

SECTOR IN-DEPTH

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Infrastructure & project finance

Infrastructure in Emerging Markets: Focus on Argentina

Argentina is planning \$150 billion in much-needed infrastructure investments in areas such as transportation, water and sanitation, irrigation, public housing and the power sector. Given the size of the investments required, the government intends to launch projects in phases, the first of which includes \$26 billion in projects being launched under a new public-private partnership (PPP) framework through 2023. Multilateral development banks and export credit agencies, as well as domestic and foreign private-sector investors, are expected to play a key role in funding, alongside the Argentine government. Improved sovereign credit quality and economic recovery will aid project delivery, while the new PPP law is expected to attract investment from abroad. Uncertainties remain, however, including the lack of a strong record in private-sector financing under new regulations and the outcome of the presidential election in 2019.

- » **Argentina's infrastructure needs follow almost two decades of underinvestment resulting from economic instability.** Investments in infrastructure over the past decade or so were primarily achieved through government funding and the participation of multilateral development banks, with little private-sector financing.
- » **The government's investment program is focused on infrastructure, power and renewables, oil & gas, and mining.** The goal is to improve and expand existing transportation and social infrastructure, reduce dependence on natural gas imports, develop renewable energy potential, improve the efficiency of thermal power generation and expand the country's mining exploration potential.
- » **Domestic and foreign private-sector participation, supported by multilateral development banks, is needed to help revive project finance and infrastructure investment.** Infrastructure investment by local institutional investors is low, at 6% of assets under management, so involvement by foreign institutional funds will be key. Multilateral development banks, which have already been significantly involved in financing renewable energy projects, aim to continue their role in PPP infrastructure efforts in Argentina.
- » **The infrastructure plan's success will depend on continued economic stability and improvement.** The program will hinge in part on strong public and political support for projects, and on the establishment of a solid track record in developing projects under the new regulations. The outcome of the presidential election in 2019 is another element of uncertainty.

Argentina has significant infrastructure investment needs resulting from almost two decades of underinvestment in various segments

The country is focusing on much-needed infrastructure investments after almost two decades of underinvestment stemming primarily from a prolonged period of economic instability and recovery.

Argentina has the third-largest economy in Latin America and one of the highest indices of urban population in the region, at 92%, but infrastructure investment as a percentage of gross domestic product over the past five years was, at 2.4%, lower than other countries in the region, including Peru, at 5.4%, and Chile, at 3.3%. As shown in Exhibit 1, Argentina ranks 122nd out of 140 countries in quality of overall infrastructure, according to the World Economic Forum's Global Competitiveness Report 2015-2016.¹

Exhibit 1

Argentina's infrastructure investment as a proportion of GDP is relatively low compared with other large economies in Latin America

As of 2016	Brazil	Mexico	Argentina	Colombia	Chile	Peru	Panama	Uruguay
Country Rating	Ba2 / Stable	A3 / Stable	B2 / Stable	Baa2 / Negative	Aa3 / Negative	A3 / Stable	Baa2 / Positive	Baa2 / Stable
GDP (\$US millions)	1,773,000	1,144,000	586,000	293,000	240,000	192,000	55,200	53,021
GDP per capita (\$US)	8,700	9,000	13,600	6,100	13,300	6,000	13,670	15,414
Population (Millions)	204	127	43	48	18	32	4	3.5
% Urban Population	86%	80%	92%	77%	90%	79%	67%	95%
Infrastructure Quality (1-7, BEST)	4	4.3	3.7	3.7	4.7	3.6	-	-
Infrastructure investment as a % of GDP	3	1.3	2.4	2.8	3.3	5.4	-	-

Note: Infrastructure Investment as a % of GDP based on 5 year average, Information unavailable for Panama and Uruguay

Source: World Economic Forum global competitiveness index; Infracompass; World Bank; Moody's.com

Argentina is heavily reliant on roads and rail for the movement of cargo to consumption centers and export, but less than 35% of roads are paved and only 5% of freight is transported by rail, according to a report by the Argentina Investment and Trade Promotion Agency in February 2018. Roads, rail and ports are in need of rehabilitation and expansion to leverage the country's position as an important grain exporter.

