



BULLETIN 389 /

FACILITATION OF TRANSPORT
AND TRADE IN LATIN AMERICA
AND THE CARIBBEAN

Investing in sustainable, resilient and inclusive infrastructure for economic recovery

Background

In 2020, during the COVID-19 pandemic, the global economy shrank by 4.4% according to ECLAC figures, the worst result since 1946 (ECLAC, 2021d and 2021e). In Latin America and the Caribbean, the shrinkage was the worst since 1900,



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This article is part of a series of reflections on infrastructure, a subject frequently discussed in different editions of the *FAL Bulletin* and other ECLAC documents.

This document outlines the situation and challenges of infrastructure investments in Latin America and the Caribbean, taking the global environment as a reference, and sets out some considerations on the behaviour of investments in 2020 and the outlook for 2021. It summarizes some of the stimulus packages provided by the countries for recovery from economic crisis caused by the coronavirus disease (COVID-19) pandemic. It also highlights the need for sustainable, resilient and inclusive infrastructure criteria in order to make economic recovery more dynamic, to narrow some structural gaps, and so to boost long-term economic growth.

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The views expressed in this document, which is a translation of an original that did not undergo formal editorial review, are those of the authors and do not necessarily reflect the views of the Organization or the countries it represents.



with an estimated 7.7% drop in GDP in 2020 —the worst performance of all developing regions. In 2021 and 2022, respectively, growth rates of 5.9% and 2.9% are forecast, whereas worldwide there should be a recovery of 5.9% in 2021 and 4.5% in 2022 (ECLAC, 2021d and 2021e).

Strategically speaking, it is very important for governments to promote countercyclical policies, placing greater emphasis on investments in infrastructure in order to spur post-pandemic economic recovery and subsequently enhance long-term economic growth. In Latin America and the Caribbean, however, the challenge is still greater, because the increase in current spending needed to weather this crisis has constrained governments' financial capacity. Moreover, while economic growth needs to be boosted, there is also a need for resilient, sustainable and inclusive infrastructure, together with the associated services.

This issue of the *FAL Bulletin* provides a description of infrastructure investment trends in Latin America, situating them as far as possible within the global environment; and presents some of the countries' economic recovery plans, setting out the elements which, in the author's opinion, will be essential in laying the foundations for sustainable development.

In keeping with these objectives, the document has been divided into five parts. The first summarizes recent trends in economic growth and per capita GDP in Latin America and the Caribbean as seen in a global context. Part II summarizes the trends in current and capital public spending in 2019 and 2020 and presents the outlook ECLAC estimates for 2021 based on official figures. In part III we outline the performance of infrastructure investment in the region, comparing this with trends in other regions' transport infrastructure investment; discuss estimated investments in 2020; and summarize the results of two studies on the impact of the pandemic on ongoing projects in 2020. Part IV gives a brief description of the post-pandemic recovery stimulus packages of three countries in the region and one in the European Union. Part V contains some final considerations on investment plans.

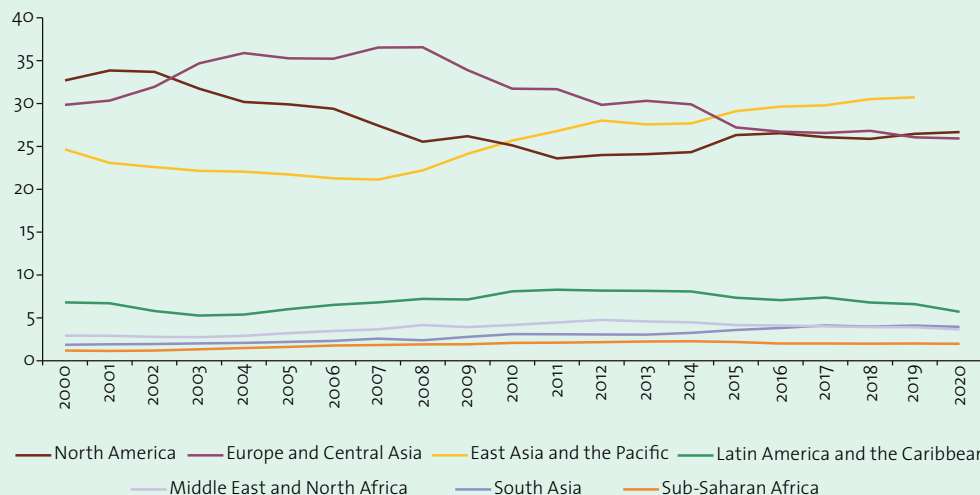
I. Recent trends in economic growth and per capita GDP: Latin American and Caribbean countries' share in global gross domestic product has been decreasing every year

During the 2000–2020 period the gross domestic product of Latin America and the Caribbean accounted on average for 6.9% of the world total. However, since 2011 (with the exception of 2017) this has trended downward, so that in 2020, the region's GDP was only 5.7% of the world

total. Such are the results of the calculations shown in figure 1. Compared to other regions, Latin America and the Caribbean are in the group of regions with the lowest percentage, namely South Asia, the Middle East and North Africa, and sub-Saharan Africa.

Figure 1

Distribution of global GDP by country grouping, 2000–2020
(Percentages of the global total)



Source: Prepared by the author, on the basis of data from World Bank, World Development Indicators [online] <http://data.worldbank.org/data-catalog/world-development-indicators>.

