56	2.67	2.67	2.67	2.67	2.67	2.67	2.67	1.67	1.67	1.00	2.17	1.67	1.67	1.33
	3.1	Adjudication	Río Negro	1.42	0.44	0.59	2.00	2.40	2.40	3.00	3.00	2.67	2.67	2.67	2.38	2.48	3.24	2.78	3.24	3.00	3.62
	3.2	On-time project completion	Neuquén	2.30	1.33	0.81	2.00	2.40	2.40	3.00	3.00	3.00	3.00	3.00	0.00	1.00	1.50	2.00	2.00	2.00	2.50
	3.3	Internal monitoring and audits	Misiones	1.85	0.89	0.96	1.22	2.00	2.00	1.04	1.04	2.67	2.67	2.67	1.04	1.50	3.00	3.00	3.00	3.00	3.00
	4.1	Ex post project evaluation, audits, and asset management	Mendoza	2.00	0.44	0.44	1.67	2.67	2.67	4.00	4.00	3.19	3.19	2.30	2.30	2.30	2.30	0.40	0.40	0.40	0.67
	5.1	Operational descriptions	La Rioja	1.70	0.44	0.00	2.45	2.67	2.67	2.00	2.00	1.93	1.93	3.07	0.00	2.47	3.00	3.07	1.47	1.87	2.27
	5.2	The role of legislation	La Pampa	2.67	1.33	0.33	0.67	0.80	0.80	3.00	3.00	2.96	2.96	0.50	0.50	1.00	2.00	0.50	1.11	2.50	3.00
	5.3	Appropriate human resources	Jujuy	1.56	0.89	0.30	1.33	0.67	0.67	2.00	2.00	2.67	2.67	1.44	1.44	1.67	2.00	1.44	1.11	1.44	2.27
	5.4	Public scrutiny throughout the entire cycle/access to information in general	Entre Ríos	2.15	0.44	1.37	0.67	2.67	2.67	4.00	4.00	3.41	3.41	2.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00
	5.5	Support systems	Corrientes	1.56	0.89	0.37	0.00	0.00	0.00	1.00	1.00	2.22	2.22	0.93	0.93	1.00	2.00	0.93	1.10	1.87	2.27
	5.6	Strategic guidelines of the system	Córdoba	1.93	1.34	1.02	2.00	2.00	2.00	4.00	4.00	2.96	2.96	1.83	1.83	1.60	2.00	1.83	1.57	1.57	3.00
	5.7	Cooperation between national, provincial, and municipal governments	Chubut	1.92	0.89	0.59	2.00	0.80	0.80	3.00	3.00	2.42	2.42	1.30	1.30	1.60	2.00	1.30	0.40	0.40	2.27
	5.8	Investment funding, fiscal responsibility, and project cycle management policy	Chaco	2.89	1.33	1.04	2.67	2.00	2.00	2.00	2.00	2.22	2.22	2.67	2.00	2.00	2.00	2.67	2.00	1.52	2.15

Source: Authors' elaboration.

Notes: red: lowest; dark grey: low; light grey: medium; green: high; blue: highest.





Annex 3

Results of the Decentralized Public Investment Management Index in Mexico

Table A3.1. Average Results of the Set of Mexican States According to Dimensions and Sub-dimensions

DIMENSIONS AND SUB-DIMENSIONS	PROVINCIAL AVERAGE
DIMENSION 1: STRATEGIC GUIDES AND PROJECT EVALUATION	2.28
1.1 Strategic guide	2.62
1.2 Project evaluation capacity	2.18
1.3 Project preparation and evaluation methodologies/social prices	1.75
1.4 Project evaluation	2.56
DIMENSION 2: PROJECT SELECTION	2.38
2.1 Integration with the budget	2.54
2.2 The role of legislation	2.65
2.3 Public scrutiny	1.88
2.4 Selection criteria	2.42
DIMENSION 3: PROJECT IMPLEMENTATION	3.47
3.1 Adjudication	3.59
3.2 On-time project completion	3.77
3.3 Internal monitoring and audits	3.05
DIMENSION 4: EX POST PROJECT EVALUATION, AUDITS, AND ASSET MANAGEMENT	1.52
4.1 Project evaluation, audits, and asset management	1.52
DIMENSION 5: GENERAL CHARACTERIZATION, AND COORDINATION OF PUBLIC INVESTMENT	2.08
5.1 Operational descriptions	1.83
5.2 The role of legislation	2.47
5.3 Appropriate human resources	2.30
5.4 Public scrutiny throughout the entire cycle/access to information in general	1.30
5.5 Support systems	1.85
5.6 Strategic guidelines of the system	2.28
5.7 Cooperation between national, provincial, and municipal governments	2.54

Source: Authors' elaboration.