Although the population enjoys relatively good access to drinking water, waste-water treatment/managed sanitation penetration is still low at 26.4% compared with 85.5% in Chile and 63.6% in Uruguay, per Exhibit 2. Only 33% of land with potential is currently irrigated, compared with 100% in the US and Europe, according to the government report. The current administration has set a goal of increasing the urban population's access to the sewage network from 58% to 75% and of tripling the amount of irrigated land from 2.1 to 6.2 million hectares.

As in other developing countries, the rate of fixed broadband subscriptions and fixed telephone subscriptions is relatively low, though this deficit is somewhat compensated by mobile cellular subscriptions, as shown in Exhibit 2. However, mobile coverage can be congested because of insufficient cell tower coverage, and internet speed is slower than in regional peers.

With over 67% of the country's power generation based on fossil fuels, primarily from gas-fired plants with fuel supply risk, the government is seeking to develop renewable energy sources and increase energy efficiency. It also plans to boost gas production to reduce gas imports while investing in new thermal generation. Argentina became a net gas importer in the 2000s as gas production became insufficient to meet demand, and the country relies on imports from Bolivia via pipelines and on more expensive liquefied natural gas from Chile. Part of the country's solution for reducing its reliance on fossil fuels includes a plan to increase renewables in its electricity mix to 20% by 2025 from about 2% as of 2015.

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Exhibit 2

Argentina's infrastructure indicators compared with those of select countries in Latin America

		Brazil	Mexico	Argentina	Colombia	Chile	Peru	Panama	Uruguay
Power	Electricity Generation GWh	581,652	311,138	145,447	69,017	75,387	48,251	10,296	13,740
	Electricity production from renewable sources, excluding hydroelectric (% of total)	12.1%	5.5%	1.9%	3.3%	11.9%	3.6%	4.6%	28.4%
Water & Sanitation	People using safely managed drinking water services (% of population)	-	42.61	70.15	71.12	98.15	50.16	-	-
	People using safely managed sanitation services (% of population)	38.64	45.16	26.48	19.61	85.48	30.25	-	63.61
Communications	Individuals using the Internet (% of population)	59.68	59.54	70.15	58.14	66.01	45.46	54.00	66.40
	Fixed broadband subscriptions (per 100 people)	12.97	12.67	16.94	11.80	15.97	6.72	9.55	26.79
	Fixed telephone subscriptions (per 100 people)	20.39	15.48	23.38	14.20	19.17	9.74	15.85	32.36
	Mobile cellular subscriptions (per 100 people)	118.92	88.23	150.67	117.09	127.12	117.06	172.30	148.71
Transportation	Surface area (sq. km) (thousands)	8,515,770	1,964,380	2,780	1,141,749	756,096	1,285,220	75,420	176,220
	Rail lines (total route-km)	29,817	26,704	25,023	-	5,529	2,020	-	-
	Railways, passengers carried (million passenger-km)	15,648	479	8,588	-	840	76	-	-
	Air transport, passengers carried	94,142,377	53,313,307	15,076,355	32,261,847	16,362,437	15,081,755	13,285,098	-
	Quality of port infrastructure, WEF (1=extremely underdeveloped to 7=well developed and efficient by international standards)	3.1	4.3	3.8	3.8	4.9	3.7	6.2	4.9

Note: Power and water/sanitation services statistics are 2015 figures; missing data is unavailable. Source: World Bank; International Energy Agency; World Economic Forum; WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene.