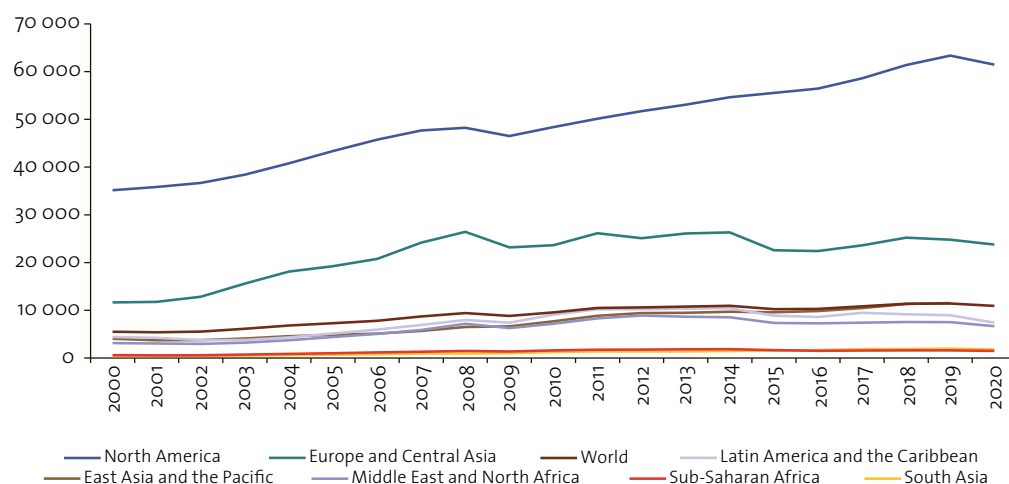
Note: Calculated on the basis of current dollars. The regions having the highest share of GDP worldwide are East Asia and the Pacific, North America, and Europe and Central Asia, whose percentage shares in 2020 were 30.7%, 26.7% and 26.7%, respectively. Of these, the East Asia and Pacific region has shown an almost continuous uptrend since 2007 and North America since 2010, while the share of Europe and Central Asia has been decreasing since 2008.

These numbers will not be complete if they are not compared with the population of each country grouping, since the mere fact of a nation's having a higher GDP does not necessarily mean an improvement in its people's economic well-being, given that it is the people who ought to benefit from a nation's gross domestic product. For that reason, this study uses per capita GDP as a proxy for quality of life. Of course, any conclusions drawn on the basis of per capita GDP need to be treated with caution; that indicator has its limitations as a measure of economic well-being, perhaps the most important being that it disregards inequality in income distribution among people. It is nevertheless used as a measure of a country's economic development, since it is generally true that countries with high levels of per capita income also have greater well-being, which is reflected in higher levels of consumption, education and life expectancy.

The highest per capita income in Latin America and the Caribbean occurred in 2014, after which it began to decline. A comparison of that region with the others shows that over the past year, Latin America and the Caribbean had a per capita income of US\$ 7,417 in 2020, less than the world average of US\$ 10,926, and also surpassed by East Asia and the Pacific (US\$ 11,500), Europe and Central Asia (US\$ 23,780) and North America (US\$ 61,453). In 2020, all regions reporting data for that year had a smaller per capita GDP, but Latin America and the Caribbean showed the largest annual drop (17.1%), followed by the Middle East and North Africa (11.2%), South Asia (7.9%), sub-Saharan Africa (7.2%), Europe and Central Asia (4.1%), and North America (3%), while worldwide the average reduction was 4.3% (see figure 2).

Figure 2

GDP per capita by country grouping, 2000–2020
(Current dollars each year)



Source: Prepared by the author, on the basis of data from World Bank, World Development Indicators [online] <http://data.worldbank.org/data-catalog/world-development-indicators>.

Note: For East Asia and the Pacific, the last year for which data are available is 2019.

According to Kaldewei (2015), the concept of per capita income is not a sufficient indicator of development, as it does not capture either the different countries' heterogeneity¹ or their specific development needs. In view of this shortcoming, ECLAC (2012) proposes the analysis of a set of structural development gaps, to facilitate a more relevant and specific focus on the bottlenecks that hinder sustainable and inclusive development in middle-income countries and particularly in the countries of the region. On the basis of ECLAC (2010), an explicit set of 11 gaps is suggested for the analysis of development needs: the income gap, the poverty gap, the inequality gap, the investment gap, the productivity and innovation gap, the infrastructure gap, the education gap, the health gap, the taxation gap, the gender gap, and the environment gap.

The same document notes, too, that middle-income countries are characterized by high heterogeneity in all aspects of development, from poverty levels and social inclusion to institutional, productive and financial capacities. These differences are key in assessing a country's state of development and dynamic prospects—that is, the country's ability to press on towards sustainable and inclusive development.

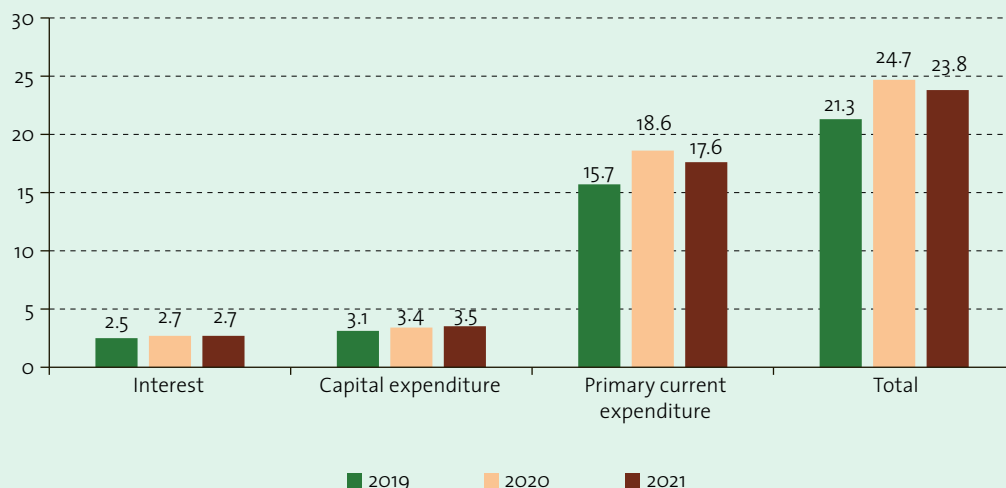
II. Current and capital public spending patterns 2019–2021: the crisis has constrained governments' financial capacity

Had it not been for the pivotal role played by the region's governments in responding to the COVID-19 pandemic during 2020, the fall in per capita income would likely have been even steeper. Primary current spending (consisting of spending on wages and salaries, goods and services, and current transfers, in particular) was the spending component that expanded the most in response to the pandemic in 2020. That strong spending growth provided a substantial boost and partly offset the fall in output (ECLAC, 2021e) (see figure 3).