Table A3.2. Results Obtained in the Sub-dimensions Included in the Index of Public Investment Management Efficiency for Mexico

Sub-dimensions	1.1.1	Strategic guide	2.89	3.56	4.00	2.89	2.22	4.00	2.44	1.78	0.67	1.78	2.22	4.00	Zacatecas
	1.1.2	Training in project evaluation	1.71	0.38	2.29	3.43	2.29	0.38	2.10	2.48	0.76	2.29	2.29	2.29	Yucatán
	1.1.3	Project preparation and evaluation methodologies	2.11	1.94	1.94	1.94	1.94	1.94	1.05	2.45	2.45	1.95	2.44	2.39	Veracruz
	1.1.4	Project evaluation	3.67	1.67	4.00	4.00	4.00	0.00	4.00	4.00	2.33	1.83	4.00	4.00	Tlaxcala
	2.1	Integration with the budget	4.00	3.00	4.00	4.00	4.00	2.00	4.00	4.00	2.50	1.50	4.00	2.00	Tamaulipas
	2.2	The role of legislation	2.00	2.00	4.00	4.00	4.00	2.00	4.00	4.00	3.00	2.00	4.00	2.00	Sonora
	2.3	Public scrutiny	1.00	4.00	4.00	4.00	4.00	2.00	4.00	3.00	2.00	1.00	4.00	4.00	Sinaloa
	2.4	Selection criteria	3.00	3.00	3.00	3.00	3.00	1.50	2.50	2.50	1.50	3.00	4.00	3.50	San Luis Potosí
	3.1	Adjudication	4.00	4.00	4.00	4.00	4.00	4.00	4.00	3.33	4.00	3.00	2.67	4.00	Quintana Roo
	3.2	On-time project completion	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	3.00	3.00	4.00	4.00	Querétaro
	3.3	Internal monitoring and audits	3.20	3.73	4.00	4.00	4.00	2.80	4.00	3.47	2.00	3.33	4.00	4.00	Puebla
	4.1	Ex post project evaluation, audits and asset management	0.80	2.60	4.00	4.00	4.00	1.20	4.00	0.80	0.40	0.00	2.60	2.60	Oaxaca
	5.1	Operational descriptions	2.40	1.65	4.00	4.00	4.00	1.80	4.00	1.51	1.94	2.22	1.94	2.37	Nuevo León
	5.2	The role of legislation	2.00	4.00	4.00	4.00	4.00	3.00	4.00	1.00	4.00	3.00	2.00	4.00	Nayarit
	5.3	Appropriate human resources	0.78	1.67	3.67	3.67	3.67	0.33	3.00	1.89	2.22	1.56	1.22	4.00	Morelos
	5.4	Public scrutiny throughout the entire cycle / access to information in general.	1.46	0.25	1.96	2.13	2.13	1.04	2.34	1.46	0.79	0.25	1.04	1.92	Jalisco
	5.5	Support systems	2.00	1.20	2.14	2.14	2.14	1.20	2.54	2.00	2.27	2.27	2.67	2.81	Hidalgo
	5.6	Strategic guidelines of the system	1.20	0.40	2.60	3.20	3.20	2.40	3.60	1.40	3.60	2.80	3.60	3.60	Guerrero
	5.7	Cooperation between national, provincial and municipal governments.	2.67	2.10	3.43	3.43	3.43	2.67	3.71	3.05	2.10	2.10	2.57	4.00	Guanajuato

Source: Authors' elaboration.

Notes: red: lowest; dark grey: low; light grey: medium; green: high; blue: highest.