The government has outlined an aggressive investment plan with a strong focus on infrastructure

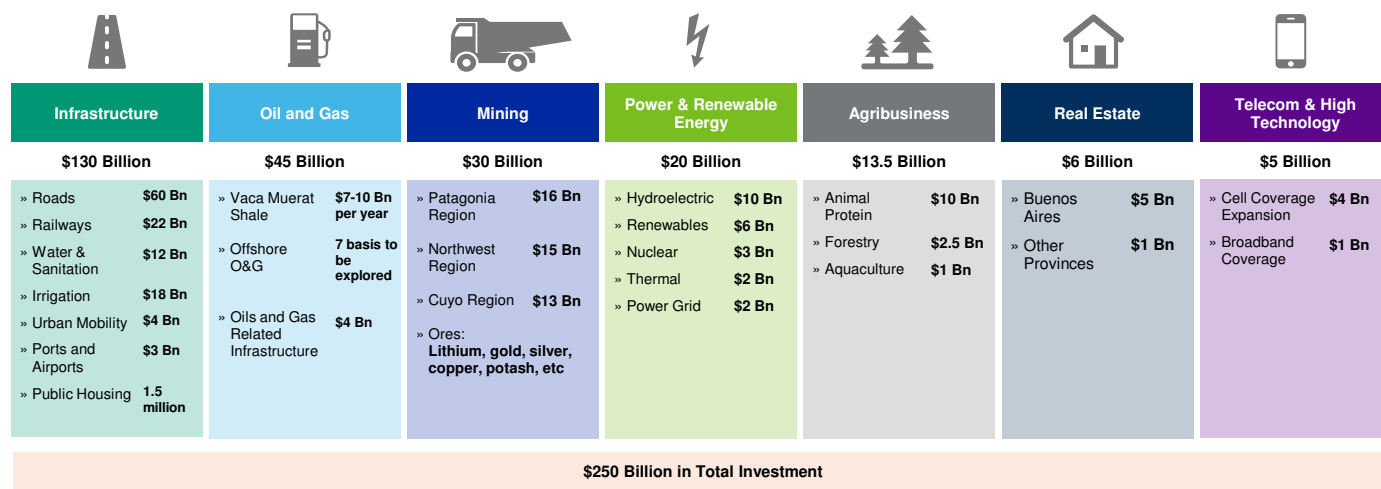
The new government has identified \$250 billion in investments to be undertaken in stages through 2035, of which \$150 billion focuses on infrastructure and the power sector. The administration is focusing on infrastructure investments that it deems essential for future economic development as well as on improvements and renovations of existing systems and basic services, initially emphasizing projects it believes to be more concrete while developing others that will create a pipeline for private-sector participation.

According to the Argentina Investment and Trade Promotion Agency's Selected Investment Opportunities report from February 2018, the largest investment component in the government's plan is infrastructure. Totalling \$130 billion, it will encompass rail, roads, airports, as well as water and sanitation, irrigation and urban mobility. Investments in oil & gas represent the second largest component at \$45 billion, and are intended to expand shale oil & gas productivity as well as to further develop offshore production potential. Mining requires around \$32 billion of investments to begin production on current projects and to develop opportunities in gold, silver, copper and lithium, potentially rivaling neighboring countries' resource availability.

Exhibit 3 shows the components of Argentina's \$250 billion long-term investment plan.

Exhibit 3

The main focus of Argentina's \$250 billion long-term investment plan is infrastructure and the power sector