¹ This refers to the fact that middle-income countries are characterized by high **heterogeneity** in all aspects of development, from poverty levels and social inclusion to institutional, productive and financial capacities. These differences are key in assessing a country's state of development and dynamic prospects—that is, the country's ability to press on towards sustainable and inclusive development.

Figure 3

Latin America and the Caribbean (16 countries):^a breakdown of total central government expenditures, by component, 2019–2021^b
(Percentages of GDP)



Source: Prepared by the author, on the basis of Economic Commission for Latin America and the Caribbean (ECLAC), *Economic Survey of Latin America and the Caribbean, 2021* (LC/PUB.2021/10-P), Santiago.

^a The countries included are: Argentina, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru and Uruguay.

^b Simple averages. Figures for 2021 are from official estimates or budgets. The figures for the following countries correspond to the institutional coverage indicated: Argentina, national public administration; Barbados, non-financial public sector; Mexico, federal public sector; Peru, general government; and Saint Kitts and Nevis, federal government.

Increased current spending to cope with this crisis constrained governments' financial capacity, even as many of them had already been facing high levels of debt before the pandemic. In its *Economic Survey of Latin America and the Caribbean, 2021*, ECLAC forecasts that total expenditures in Latin America and its subregions will be down in 2021, chiefly as a result of a decrease in primary current expenditure. In turn, given the need for economic recovery, a slight increase in capital expenditure is projected (see figure 3), mainly in South America, which has resulted in greater financing needs and has led to an upward trend in public debt. Several countries have called for new public investment programmes in their 2021 budget planning in order to create jobs and promote economic growth. See part IV of this bulletin.

III. Investment path: Latin America has the worst performance compared to other regions of the world

A. Overall investment trends

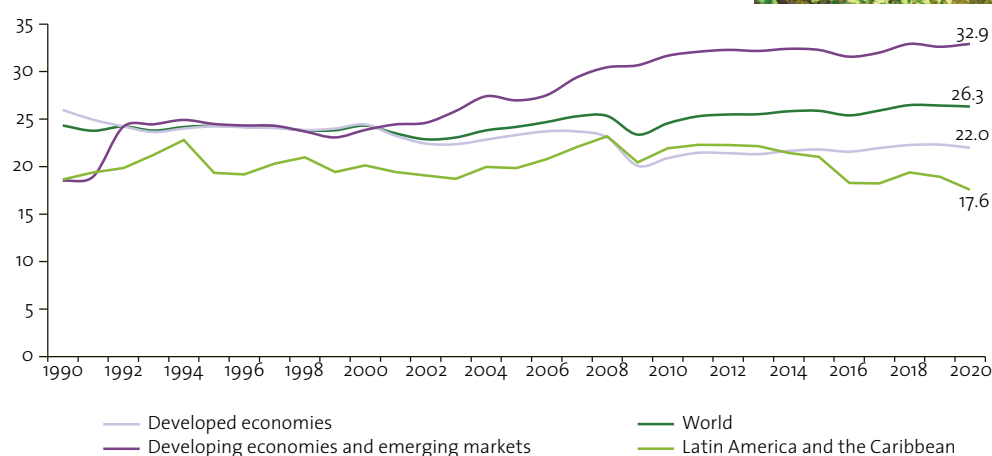
The unequal growth performance of Latin America and the Caribbean in relation to other regions is also very strongly reflected in their respective levels of investment. As shown in figure 4, the investment rate in Latin America and the Caribbean was already the lowest of all the regions in the 1990s, but began to rise slightly in the mid-2000s, only to fall back again as of 2012. In 2020, developing economies' investment rate was 32.9%; that of developed economies was 22%; but the rate for Latin America and the Caribbean was only 17.6%, whereas the world average was 26.3%.

Latin America and the Caribbean have a structural problem of low investment (ECLAC, 2021e). As long as this situation remains unresolved, it will be very difficult to achieve sustainable growth and a real recovery beyond the expected economic upturn in 2021. The average rate was seen to fall in all country groupings except developing economies and emerging markets. As with per capita GDP, the Latin American and Caribbean region was the one where annual investment showed the biggest drop in 2020 (7.2%), while it fell by 1.5% in developed economies, and by 0.4% worldwide; whereas in developing economies and emerging markets it grew by 0.9%.



Figure 4

Investment relative to GDP by country grouping
(Ratios based on current dollars, in percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of figures of International Monetary Fund (IMF), World Economic Outlook, April 2012.

