

Box 2. The importance of infrastructure development

Infrastructure and economic development

In economic literature, there is much evidence that the efficient provision of infrastructure services is one of the most important factors in development policies due to its positive impact on the productivity of other factors of production.

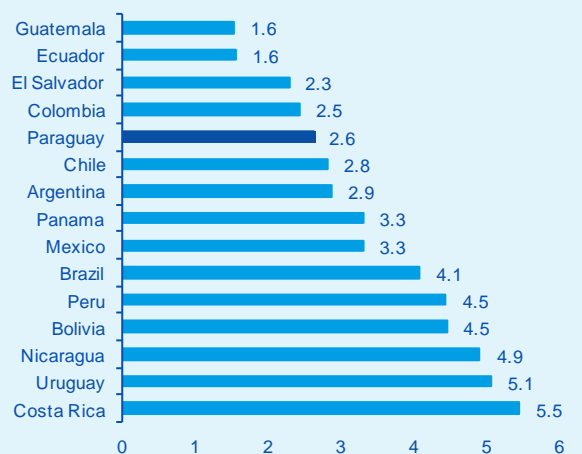
Accordingly, numerous studies have analysed the correlation between infrastructure investment and economic growth. Easterly and Rebelo (1993), using panel data from 24 countries, found that spending on transport and communications is positively correlated to economic growth¹. Meanwhile, Calderon and Servén (2004), using data from 121 countries, highlight the fact that the level of infrastructure has an important and significant effect on economic growth in the long term, with robust results to changes in the infrastructure measures and estimation techniques used. They also note that both the quality and quantity of infrastructure contribute to lower levels of income inequality².

Perroti and Sanchez (2011), meanwhile, show that Latin American countries needed to invest an average of 6.2% of GDP per year in infrastructure between 2012 and 2020 to close the gap between infrastructure demand and supply and to meet the needs of businesses and consumers³.

However, data from the region indicate that, in recent years, the amount of investment in infrastructure has fallen far below levels considered ideal to grow quickly and competitively. In fact, the lack of investment in infrastructure is a common denominator throughout the region. In 2012, the regional average for infrastructure spending was 3.42% of GDP. In particular, Paraguay allocated only 2.63% of GDP to improve its infrastructure, below the regional average (see Figure R.2.1).

Figure R.2.1

LatAm: Investment in infrastructure (% of GDP)



Source: Cepal, World Economic Forum and BBVA Research

International indicators on infrastructure in Paraguay

One of the most widespread indicators is the Global Competitiveness Index (GCI), which seeks to measure the performance of different countries in the task of ensuring the necessary conditions for sustainable economic progress. Data for the period 2015-2016 leaves Paraguay in ranked 118 out of the 140 countries assessed (just above Venezuela and Haiti in Latin America), and as regards to infrastructure, it is ranked in the same position. The latter is evidence that one of the main weaknesses of the country's competitiveness continues to be the lack of coverage of physical infrastructure. When analysing the indicators individually, we appreciate that the quality of roads and port infrastructure is what drags the country down, being ranked 138 and 110, respectively.

Similarly, a study by USAID (2006) finds that the main logistics costs come from the lack of dredging and buoying of rivers, the poor quality of the road infrastructure and delays in access to ports⁴. It should also be noted that during the recent period, no significant progress was

1 Easterly, W., Rebelo, S. (1993). Fiscal Policy and Economic Growth: An Empirical Investigation. *Journal of Monetary Economics*, 32, 417-58.

2 Calderón, C., Servén, L. (2004). The Effects of Infrastructure Development on Growth and Income Distribution. Policy Research Working Paper No. 3401.

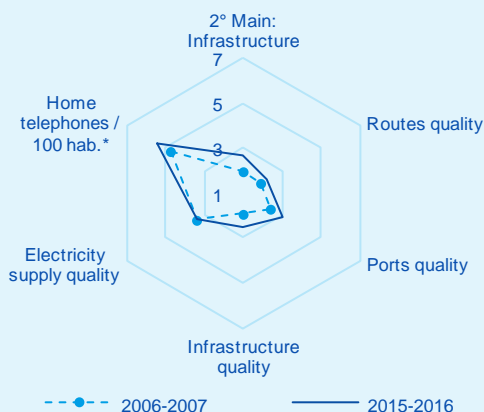
3 Perroti, D. and Sanchez, R., (2011). The infrastructure gap in Latin America and the Caribbean. Santiago, Chile. Series 153.

4 United States Agency for International Development [USAID] (2006). Impact of transport and logistics on Paraguay's international trade. Document prepared by CARANA Corporation, in collaboration with the National Chamber of Commerce and Services of Paraguay (CNCSP).

observed with regard to the quality of the electrical infrastructure (see Figure R.2.2).

Figure R.2.2

Global Competitiveness Index, Pillar: Infrastructure
(Index between 1 “worst” and 7 “best”)



Source: World Economic Forum and BBVA Research

Another indicator that provides information about the state of the infrastructure of an economy is the Logistics Performance Index of the World Bank, which evaluates the perception of experts regarding logistics. According to this indicator, in comparison with the average for the region, the assessment remains quite unfavourable to Paraguay (see Table R.2.1).