Source: Argentina Investment and Trade Promotion Agency

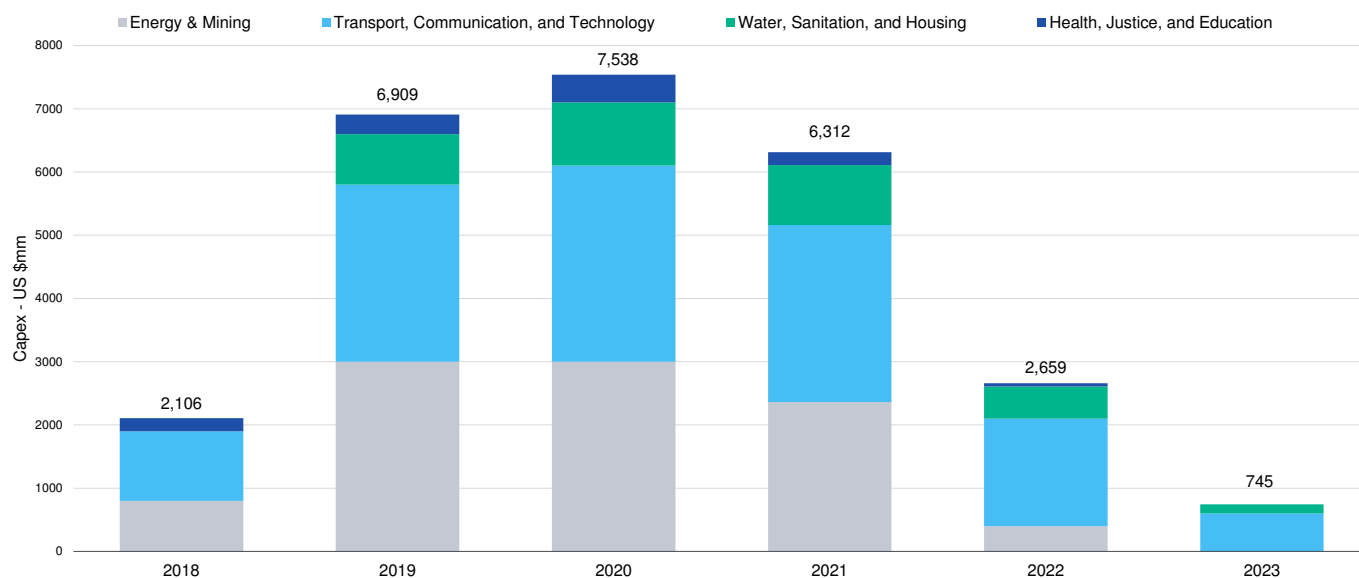
Power and renewables represent \$20 billion of total proposed investments, with more immediate plans in 2018 to launch a third tender for renewable energy projects, a high-voltage transmission grid and an additional 2GWs of high-efficiency thermal generation plants to meet the government's goal of adding 21GWs of installed capacity by 2025.

Some of the investments, in particular rail, will involve several stages and have longer horizons of up to 2035. Others such as roads, transmission lines, power and renewables, water and sanitation have more immediate launch deadlines and are likely to be completed within a decade.

The government has already announced a pipeline of sixty PPP projects totaling \$26 billion of investments between 2018-2023 in energy and mining, transportation, communications, water, sanitation and social infrastructure, excluding renewable projects, as shown in Exhibit 4. The first stage of the PPP program is a \$12 billion roads plan discussed in greater detail in our March 2018 report "[New PPP program is positive for investment inflows and infrastructure development.](#)" The roads PPP program includes government support in the form of dedicated resources, such as a tax on diesel fuels, for repayment of government certificates known as TPIs, to cover incurred construction costs.

Exhibit 4

Some \$26 billion of projects will be launched as PPPs between 2018 and 2023



Source: Ministry of Finance

Although a significant portion of the contemplated investments will likely be financed by government sources, the Argentine Congress passed a new PPP regulation in 2016 delineating payment adjustments mechanisms, risk allocation and a bid procurement process in order to attract private capital investment.

Several PPP tenders were launched in 2017 and early 2018 for roads and rail, with bid award dates ranging from April 2018 to January 2019. Several other projects are likely to be launched as PPPs in 2018 and early 2019, including water and sanitation, road and rail, social infrastructure, transmission lines and energy efficiency, as shown in Exhibits 5 and 6.

Exhibit 5

Energy and mining, transportation, communication and social infrastructure PPPs due to be launched in 2018-2019

	ENERGY AND MINING		TRANSPORTATION, COMMUNICATION, AND TECHNOLOGY			EDUCATION, HEALTH AND JUSTICE		
	ENERGY EFFICIENCY	ELECTRIC TRANSMISSION	NETWORK OF HIGHWAYS & ROUTES	RAILWAY	REGIONAL EXPRESSWAY SYSTEM	PENITENTIARY COMPLEXES	HOSPITALS	
DESCRIPTION	Replacement to LED street lighting	Construction of new high voltage transmission lines	Design, construction, extension, maintenance, development, operation and financing of Road Corridors	Improvement of existing road sections and construction of new roads	Interconnection of the Metro trains of Buenos Aires	Construction of 2 new penitentiary complexes in the Province of Buenos Aires	Construction of 6 hospitals in the Provinces of Buenos Aires and Neuquén	
TENDER	2018Q3	E1 2018Q2 E2 2018Q3 E3 2018Q3	E1 2018Q1 E2 2018Q3 E3 2019Q1	2018Q2	2018Q2	2018Q3	2019Q1	