B. Infrastructure investment trends

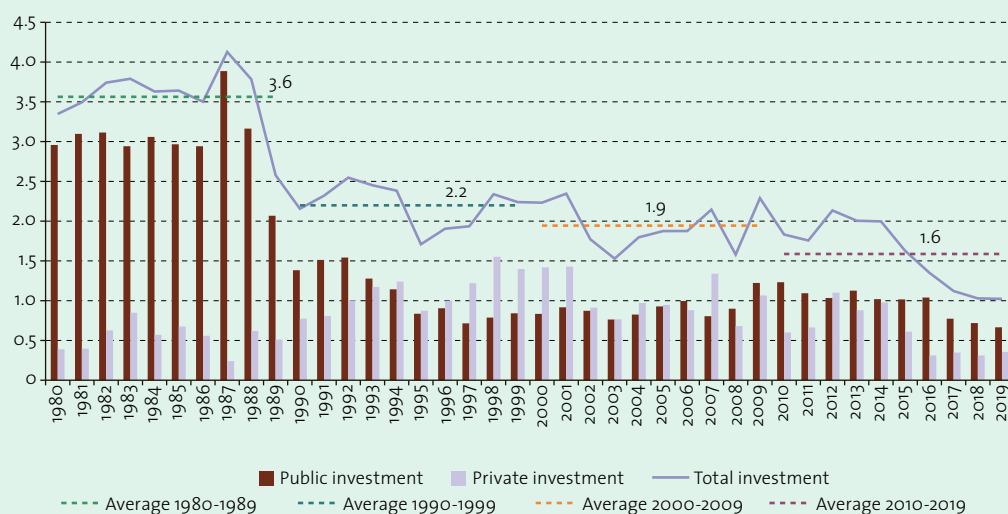
The crisis brought to light major structural gaps in the region, including low levels of investment, persisting at least since the 1990s. Infrastructure investment represents a small part of a country's total investment, but since the 1990s, unfortunately, investment levels in Latin America have been insufficient for the countries to move towards sustainable development. See the work of Perrotti and Sánchez (2011) and Sánchez and others (2017) on the infrastructure gap in Latin America. Vargas Sánchez (2005) points out that structural problems place real limits on economic growth and cannot be solved unless they are confronted and attacked by means of long-term economic policies and strategies involving the State, private enterprise and society as a whole.²

The highest infrastructure investment ratios in the region were observed in the 1980s, when the sum of public and private investment reached its highest values (3.6% of GDP on average and a peak of 4.1% of GDP); it subsequently fell to 2.2% (1990–1999) and continued to fall to averages of 1.9% (2000–2009) and 1.6% (2010–2019) (see figure 5).

² See [online] <http://herzog.economia.unam.mx/profesores/gvargas/libro2/introind.pdf>.



Figure 5
Latin America: public and private sector infrastructure investment, by infrastructure sector, 1980–2019
(Percentages of GDP)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of CEPALSTAT; Economic Infrastructure Investment Data (INFRA LATAM) [online] <http://infralatam.info/>; PPI Database [online] <https://ppi.worldbank.org/en/ppi> and C. Calderón and L. Servén, “Infrastructure in Latin America”, World Bank Policy Research Working Paper, No. 5317, Washington, D.C., World Bank, 2010.

Note: Calculated as a weighted average for all available data for six countries: Argentina, Brazil, Colombia, Chile, Mexico and Peru. Includes the following sectors: roads and railways, electricity, telecommunications, and water and sanitation. Data for 2019 are preliminary.

C. Investment in transport infrastructure

Latin America has registered the lowest investment in transport of all regions since 2017 and in recent years it has trended downwards further. While in the early 2000s investment levels in the region exceeded those of North America and the Middle East and North Africa, in the second decade of this century the region was ahead of only the Middle East and North Africa, and as of 2017 Latin America’s level of investment is the lowest of all country groupings (see table 1 and figure 6).

Table 1

Transport infrastructure investment by country grouping and by decade,
2000–2009 and 2010–2019
(Percentages of GDP, simple annual average)

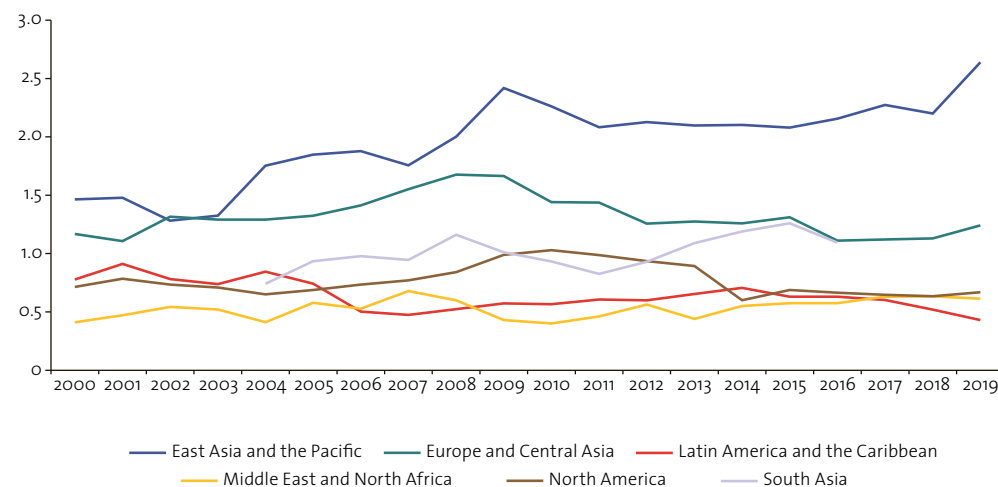
	2000–2009	2010–2019
East Asia and the Pacific	1.7	2.2
Europe and Central Asia	1.4	1.3
South Asia	1.0	1.0
North America	0.8	0.8
Latin America and the Caribbean	0.7	0.6
Middle East and North Africa	0.5	0.5

Source: Prepared by the author, on the basis of Organisation for Economic Co-operation and Development (OECD) [online] <https://stats.oecd.org/>.

Note: Includes only countries found in that database (<https://stats.oecd.org/>); groupings are based on the <https://data.worldbank.org/country/> classification.

Figure 6

Transport infrastructure investment by country grouping, 2000–2019
(Percentages of GDP)



Source: Prepared by the author, on the basis of Organisation for Economic Co-operation and Development (OECD) [online] <https://stats.oecd.org/>.