Table R.2.1

Paraguay: Logistical Performance Index
(Index)

	Paraguay		South America
	2007	2014	2014
Logistical Performance Index	2.57	2.78	2.85
Efficiency of customs clearance process	2.2	2.49	2.56
Quality of infrastructure related to trade and transport	2.47	2.46	2.68
Ease of agreeing to shipments at competitive prices	2.29	2.83	2.86
Quality of logistics services	2.63	2.76	2.81
Ability to track and trace shipments	2.67	2.89	2.91
Domestic logistics costs	3.13	n/d	n/d
Frequency with which shipments reach the consignee within the scheduled time	3.23	3.22	3.25

Source: World Bank and BBVA Research

All these factors indicate that Paraguay has a lot of room for growth in relation to the provision and improvement of economic infrastructure (which is

attractive considering that the economy has low levels of infrastructure and therefore a higher marginal productivity).

We anticipate that in the coming years the main driver of growth will be investment, especially infrastructure construction. This is important because it generates significant positive externalities and has a widespread direct impact on productivity levels. Ludeña and Ruiz Díaz (2008), for example, found that reducing transportation costs in Paraguay by 54% would contribute to an increase of 0.24% in GDP, to an increase in exports and imports (by 1.38 % and 6.35%, respectively) and an improvement of 3.88% in the terms of trade⁵.

While the Paraguayan government has been developing a series of reforms to improve the investment climate and create a better institutional framework for private sector participation in investment (including the Law on Public-Private Partnerships, PPP), there are crucial challenges ahead to reduce the gap in the existing infrastructure.

⁵ Ludeña, C., Ruiz Díaz, F. (2008). Transport overruns: Geographical curse or infrastructure policy failure? An estimate for Paraguay from a general equilibrium model. Department of Economics, Faculty of Business Administration, Catholic University of Uruguay.

DISCLAIMER

This document has been prepared by BBVA Research Department, it is provided for information purposes only and expresses data, opinions or estimations regarding the date of issue of the report, prepared by BBVA or obtained from or based on sources we consider to be reliable, and have not been independently verified by BBVA. Therefore, BBVA offers no warranty, either express or implicit, regarding its accuracy, integrity or correctness.

Estimations this document may contain have been undertaken according to generally accepted methodologies and should be considered as forecasts or projections. Results obtained in the past, either positive or negative, are no guarantee of future performance.

This document and its contents are subject to changes without prior notice depending on variables such as the economic context or market fluctuations. BBVA is not responsible for updating these contents or for giving notice of such changes.

BBVA accepts no liability for any loss, direct or indirect, that may result from the use of this document or its contents.

This document and its contents do not constitute an offer, invitation or solicitation to purchase, divest or enter into any interest in financial assets or instruments. Neither shall this document nor its contents form the basis of any contract, commitment or decision of any kind.

In regard to investment in financial assets related to economic variables this document may cover, readers should be aware that under no circumstances should they base their investment decisions in the information contained in this document. Those persons or entities offering investment products to these potential investors are legally required to provide the information needed for them to take an appropriate investment decision.

The content of this document is protected by intellectual property laws. It is forbidden its reproduction, transformation, distribution, public communication, making available, extraction, reuse, forwarding or use of any nature by any means or process, except in cases where it is legally permitted or expressly authorized by BBVA.

This report has been produced by the Peru Unit:

Chief Economist for Peru

Hugo Perea
hperea@bbva.com
+51 1 2112042

Francisco Grippa
fgrippa@bbva.com

Yalina Crispin
Yalina.crispin@bbva.com

Vanessa Belapatiño
Vanessa.belapatio@bbva.com

Ismael Mendoza
Ismael.mendoza@bbva.com

Marlon Broncano
Marlon.broncano@bbva.com

BBVA Research

Group Chief Economist

Jorge Sicilia Serrano

Developed Economies Area

Rafael Doménech
r.domenech@bbva.com

Spain

Miguel Cardoso
miguel.cardoso@bbva.com

Europe

Miguel Jiménez
mjimenezg@bbva.com

US

Nathaniel Karp
Nathaniel.Karp@bbva.com

Emerging Markets Area

Cross-Country Emerging Markets Analysis

Alvaro Ortiz
alvaro.ortiz@bbva.com

Asia

Le Xia
le.xia@bbva.com

Mexico

Carlos Serrano
carlos.serranoh@bbva.com

Turkey

Alvaro Ortiz
alvaro.ortiz@bbva.com

LATAM Coordination

Juan Manuel Ruiz
juan.ruiz@bbva.com

Argentina

Gloria Sorensen
gsorensen@bbva.com

Chile

Jorge Selaive
jselaive@bbva.com

Colombia

Juana Téllez
juana.tellez@bbva.com

Peru

Hugo Perea
hperea@bbva.com

Venezuela

Julio Pineda
juliocesar.pineda@bbva.com

Financial Systems and Regulation Area

Santiago Fernández de Lis
sfernandezdelis@bbva.com

Financial Systems

Ana Rubio
arubiog@bbva.com

Financial Inclusion

David Tuesta
david.tuesta@bbva.com

Regulation and Public Policy

María Abascal
maria.abascal@bbva.com

Digital Regulation

Álvaro Martín
alvaro.martin@bbva.com

Global Areas

Economic Scenarios

Julián Cubero
juan.cubero@bbva.com

Financial Scenarios

Sonsoles Castillo
s.castillo@bbva.com

Innovation & Processes

Oscar de las Peñas
oscar.delaspenas@bbva.com

Contact details:

BBVA Research

Azul Street, 4
La Vela Building - 4 and 5 floor
28050 Madrid (Spain)
Tel.: +34 91 374 60 00 and +34 91 537 70 00
Fax: +34 91 374 30 25
bbvaresearch@bbva.com
www.bbvaresearch.com