Source: Ministry of Finance

Exhibit 6

Water and sanitation PPPs due to be launched in 2018-2019

	WATER, SANITATION, AND HOUSING						
	AQUEDUCTS	WATER TREATMENT PLANTS	WATER PURIFICATION PLANTS	SEWAGE TREATMENT PLANT	IRRIGATION	HOUSING SOLUTIONS	
DESCRIPTION	Construction of North Aqueduct Rio Subterráneo and North Aqueduct	Extend treatment plant in the city of Sante Fe	Construction of water purification plants in AMBA and Gran Rosario	Recovery of sludge from wastewater treatment plants in Salta and Buenos Aires	Development Program of new irrigation areas in Chubut, Neuquén y Río Negro	Housing Development Program (ProDeVi)	
TENDER	2019Q3	2018Q4	2018Q4	2018Q3	2018Q3	2018Q2	

Source: Ministry of Finance

The level of interest demonstrated by both domestic and foreign investors in projects launched in 2016-2018 is positive for infrastructure investment in Argentina. On April 24, 2018, the Ministry of Finance announced the receipt of 32 offers in total for its first six road PPP tenders, garnering interest from ten consortia formed by 19 local companies and 7 international firms, from the US, Portugal, Spain, China and Italy.

In addition, during 2016 and 2017, the government awarded contracts for almost 10 GWs of thermal and renewable generation facilities. The renewable energy auctions through Argentina's Renewable Energy Program, or RenovAr, had significant success and were more than six times oversubscribed. Several projects were awarded to foreign sponsors, in particular the larger wind and solar projects. Not all projects have reached financial close, but an additional renewable energy auction is expected in the third quarter of 2018.

The renewable energy auctions used an existing, though unpredictable, regulatory framework, with power purchase agreements awarded through the Compañía Administradora del Mercado Mayorista Eléctrico (Cammesa), the electricity grid operator in Argentina, while the infrastructure PPP projects are being launched under a new PPP law, in an untested framework. That said, the government has modeled its program on the experience of other countries using the PPP method, both inside and outside the region, and has held roadshows around the world to attract new and past investors to the country.

Domestic and foreign private-sector investment, alongside multilateral agency support, is needed to help revive project finance in the country

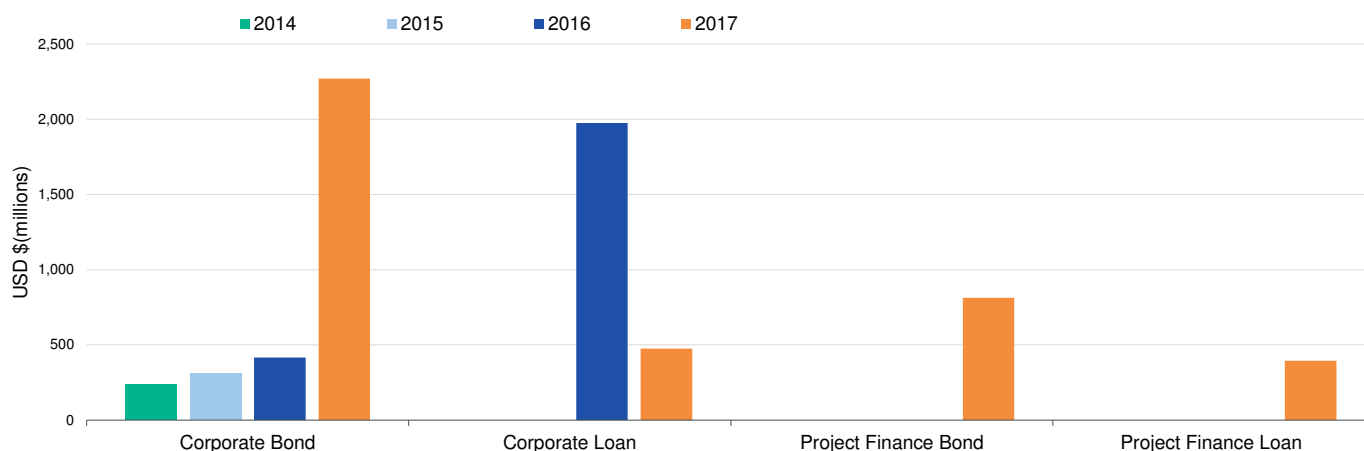
Infrastructure investment by local institutional investors is low at \$5.3 billion, or 6% of assets under management (AUM), as of fiscal 2017. As a result, the involvement of foreign institutional funds will be needed as Argentina aims to revive its capital markets.