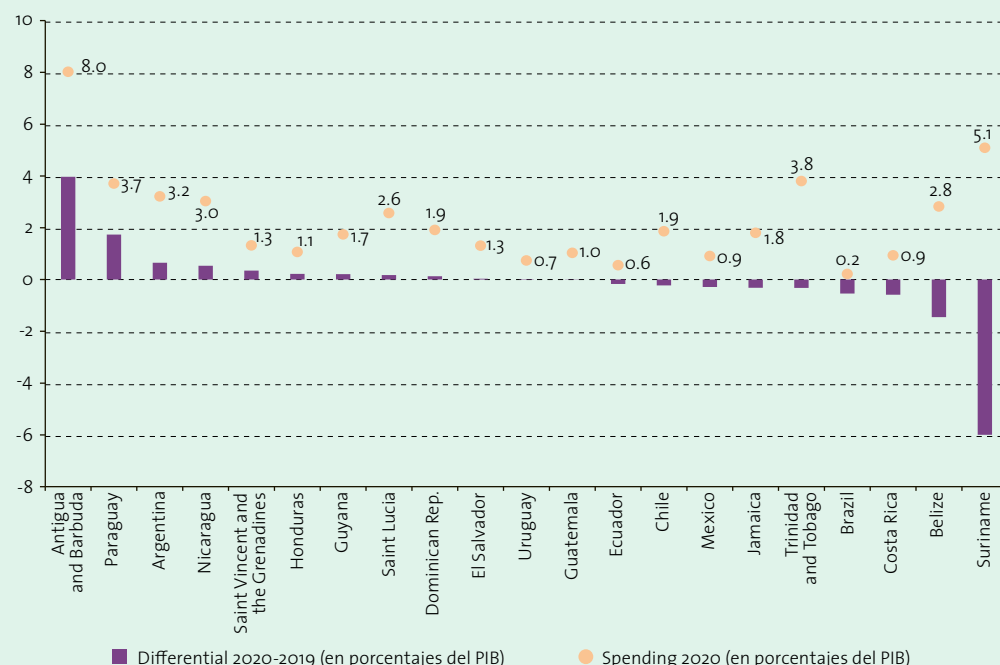
Note: Includes only countries found in that database (<https://stats.oecd.org/>); groupings are based on the <https://data.worldbank.org/country/> classification.

D. Investment prospects in 2020

In most of the region's countries, current public spending (used for normal government operations, such as wages and salaries, purchases of goods and services, interest payments, subsidies and current transfers, among others) competes with public investment or capital spending. In addition, spending on infrastructure and environmental protection competes with other expenditures such as health, education or defence. As a result, in some cases, investment projects end up being postponed because the necessary resources are lacking, especially in critical situations such as the COVID-19 pandemic.

Figure 7

Latin America and the Caribbean (21 countries): central government public spending on infrastructure^a
(Percentages of GDP)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of CEPALSTAT.

^a Includes current and capital expenditure on transport, electricity, telecommunications, and water and sanitation.

Central government public spending on infrastructure in 2020, which includes not only investment spending but also maintenance and current spending, can be used as a proxy for what happened to infrastructure investments in 2020. That year, spending represented a mere 2%³ of GDP on average. It is therefore unlikely that infrastructure investments will have increased sufficiently in 2020.

In 2020, infrastructure spending shrank in 9 countries (in the transport, electricity, telecommunications, and water and sanitation sectors) and grew in 12, despite severe budget constraints. The largest reductions were seen in Suriname, Belize, Costa Rica and Brazil: 6%, 1.5%, 0.6% and 0.5%, respectively, as a percentage of GDP. The largest increases were seen in Antigua and Barbuda, Paraguay, Argentina and Nicaragua, with 4.0%, 1.7%, 0.6% and 0.5% respectively as a percentage of GDP (see figure 7).

E. Operational disruptions of infrastructure projects due to COVID-19

According to World Bank research⁴ in which real-time data was compiled on COVID-19-related operational disruptions of infrastructure projects (in both public and private sectors) in energy, transport, digital development and water, the Latin America and Caribbean region was one of the three showing the highest number of reported delays and cancellations, the others being East Asia (including China) and the Pacific (including Australia), and South Asia (including India). The number of infrastructure projects reported to have been cancelled or delayed in emerging markets and developing economies (EMDEs) was 256 as of 25 September 2020.

The data indicate that the number of interruptions of projects in the pipeline peaked in April and subsequently began falling. In contrast, for projects already under construction, the number of those facing disruptions peaked in May, since which time these too show a downward trend.

³ This includes 20 countries in Latin America and the Caribbean, excluding Antigua and Barbuda, where expenditure totalled 8% of GDP.

⁴ See [online] <https://ppi.worldbank.org/content/dam/PPI/documents/Operational-disruptions-due-to-COVID-September-.pdf>.

An analysis of the causes of these delays shows that most of the disruptions were due to travel constraints and disrupted supply chains. Foreign-sponsored projects were severely affected, as they often required the presence of foreign engineers and technicians who were unable to reach construction sites. With regard to supply chain delays, the construction industry relies heavily on manufacturers in China, where operations were heavily affected by COVID-19 from the outset of the pandemic.

The second commonest reason for the interruption of projects was workers' unavailability due to lockdown measures. Some countries, such as the Philippines, India and Colombia, implemented community quarantines, resulting in labour shortages at construction sites.

Moreover, many private companies were reluctant to invest in the infrastructure sector—where long-term commitments are often required to achieve a suitable return on investment—owing to uncertainty about the future and their need to deal with funding problems. In addition, the fallout from the pandemic raised concerns about credit quality, borrower liquidity and the financial health of partners, especially in developing countries.

Among the other reasons cited were: delayed or cancelled tendering processes, lower demand projections, and reallocation of government budgets to address the COVID-19 bottleneck.

For a large number of projects in Colombia and Mexico, delays and cancellations were mentioned. In Colombia, for example, delays in the construction of a transmission line due to a community lockdown put six wind farms under financial pressure at the development stage, highlighting the fact that infrastructure projects are often sequential and interdependent, so that the stoppage of one project can put several at risk. In Mexico, as a result of the government's no-debt policy, tenders were cancelled in the midst of the crisis caused by the COVID-19 pandemic.

In a subsequent World Bank study,⁵ tracking data were collected on infrastructure projects in developing countries during the first half of 2020. While the results are not surprising, they are alarming: private sector investment dropped by an unprecedented 56% from the same period in 2019.