Argentina has a long history of infrastructure concessions and privatizations. It was one of the first countries in Latin America to grant long-term concessions to the private sector, through the 1990s, in the energy, telecom, public utility and transportation sectors, including the use of demand-risk PPP concessions. However, the experience with privatizations and demand-risk PPPs was mixed, and included some nationalizations in the 2000s—Aerolíneas Argentinas, Aguas Argentinas, and YPF Sociedad Anónima for example—and several contract renegotiations or rescissions.

Infrastructure-related corporate and project finance loans and bonds over the past four years have been minimal, given the country's economic situation. In 2016 and 2017, however, activity picked up as the economy improved, helped by government policies addressing economic distortions that constrained the country's credit profile, as outlined in [Moody's Government of Argentina's \(B2, stable\) credit opinion](#) from November 2017. Exhibit 7 shows the number of corporate and project finance loans and bonds issued in the 2014–2017 period.

Exhibit 7

Limited corporate and project infrastructure debt financings over the past four years in Argentina



Source: Infradeals

The issuance of \$500M in senior secured ten-year project bonds by [Stoneway Capital Corporation](#) (B3, stable) in 2017 was the first project bond issuance in years. The thermal generation power project carried sponsor guarantees to mitigate construction risks, with over 80% of the project equity provided by a domestic sponsor, as well as power purchase agreements (PPAs) with Cammesa.

Resilient credit performance of project finance transactions in emerging markets

In our study "Default and recovery rates for project finance bank loans, 1983-2015: Resilient performance in emerging markets", we compared the credit performance of projects located in advanced economies with projects located in emerging market and developing economies (EMDEs), including Argentina.

The key findings of the study were:

- »The credit performance of project finance bank loans in EMDEs has been resilient. 10-year cumulative default rates for our EMDE subsets range between 9.4-10.3%, broadly consistent with 10-year cumulative default rates for Ba1-rated corporates (10.5%). Ultimate recovery rates for defaults within our EMDE subsets are high, averaging approximately 80%.
- »There are variations in credit performance across principal industry sectors. For the infrastructure industry sector, the 10-year cumulative default rate is higher in EMDEs and average recoveries are slightly lower than for advanced economies where projects with availability-based revenue streams are more prevalent. For the power industry sector, the 10-year cumulative default rate is slightly higher in EMDEs and average recoveries are slightly lower than for advanced economies. For the oil and gas industry sector, 10-year cumulative default rates are similar between EMDEs and advanced economies, while the average recovery rate in EMDEs is notably higher.
- »Curtailing the time horizon for our analysis to 1995-2015 from 1983-2015 shows lower default rates for all advanced economy and EMDE subsets, but has limited impact on recovery rates. The differences in default rates between the advanced economy and EMDE subsets are also lower for the 1995-2015 time horizon. Recovery rates for the advanced economy subsets are approximately 80% and are between 75-77% for the EMDE subsets.
- »In EMDEs, 40-50% of defaults are due to country risk. In advanced economies, 50-60% of defaults are caused by market risk.

Support from multilateral development banks has been increasing

Multilateral development banks have already been playing an important role in the revival of project finance in Argentina, doubling or tripling their level of investments since 2016 from prior years and bringing needed foreign investment into the country, by lending or investing alongside foreign investors or by providing guarantees. These banks have been significantly involved in the financing of renewable energy projects and will continue to be involved in PPP infrastructure projects in Argentina. Export credit agencies have also been present in the renewables sector, specifically in the most recent RenovAr auctions.

In particular, the World Bank (IBRD: Aaa, Sta), the Inter-American Development Bank (IDB: Aaa, Sta) and the Development Bank of Latin America (CAF) have significantly increased their investments in Argentina over the last two years in efforts to support recent reforms under the new administration and positive economic trends. This support has come in the form of government loans with sovereign guarantees, government fund guarantees, direct lending to projects and equity investments, with infrastructure and renewable energy as one of the main investment priorities.

In addition to directly lending to individual projects, the World Bank approved \$730 million in guarantees backing the government's Renewable Energy Fund (FODER) to support RenovAr, launched by the Ministry of Energy and Mines. Almost half of RenovAr projects awarded so far requested the World Bank guarantee, including primarily wind and solar projects, which tend to be larger and have greater foreign sponsor participation.

The board of the Green Climate Fund (GCF), set up by the parties to the United Nations Framework Convention on Climate Change (UNFCCC) in 2010, also approved a loan of \$130 million for projects awarded as part of RenovAr. And the Inter-American Investment Corporation (IIC: Aa1, Sta), the private-sector arm of the IDB, directly lent \$47 million in four separate projects. The IDB also approved in March 2018 a \$500 million investment guarantee facility for Argentina to mobilize private investment in infrastructure projects through PPPs.

In addition to renewable energy projects, multilateral development banks have been increasing support to other infrastructure projects including water and sanitation, roads, and private agribusiness and port infrastructure projects through government lending.

Infrastructure plan's success will depend on continued economic stability, strong public and political support, and the establishment of a strong record in projects under the new policies

Argentina's infrastructure investment plans will depend strongly on the country's continued economic stability and improvement. The current administration's macroeconomic policies have been credit positive (see [Government of Argentina FAQ on economic and policy reform prospects](#)), but concerns still exist about long-term sustainability, with a presidential election in 2019 that could alter the direction of economic policy and continued high fiscal deficits in foreign currency.

Public and political support are also necessary for successful projects, given the country's mixed history with private-sector concessions. Projects in other countries have encountered opposition and even cancellations when faced with changing administrations or when public support was lacking. Although demand risk is not structured as part of the PPP projects already launched or planned for launch, government funding sources that rely on tax increases, or periodic rate adjustments in the case of water utilities and transportation, must consider not only the willingness but also the ability to increase rates when needed. Communication with local constituents is key for successful project development.

New projects will benefit from establishing a record of well developed and successfully financed projects under the new regulations. The level of investment contemplated will require new and familiar market participants, both foreign and domestic, fostering competition and capital market development. However, investor interest could be drawn away by other countries in the region, with more stable economic conditions, that are also undertaking large national infrastructure plans.

Moody's related publications

Sector In-Depth

- » [Argentina's new PPP program is positive for investment inflows and infrastructure development, 14 March, 2018](#)
- » [Compelling fundamentals and carbon reduction targets drive growth, 6 September, 2017](#)
- » [Unregulated electricity generators - Latin America -Contracts support cash flow stability but carry risks, 29 June, 2017](#)

Issuer In-Depth

- » [Government of Argentina FAQ on economic and policy reform prospects, 18 December 2017](#)

Credit Opinion

- » [Stoneway Capital Corporation, 28 February, 2018](#)
- » [Government of Argentina Credit Opinion \(B2 Stable\), 30 November, 2017](#)

Issuer Comment

- » [Argentina's Midterm Election Results Will Likely Lead to More Credit-Positive Policy Reforms, 26 October, 2017](#)
- » [World Bank Ruling Against Argentina Is Credit Positive for Suez Environment , 16 April, 2015](#)

Endnotes

- ¹ The 2nd pillar of the Global Competitiveness Index measures the overall quality of infrastructure based on quality of transportation infrastructure, electricity supply and telecommunication services.

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