The same study emphasizes how vital infrastructure has been in the fight against COVID-19: "Digital connectivity, strong logistics systems and municipal solid waste management are crucial to fighting the pandemic. More traditional infrastructure sectors such as energy and transport are essential to ensure supplies and vaccines are delivered to their intended recipients."

IV. Post-pandemic recovery plans: investment in sustainable, resilient and inclusive infrastructure must be at the heart of recovery plans

Some of the stimulus packages announced in Latin America and the Caribbean for economic recovery will benefit all regions of the respective country, such as the two-year (2020–2022) "Plan Paso a Paso Chile se Recupera",⁶ which includes investments from both the public sector (12% of GDP in 2019) and the private sector (8.7% of GDP). In the area of transport, this Plan includes construction or upgrading projects for the national road network, airports, ports, railways and metros. In terms of waterworks, the Plan includes projects in such areas as irrigation, rural drinking water abstraction and flood prevention. The Plan includes other investments related to housing, town planning and such other areas as agriculture and sports. Furthermore, it was announced that not only would the projects included in this recovery plan comply with current environmental regulations, but

⁵ See [online] <https://blogs.worldbank.org/ppps/private-sectors-retreat-jeopardizes-recovery>.

⁶ See Government of Chile, "Plan Paso a Paso Chile se Recupera", 2020 [online] https://www.gob.cl/chileserecupera/?gclid=CjwKC-AjwmK6IBhBqEiwAocMc8lr376oM1ld3j4WSeX3i4tek6W8Fkg4VpobPzY1LjyyG_uuiDk1OBoCFCYQAvD_BwE.

30% of the projects in the public investment plan would help speed up Chile's transition towards sustainable development and climate change mitigation and adaptation.⁷

Honduras's "Plan de Reactivación Económica 2020–2021", amounting to at least 1.3% of GDP in 2019, aims to generate jobs through investments in road infrastructure, the agricultural sector, housing, food chain development, strengthening of the health system, and some benefits for micro- and small enterprises.⁸

Mexico has presented two "project announcements to strengthen economic recovery",⁹ amounting to 2.2% of 2019 GDP, which include joint public-private projects covering a 12-month period, broken down as follows: 41% transport (roads, ports and rail) and logistics, 41% energy projects, with a strong emphasis on fossil fuels, and 0.4% drinking water and environment (see table 2).

Table 2
Economic recovery plans of Chile, Honduras, Mexico and France

Country	Plan name	Period	Amount (in percentages of 2019 GDP)
Chile	Plan Paso a Paso Chile se Recupera	2020–2022	6.4
Honduras	Plan de Reactivación Económica 2020–2021	2020–2021	1.3
Mexico	Two project announcements to strengthen economic recovery	2021	2.2
France	n.d.	n.d.	4.1

Source: Prepared by the author on the basis of official information from each country, for Chile, Honduras and Mexico, and the Chilean Chamber of Construction for Germany and France [online] <https://cchc.cl/uploads/archivos/archivos/resumen-semanal-panorama-mundial-24-agosto-al-16-septiembre.pdf>.

Note: n.d.: Data not determined.

For reference, a number of post-pandemic recovery plans have been announced in countries outside the region, e.g. in France, where the three priority areas of the recovery package are: economic competitiveness and business innovation, energy transition, and social and territorial cohesion. The package provides for investments of 100 billion euros over two years, half of which will be financed by the European Union, with € 30 billion being allocated to energy transition, of which € 11 billion has been earmarked for transport; rail transport will receive an infusion of € 4.7 billion. Other amounts are being set aside for the development of day-to-day mobility, such as cycling and public transport. In principle, the plan emphasizes the need for green infrastructure, especially in the areas of transport, water and energy. Overall, it has been estimated that, of the € 100-billion total, almost € 4 billion can be directly linked to programmes requiring new infrastructure works.¹⁰

The economic recovery plans mentioned above involve the revitalization of construction and the resumption of suspended projects. Their goal seems to be to resolve problems of short- and medium-term momentum, and probably to redress the infrastructure gap. However, there is nothing to suggest that the low-growth dynamic that obtained prior to the crisis will change in the long term, since the structural problems that set limits on the region's growth before the pandemic not only remain in place but have worsened, and will surely have a negative impact on economic activity and labour markets beyond the growth rebound of 2021 and 2022 (ECLAC, 2021b and 2021e).

⁷ See Government of Chile, Anuncia presidencial del "Plan Paso a Paso Chile se Recupera", 16 August [online] <https://prensa.presidencia.cl/discurso.aspx?id=164307>.

⁸ See [online] <https://presidencia.gob.hn/index.php/sala-de-prensa/9229-gobierno-anuncia-plan-de-reactivacion-economica-para-generar-inversiones-y-empleos>. and <https://presidencia.gob.hn/index.php/gob/el-presidente/8120-plan-para-la-reactivacion-economica-2020-2021-estara-centrado-en-la-persona-humana-mipyme-y-generacion-de-empleos>.

⁹ See [online] https://www.proyectosmexicogob.mx/wp-content/uploads/2021/02/CPMProyectos_infraestructura_20_anuncio_30nov20.pdf.

¹⁰ See [online] <https://cchc.cl/uploads/archivos/archivos/resumen-semanal-panorama-mundial-24-agosto-al-16-septiembre.pdf>.

V. Final consideration on investment plans

A. The dynamic effects of infrastructure investment may support sustainable growth and generate future tax benefits

The strength and constancy of growth from 2021 onward is subject to the uncertainties arising from the pandemic and countries' ability to reverse the structural problems that were to blame for their pre-pandemic low growth trajectory (ECLAC, 2021e).

Promoting a lasting investment policy that is fiscally sustainable may involve significant financing challenges. The reduction in public investment observed in some countries has often been justified by difficulties in financing such spending. That static conception of spending does not take into account the dynamic effects that occur in the investment process, since it seems perfectly possible to safeguard the fiscal space if capital investment spending itself tends to favour growth and thus generate future tax benefits.

As noted in ECLAC (2021a), "investment-led growth of employment and GDP would offset short-term effects on the fiscal deficit through higher revenue and the creation of formal jobs." In addition, to the extent that there is greater investment in infrastructure, the resulting boost in labour productivity and energy efficiency should strengthen competitiveness in foreign trade (ECLAC, 2021a).

A study of Latin American economies found that the public debt-to-GDP ratio would increase by only about 60% of the original investment (Coremberg, 2010). Hence, an increase in public investment could, to some extent, be self-financing, thus also expanding potential production and strengthening tax revenue. In view of these potential outcomes, it is fair to say that well-managed investment spending can help generate a virtuous circle of sustainable growth.

Investment in infrastructure should be a central focus of economic stimulus plans, and even investment plans that are funded by resources additional to ministries' regular budgets should not be oriented exclusively towards recovery and job creation, but should also seek to solve at least three of the most critical problems of our times that are directly linked to the region's infrastructure. These challenges are described below and are related to **resilience, climate change and the environment, social inclusion** (and the reduction of inequalities) and the weakening of **regional integration** (ECLAC, 2021c).

B. Resilient and sustainable infrastructure to mitigate carbon emissions, environmental impacts and economic losses, without compromising the well-being of future generations

Transport and electricity generation are the largest contributors to CO₂ emissions worldwide, accounting for as much as 65% thereof; in Latin America the corresponding percentages are 61% in Brazil and 62% in Central and South America.¹¹ In the region,¹² much of the increased CO₂ generation from transport is due to the countries' vast size, which means that vehicles have to make longer journeys, which moreover take even longer owing to man-made sources of infrastructural inefficiency. For example, quality standards for highway and road construction are inadequate, there are few alternative modes of transport, the territory is underserved by carriers, and connections and intersections are few, all of which increases vehicle fuel use (Lardé, 2020).

Of the total funding of the stimulus packages announced by the world's 50 largest economies, amounting to approximately 17% of global GDP in 2019, just 2.5% will be allocated to green recovery (ECLAC, 2021). In Latin America, less is known about the amounts that will be allocated to the environment in recovery programmes, but in the absence of

¹¹ Author's calculations, based on IEA (2020).

¹² The transport sector is the largest contributor to CO₂ emissions in Latin America, followed by electricity generation (worldwide the reverse is true, with transport second to the electricity sector)—author's calculations based on IEA (2020).

complementary measures, emissions of CO₂ and other pollutants will continue to increase year after year owing to the construction or expansion of road networks, airports, ports and other infrastructure referred to in the programmes described above.

Even as the construction and use of infrastructure continues to harm the environment, infrastructure too can suffer damage from various untoward events, some of them naturally occurring, others technological or socioeconomic, with the result that countries' various activities may be hindered. The COVID-19 pandemic, for example, has highlighted the need to ensure that even in scenarios of crisis and drastic change, infrastructure can continue to provide transport, energy and telecommunications services, as well as others, such as water and sanitation and health services, to name only a few.

Therefore, new investment plans must provide for a resilient and sustainable infrastructure base. The United Nations Environment Programme (UNEP) defines sustainable infrastructure systems as those that are planned, designed, constructed, operated and decommissioned in a manner that ensures economic and financial, social, environmental (including climate resilience) and institutional sustainability over the entire infrastructure life cycle. Sustainable infrastructure can include built infrastructure, natural infrastructure or hybrid infrastructure that contains elements of both (UNEP, 2021).

Serebrisky and others (2020) point out that sustainable infrastructure “has three features: it minimizes the emissions of greenhouse gases that cause global warming, it is resilient to the effects of climate change and natural disasters, and it minimizes local pollution of air, water and solid wastes and dangers. It is imperative to ensure that the infrastructure is sustainable since this can have adverse effects on the environment that persist for decades and extend beyond the geographic and sectoral borders of the investment.”

Many attempts have been made to explain the meaning of “resilience” in the context of development. One of the most widely used definitions of resilience is that of the United Nations Office for Disaster Risk Reduction (UNDRR), which is adopted for the purposes of this paper: “The ability of a system, community or society exposed to hazards to resist, absorb, accommodate, adapt to, transform and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions through risk management” (Weikert Bicalho, 2021).

Ideally, consideration of infrastructure resilience should be based on the combination of the three levels of analysis: resilience of infrastructure assets, resilience of infrastructure services, and resilience of infrastructure users. El Nakat and others (2015) point out that when planning and designing resilient infrastructure, the focus should be not just on the artefact but also on the people and processes, governance structures, resources and knowledge that set and shape its resilience. (Weikert Bicalho, 2021). Resilience also needs to be maintained throughout the project life cycle; otherwise, it may incur unnecessary costs. One way of incorporating resilience criteria into infrastructure projects is to include green infrastructure.

Resilient infrastructure does not have to be more expensive; well-planned investments in resilient infrastructure assets will also deliver benefits in the future. Conversely, not adopting resilient projects may result in very high costs, as the service disruptions and risk that are acceptable to users can be very costly when compared to the net costs of resilient infrastructure.¹³

C. Access to basic services, through its impact on human capabilities, increases productivity and thus economic growth

The 2030 Agenda for Sustainable Development adopted by the United Nations in 2015 proposes Sustainable Development Goals (SDGs) for universal development by 2030. The Agenda contains medium- and long-term objectives and goals embodying a comprehensive approach to development and highlighting the importance of having investment plans

¹³ See [online] <https://blogs.iadb.org/sostenibilidad/es/la-infraestructura-resiliente-es-crucial-al-planificar-para-un-futuro-incierto/>.

or roadmaps designed for the long term that will make it possible to address current infrastructure gaps, taking advantage of all the advantages of the regions' countries and preparing them to face the challenges and opportunities of the future.

According to Cecchini (2019),¹⁴ social inclusion can be defined as guaranteeing a basic level of services (water, energy, sanitation) and education (primary and secondary), whereas workforce inclusion is defined as expanding participation in paid work under decent conditions (productive, quality employment, with rights and social protection), with wages and contributory pension schemes that lift people above the poverty line.

One of the ways to enhance and promote inclusion in society and the economy is to ensure universal access to adequate and safe (reliable) basic services for all citizens. The importance of infrastructure services (transport, water, energy and telecommunications) to the 17 SDGs may be direct or indirect, illustrating the cross-cutting role that infrastructure plays in sustainable development.

Recovery packages should include infrastructural investments in safe, affordable, accessible and sustainable transport for all (Goal 11), and universal access to telecommunications services, energy services, and water and sanitation, ensuring that the most vulnerable no longer need bear the unnecessary costs of the pandemic. Infrastructure of this quality is key to achieving the SDGs, but the pandemic has set back progress towards them.

Transport and telecommunications facilitate access to educational facilities, social benefits and various public services such as health and goods and labour markets. It is thought that the pandemic has resulted in 3.1 million young people and children being excluded from education due to the difficulty of maintaining distance learning (ECLAC, 2021a). Accordingly, there is a need for stimulus packages that will afford them immediate assistance; this should, for example, include national broadband schemes and access to computers, to ensure that everyone can get connected. This would also spur progress towards achieving Goal 4—to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

Recovery packages could also be leveraged to achieve universal access to energy services (Goal 7) and water and sanitation (Goals 3 and 6), ensuring that the most vulnerable are spared further unnecessary costs. **Energy** generation and distribution facilities and **water and sanitation** services are fundamental in overcoming poverty and guaranteeing habitable conditions for households, and during this pandemic they have been essential inputs for maintaining sanitary conditions, halting any increase in infections and caring for the sick.

Inequality is a fundamental impediment to reducing social exclusion (ECLAC, 2007). The ECLAC document *The Inefficiency of Inequality* (ECLAC, 2018) points out that inequality (in access to these services) impairs productivity and energy efficiency and intensifies environmental degradation. It also illustrates how redistributive policies and an increase in the growth rate can go hand in hand, insofar as many social policies, through their impact on human capabilities, contribute to an increase in individuals' productivity and thus spur economic growth.

D. Regional physical integration for resilience, competitiveness and growth

Resilient infrastructure integrated into large networks is the physical basis for economic integration and is vital to sustaining a good quality of life, making connectivity a reality for people, increasing labour inclusion for many, and facilitating economical movement of goods and services. Regional integration policies can enhance all countries' potential, with greater development opportunities for all people.

In Latin America and the Caribbean, connectivity of territories within countries and across the region is insufficient. While transport networks have been upgraded in terms of capacity and

¹⁴ See [online] https://www.cepal.org/sites/default/files/presentations/mesa_1_s_cecchini.pdf.

quality, historically the region's infrastructure was designed to bring mining and agricultural production to ports for export. As a result, infrastructural nodes are still organized with a view to the exploitation and export of extractive natural resources. In some cases, this occurs because the grid was designed to impede regional interconnection, whether for reasons of national security, economic concentration or political influence. As a result, high logistical costs slow down integration and productive linkages (ECLAC, 2018, p. 166).

Transportation, energy and telecommunications infrastructure planning that is regional in scope would make it possible to deepen regional integration, allowing countries to more successfully implement joint and coordinated policies and enabling producers to increase their resilience to shocks, improving the region's responses to adverse situations such as the current pandemic.

The following are some possible benefits of greater physical integration:¹⁵

- Secure supply chains for strategic goods and services, for example, a plan for self-sufficiency in health focused on capacity-building for the production and distribution of vaccines and medicines in the region.
- Expansion of production capacity taking advantage of internal and external economies of scale.
- Optimization of value chains to reduce logistical and transaction costs while strengthening relationships between countries and companies.
- Improvements in siting, in particular for new investments.
- Establishment of new mobility and logistics routes to improve production efficiency and quality while also diversifying products.
- Incentives for new business opportunities, for example by spurring long-awaited industrial development.
- Improved use of available production resources.

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VII. Publications of interest



FAL Bulletin N° 383

Public-private partnerships under the “people-first” approach

Ricardo Sánchez
Jeannette Lardé

One of the structural problems that hinders fuller development in Latin America is a lack of infrastructure investment. Since the 1980s, when investment in economic infrastructure ceased to be almost entirely public, the private sector has played an important role, at times accounting for about half of the total. Such investments mainly take the form of concession contracts or other forms of public-private partnerships (PPPs).

Traditional PPP initiatives for the provision and financing of infrastructure services have had varying success, resulting in contrasting perceptions of their performance and the services they have provided. Given how important PPPs have increasingly become, it is important that the various problems are solved in a way that enables them to make a more effective contribution to development. This article analyses the “people-first” approach when considering the future of PPPs in Latin America and the Caribbean, which can be done by placing them under the umbrella of the Sustainable Development Goals (SDGs).

Available in:



Serie Comercio Internacional N° 166

Políticas anticíclicas y propuesta para el cálculo de la recuperación fiscal de la inversión en infraestructura

Ariel Coremberg
Jeannette Lardé
Ricardo J. Sánchez
Juan Sanguinetti

Evidence suggests that investment drives economic growth, which boosts revenues for the State. The size of this increase in tax receipts is determined by a number of conditions, including the stage of the business cycle. The empirical evidence shows that the investment multiplier tends to be higher in times of recession. Thus, it would appear that the current COVID-19 pandemic is a favourable scenario for strengthening the growth-enhancing effect of infrastructure investment. This paper presents a theoretical review and a methodological section that proposes a method for measuring the extent to which greater investment in infrastructure generates more resources for the State.

Available in: