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Benchmarking National Attractiveness for Private Investment in Latin American Infrastructure

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World Economic Forum

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Introduction[1]

Extensive and high-quality infrastructure is an essential driver of competitiveness, impacting significantly on economic growth and reducing income inequalities and poverty in a variety of ways. In this regard, a well-developed transport and communications infrastructure network is a prerequisite for the efficient functioning of markets and for export growth, as well as for poor communities' ability to connect to core economic activities and schools; similarly, improved water infrastructure can considerably reduce child mortality rates and boost overall health levels[2]. Indeed, a 1996 study found that over 30% and 40%, respectively, of the growth differential between Africa and East Asia and low and high growth countries could be traced back to differences in the effective use of infrastructure[3].

Latin America has made progress in the quality and extension of its infrastructure network in the last decade, especially in terms of improved access to water and sanitation, electricity and communication. However, at the same time, the region has lost ground with respect to other regions of the world, with the partial exception of water and sanitation. In 1980, Latin America displayed a more extended road, electricity and telecommunications infrastructure than the East Asian Tigers; in 2004, however, the latter had overcome the former by a factor of three to two[4]. This important infrastructure gap hinders the region's growth prospects and poverty alleviation strategies: it has been estimated that an upgrade of Latin America's infrastructure to the level of South Korea would generate annual GDP per capita increases on the order of 1.1-4.8% and could reduce inequality by 10-20%[5].

The reasons for the widening infrastructure gap between Latin America and East Asia have much to do with the drastic fiscal adjustment programmes adopted in the region in the aftermath of the debt crisis of 1982. The governments in the region, faced with the necessity of reducing their expenditures, opted for significantly cutting their investment in infrastructure, politically easier than cutting salaries and pensions. As a consequence, public investment in infrastructure fell from above 3% of GDP in 1988 to 1.6% in 1998. Considering that the public sector had traditionally catered for the bulk of infrastructure investment for political and social reasons, the region found itself with the need to rethink the infrastructure financing model followed until then, by adopting regulatory and financial innovation that would allow delegation of financing, as well as infrastructure provision, to the private sector.

Public-private partnerships (PPPs) in infrastructure financing increasingly became the norm in the region, varying from full privatization to different degrees of private participation (concessions, management or lease contracts). In general, the region has been fairly successful in developing PPPs, attracting half of the total US$ 786 billion that went to the developing world in PPP financing between 1990 and 2003, and has significantly transformed the infrastructure provision paradigm. Indeed, by 2003, private utilities were managing 86%, 60% and 11%, respectively, of telecoms subscriptions and electricity and water connections[6]. Still, the private investment flowing to the region was never enough to compensate for the fall in public funding and tended to benefit only selected countries (Argentina, Brazil, Chile, Colombia, Peru and Mexico accounted for around 90% of all investment in Latin America) and sectors (mainly telecommunications, followed by energy and transport) in the region.

Against such a background, it is estimated that Latin America needs to invest between 2.5% and 6% of GDP to upgrade and extend the regional infrastructure[7]. Considering a substantial increase in government spending is limited by the still-high public indebtedness levels and low taxation capacity, and that lending from multinational development banks has recently been falling[8], it is of utmost importance for governments in the region and multinational institutions alike to promote and rethink PPP financing models, taking advantage of the considerable growth of private capital markets, which in 2003 accounted for 360% of global GDP[9].

The Role of the World Economic Forum in Meeting the Infrastructure Challenge

In line with the above analysis, the participants at the World Economic Forum on Latin America in São Paulo in April 2006 identified poor infrastructure as the major economic hindrance for the region's ability to compete globally and as one of the priority areas in which the Forum needed to explore alternatives and catalyse actions to overcome the current shortcomings.

Responding to the São Paulo mandate and leveraging its competitiveness and benchmarking expertise, the Forum has undertaken a wide-ranging research project aimed at identifying the main drivers of private investment in infrastructure projects in a selected number of Latin American countries, and at mapping out country-specific weaknesses and strengths in this regard. By doing this, the Forum will provide private and public stakeholders with an objective assessment and a unique platform for dialogue and definition of measures and policies to improve the attractiveness of national environments for private investment in infrastructure.

Who Should Read This Report?

- Government officials in charge of promoting competitiveness and development
- Project developers and promoters who wish to have a better understanding of the underlying factors and challenges that affect or influence their projects
- Investors who are looking for opportunities in infrastructure-linked assets
- Contractors, builders and developers who want to gain insight on the most interesting countries and sectors in the medium to long term
- Development finance institutions that wish to have a broader view of the areas in which countries need support and the most appropriate type of assistance required

This paper will present the findings of the research, describe the main features of the methodological framework adopted and analyse the attractiveness of selected Latin American countries for private investment in infrastructure, as well as the infrastructure investment opportunities. In addition, several examples of the report's usefulness for investors and policy-makers will be provided.

National Attractiveness for Private Investment in Infrastructure: The Framework

This paper builds on the results of different research efforts on the topic of infrastructure investment and PPPs, particularly, a recently published paper by the Inter-American Development Bank (IADB)[10] that lays out a comprehensive framework to determine the right project modality (from fully private to fully public) and corresponding choice of risk mitigation and financing tools, given a project's specific characteristics (see Figure 1).

The IADB paper achieves a very high level of abstraction, allowing the user to relate specific tools and project modalities to the project's economics and, at the same time, to link the project's "micro" conditions with the "macro" national environment.

Figure 1 shows how the country-level environment of private infrastructure investment is an essential element for evaluating a specific project's conditions (i.e. many of the project's conditions will depend on the underlying national conditions). Although the results of this country-level analysis can be used by project promoters at a very early stage as proxies for specific conditions, the ultimate goal is to link the micro-level analysis of the project evaluation process to the country's general conditions at the macro level. Similarly, the methodological framework adopted in this paper looks at a number of relevant country-level factors to gauge the link between micro-level private investment decisions and country-level measurable factors and conditions. These country-level factors have been grouped in the Infrastructure Private Investment Attractiveness Index (IPIAI), which measures the institutions, factors and policies that attract private investment in infrastructure projects in a selected number of Latin American countries[11].

The IPIAI is composed of eight pillars for a total of 62 variables (see Figure 2):

- National macro environment, including the macroeconomic stability and macro attractiveness

Figure 1: The Evaluation Process for Infrastructure Projects

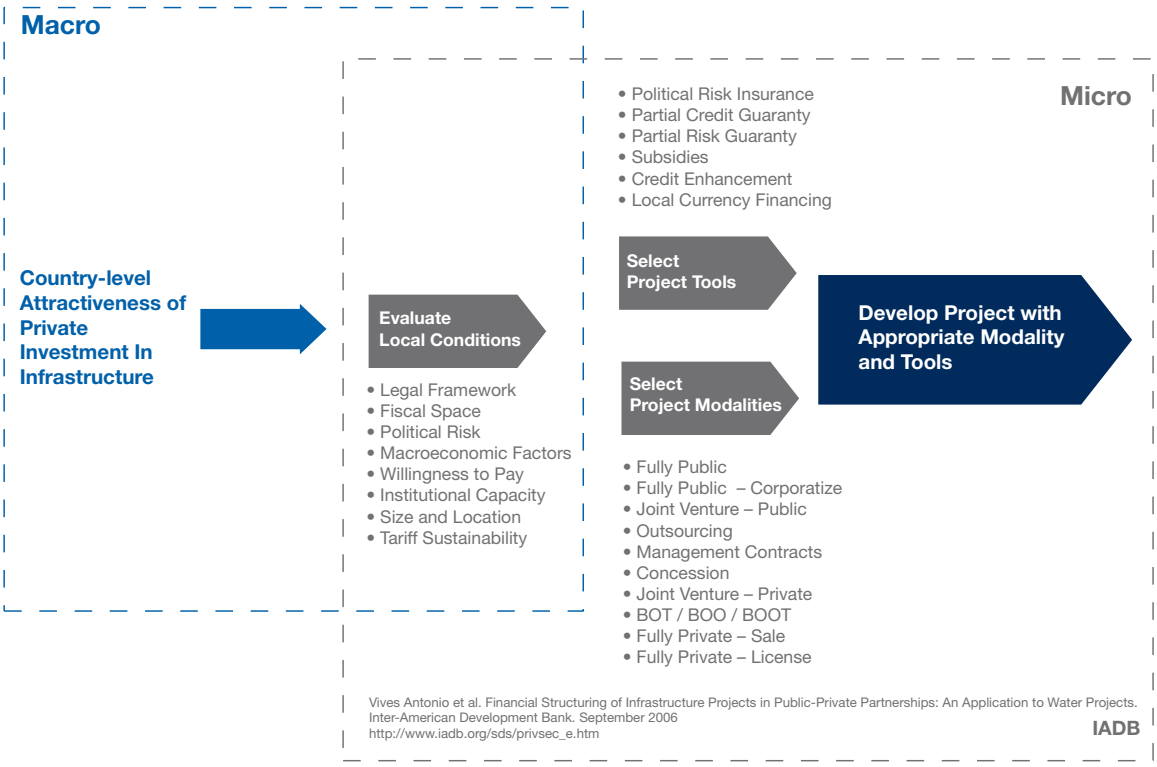
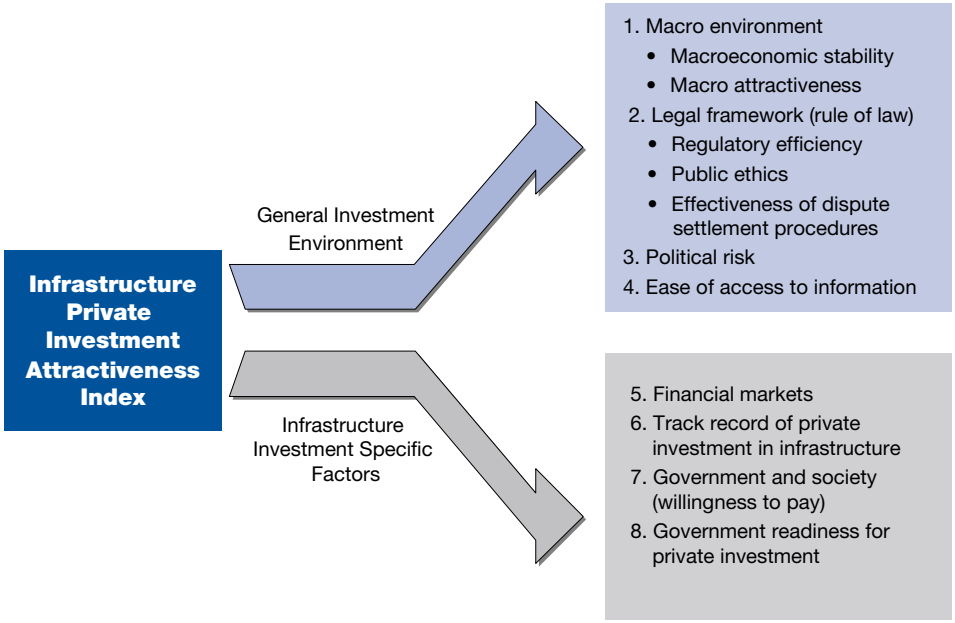


Figure 2: Composition of the Infrastructure Private Investment Attractiveness Index

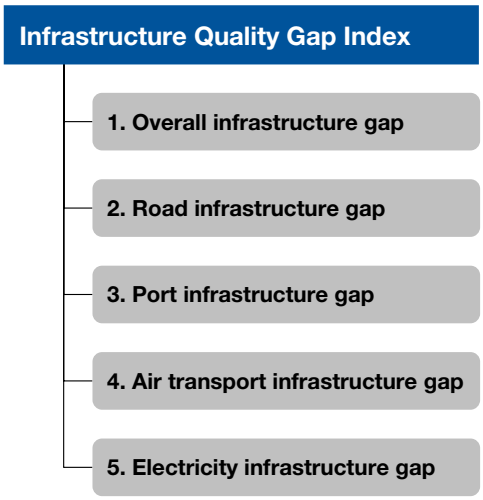


- Legal framework (rule of law), including the regulatory efficiency, public ethics and effectiveness of dispute settlement procedures
- Political risk
- Ease of access to information
- Sophistication and development of financial market enablers for infrastructure financing
- Track record of various types of private investment in infrastructure
- Government and society, including the society's willingness to pay for services related to infrastructure
- Government readiness to facilitate private investments

The pillars are organized in two sub-indexes, according to their relevance for private investment in general (i.e. sub-index I, General Investment Environment) or for private investment in infrastructure specifically (i.e. sub-index II, Infrastructure Investment Specific Factors). See the Appendix for the detailed composition of the IPIAI.

Considering that a greater unmet demand (a quality gap) for infrastructure makes a country more attractive for investment, the methodological framework also includes the Infrastructure Quality Gap Index (IQGI). This index assesses the quality gap in road, port, air transport and electricity infrastructure of a given country with respect to a control country, namely Germany, which was chosen in light of its world-class infrastructure development. Figure 3 provides a graphical description of the IQGI.

Figure 3: Composition of the Infrastructure Quality Gap Index (IQGI)

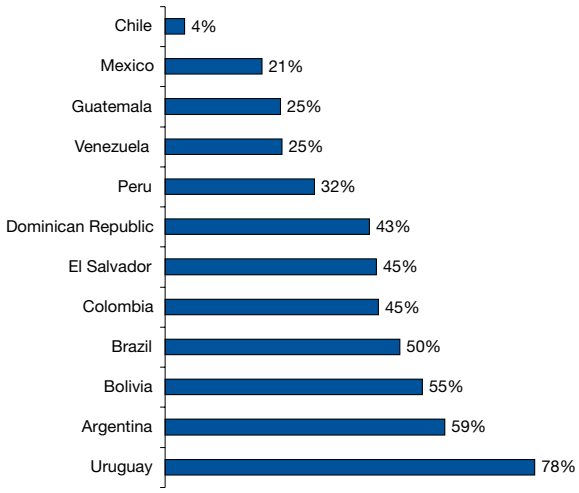


The two indexes are interdependent in that the snapshot of the attractiveness of the national infrastructure investment environment, provided by the former, is complemented by the latter's identification of the infrastructure sectors with unfulfilled potential to be tapped. Combined, they provide country-specific diagnostics about relative national strengths and weaknesses in attracting private infrastructure investment, as well as on infrastructure areas in particular need of upgrading and expansion (i.e. in which a bigger infrastructure investment gap/opportunity is shown).

The Infrastructure Private Investment Attractiveness Index (IPIAI)

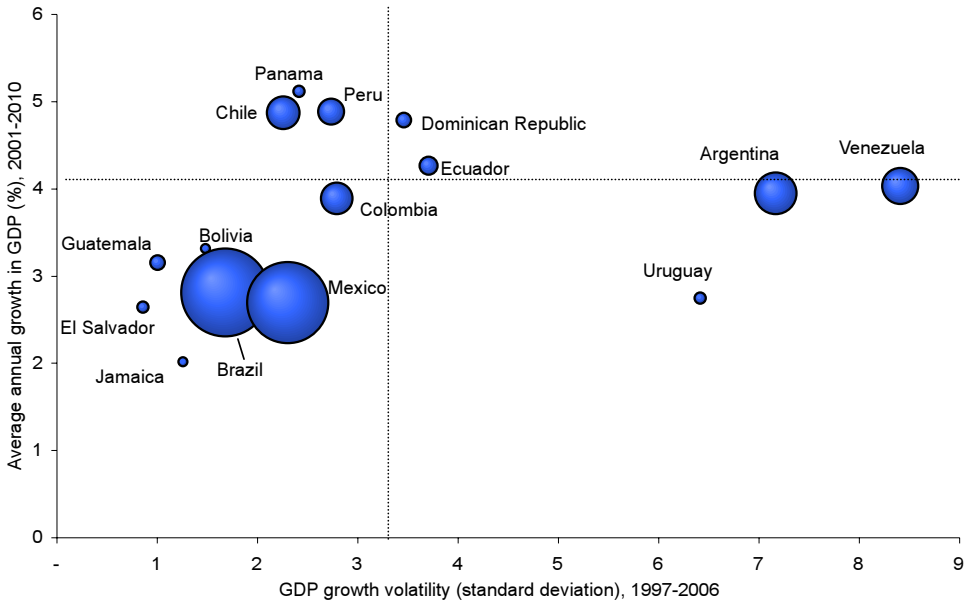
Starting with the macro environment, there is no doubt that the macroeconomic outlook of a country acts as an eye-opener for private investors considering investing there. In this sense, the macroeconomic stability sub-pillar includes variables assessing government fiscal strength (i.e. government debt and deficit as a percentage of GDP)[12], level of inflation and GDP growth rate volatility over the 1997-2006 period, as well as the rating for sovereign debt denominated in local and foreign currency and the perception of the national

Figure 4: Government Debt as a Percentage of GDP, 2005



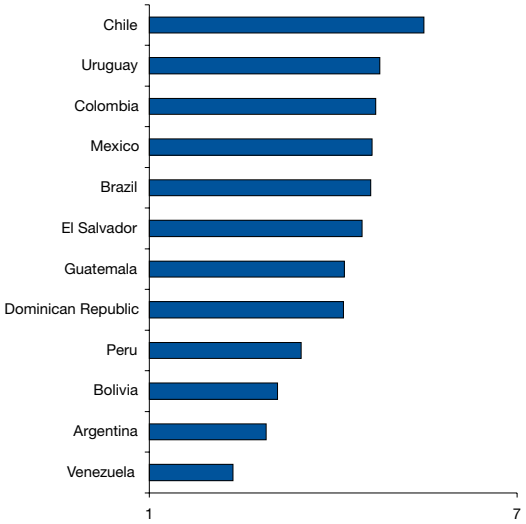
Source: Economist Intelligence Unit, *CountryData Database* (February 2007)

Figure 5: GDP Growth and Volatility



Note: Bubble size is proportionate to GDP
Source: IMF, *World Economic Outlook* (September 2006); Economist Intelligence Unit, *CountryData Database* (February 2007)

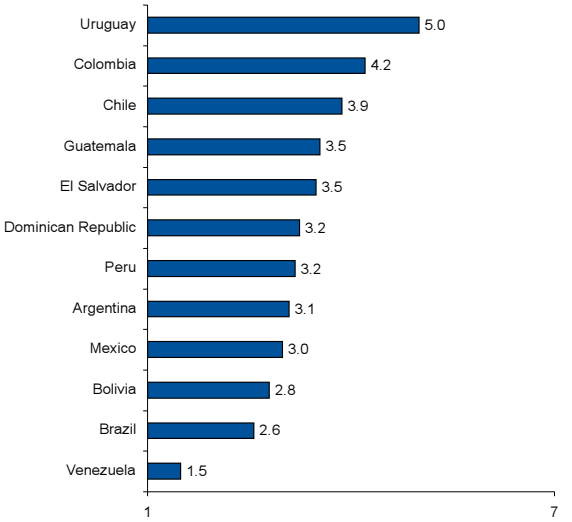
Figure 6: Protection of Property Rights



Note: Respondents were asked the following question: Propery rights, including over financial assets (1 = are poorly defined and not protected by law, 7 = are clearly defined and well protected by law)

Source: World Economic Forum, Executive Opinion Survey 2006

Figure 7: Effectiveness of Dispute Settlement Procedures



Source: authors' calculations

business community on the economic prospects for the year to come (variable 1.01). In particular, in project financing involving risk protection instruments granted by the government, the investors and lenders find themselves exposed to the country credit risk; therefore, a good sovereign rating becomes essential. Figure 4 provides a snapshot of the indebtedness levels in the region.

Moreover, a number of macro elements feature prominently in investors' decision-making and add to the attractiveness of a country as a potential investment destination. In this sense, an investor is more inclined to invest in countries displaying healthy GDP growth, competitive real effective exchange rates and a sound financial system, counted with an extended market (proxied by variables 1.11 and 1.12 that look, respectively, at the size of the internal and external markets) and either offering a national pool of highly-qualified and trained labour (captured by variables 1.13, availability of scientists or engineers, and 1.14, quality of the educational system) or the possibility of freely hiring from abroad (variable 1.12). All these elements are captured in the macro attractiveness sub-pillar. Figure 5 plots GDP growth and volatility for selected periods of time.

The regulatory and legal framework a country provides for economic enterprises and individuals alike is another extremely important element that comes into play in shaping investment decisions. Indeed, it has been estimated that regulatory risk increases the cost of capital by 2-6%[13]. In this sense, a country displaying effective policy-making as well as investment-friendly regulations is more attractive as a potential investment location. Specifically, the protection afforded to property rights (variable 2.02), the degree of openness to private investors and ownership (variable 2.03) and of bureaucracy and red tape (variable 2.05) are critical concerns. Figure 6 displays the different performances in terms of property rights protection in Latin America.

Potential investors also take into account the general ethics standards of the public sector. A country in which there is no trust in politicians (variable 2.06), a high degree of favouritism in decision-making (variable 2.07), rampant corruption with diversion of public funds (variable 2.08) and bribes in connection to the award of public contracts (variable 2.09) will not top the list of potential investment locations given the uncertainty and possible additional costs involved in dealing with the public sector.

Finally, the quality and effectiveness of the dispute settlement system is a significant element for potential investors, given that disputes and litigation may well arise in the lifespan of the investment with local providers/workers or the government itself, and that an inefficient or corrupt judicial system implies additional costs and delays. In this sense, the index looks at the independence of the judiciary from political influences (variable 2.10), the effectiveness of the legal framework for settling disputes (variable 2.11), together with the ease of shareholder suits (variable 2.12) and, very importantly, the degree of application and speed of rulings (variable 2.13). Figure 7 shows the regional performance in terms of aggregate efficiency of the dispute settlement system.

The degree of political risk of a country is another key factor in investment decisions, especially in infrastructure where projects tend to be rather long term. Indeed, all things considered, a potential investor will be much less keen to invest in a country at war or displaying a significant amount of civil turbulence (civil war or terrorist acts), or where its investment/property runs the risk of being expropriated, particularly if without compensation, or where the revenues deriving from the investment cannot be freely converted into another currency and transferred abroad. Even if the political risk can be mitigated by different tools, notably political risk coverage guarantees issued by private and multilateral institutions, the premiums associated with political risk guarantees can add to the cost of the investment in a considerable way, especially where the political risk is assessed as being very high.

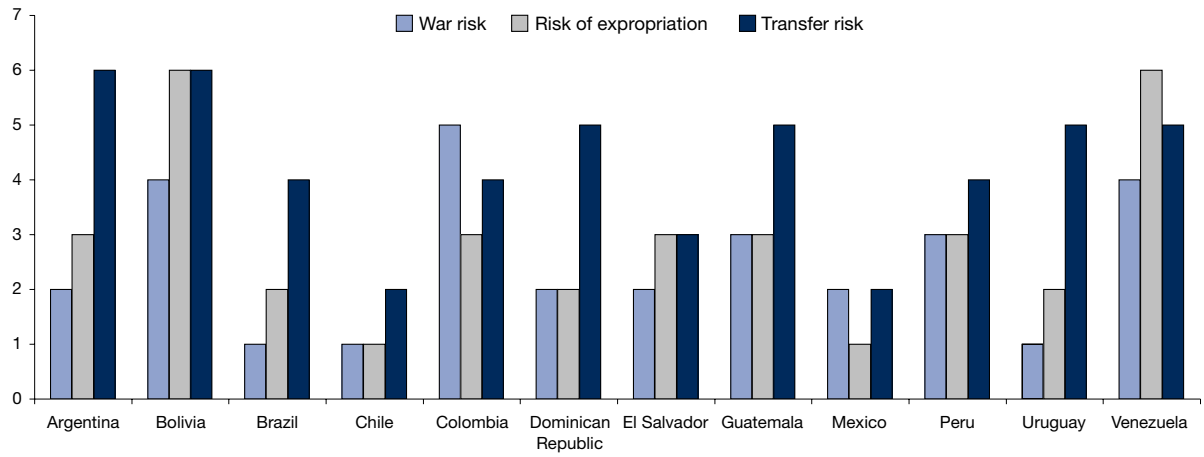
In this regard, the country rating of the Office National du Ducroire (ONDD) is included for long-term investments for the three classic categories of political risks:

- War, civil war and civil turbulence (including terrorism)
- Expropriation and government actions, complemented by variables on the degree of compensation afforded by the government in the event of de jure or de facto expropriation of real property or instruments of production (variable 3.04), since compensation is assumed to partially mitigate the expropriation risk
- Currency transfer risk

Figure 8 shows the ratings by political risk categories for the country sample.

The ease of access to information in a specific country also plays a major role in investment decisions. In this sense, there is a general consensus among experts and practitioners on the importance of transparent and comprehensive sources of information on regulations, statistics and general government services that are easily and efficiently

Figure 8: Political Risk



Source: Office National du Ducroire (March 2007). Available at http://www.ondd.be

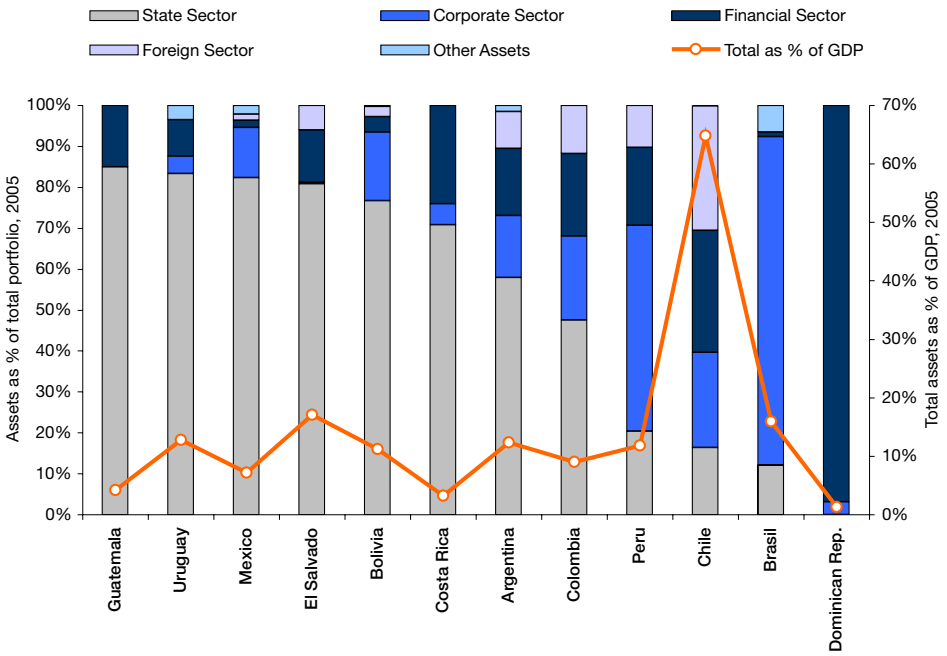
accessible. In particular, well-developed e-government services (variables 4.01 and 4.02), providing information on different sectors of the public administration via a single portal, online services and the possibility of interacting with civil servants online (for example in the framework of e-procurement systems) are a definite asset, allowing investors to have access to relevant information and apply for permits and licenses in a timely and more efficient way. The same can be said for high degrees of transparency and openness to the general public on policy-making (variable 4.05), basic economic and financial statistics (variable 4.03), changes in policies (variable 4.04) and privatization procedures (variable 4.06).

Turning attention to the Infrastructure Investment Specific Factors sub-index, the financial market enablers have a major weight in triggering infrastructure investment decisions in a country. In this sense, the IPIAI focuses on the elements of the financial market that are key to enabling private investors to find adequate financing for infrastructure projects, while factors that measure stability and government credit-worthiness are included in the macroeconomic stability sub-pillar. The common denominator of infrastructure projects is that they are long-term investments with steady cash flows and high leverage.

The degree of development of the local equity and bond market (variables 5.01 and 5.02) is essential to increasing the chances of finding investors that understand the risks related to a certain capital structure in the country. The current lending rate (variable 5.03) gives a first approximation of the rates that can be expected to be found in the local market in the short term. While it is true that long-term projects are not financed at average bank lending rates, it is also true that the long-term rates found in a country with an average bank lending rate of 18% will be higher than those found in a country with an 8% rate.

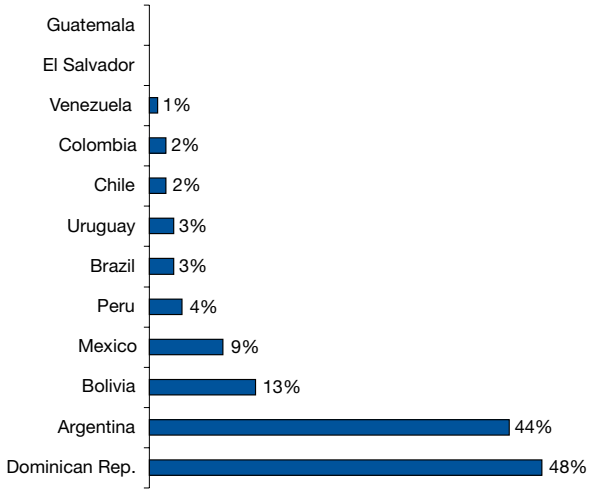
Literature on the topic underscores that a key catalyser of infrastructure financing is the local pension fund sector. Pension funds have an appetite for long-term, steady cash flows, very much in line with those provided by the infrastructure sector. Pension funds' involvement has an additional strong domino effect on other private investors, who see it as surrogate political insurance. Given the

Figure 9: Portfolio Distribution of Pension Fund Assets and Total Assets as a Percentage of GDP, 2005



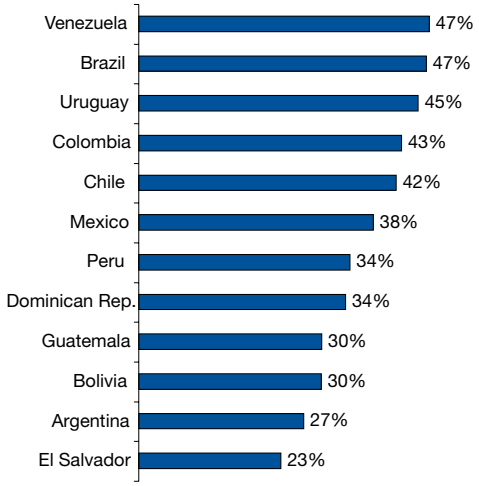
Source: FIAP, ABRAPP, IGSS

Figure 10: Projects Cancelled or Distressed in 1990-2005 as a Percentage of Total Investment in Infrastructure



Source: World Bank, Private Participation in Infrastructure Database (February 2007); IMF, *World Economic Outlook* (September 2006)

Figure 11: Satisfaction with Privatization of Public Companies



Source: Corporación Latinobarómetro

importance of pension funds, two variables have been assigned to measure their development – one (variable 5.04) measuring the size of pension fund assets as a proportion of GDP, the other portfolio allocations (variable 5.05). The rationale for the score assigned to different portfolio compositions is that pension funds that only invest in government bonds are not very good for promoting investment in infrastructure. Pension funds that invest a greater share of their portfolio in alternative assets, followed by private sector securities, received a higher score.

Finally, the importance of finding long-term financing in local currency (variable 5.06) is self-explanatory. This dimension was proxied by the performance of what is typically the actively traded, longest maturity term of government bonds (inflation indexed bonds or other types of indexed bonds were excluded). Many Latin American countries have made remarkable progress on this front; however, two things must be pointed out when analysing the scores, namely, that the data is from December 2005 and that dollarized countries (El Salvador) were given the highest scores since their local currency is the US Dollar. Figure 9 shows the average size of pension fund assets as a percentage of GDP and the distribution of the respective portfolios.

Another important aspect that is taken into account by potential investors in infrastructure is the past track record in infrastructure investment in the target country, since it provides a general idea of the sectors that have received the largest number of investments in recent years and hence have proven good working models, both in legal and financing terms, and experience in private investment. At the same time, it provides some general indications on past disruptive government behaviour that could potentially hinder the planned investment.

In this sense, the model includes data on private investment (as a percentage of GDP) in transport, telecoms, energy and water for the 1994-2005 period (variable 6.01), prevalence of project finance for all types of financing projects (variable 6.02) and a number of variables that look more specifically at the litigation/problem track record of infrastructure projects in each of the countries covered. In this regard, the number of infrastructure projects distressed or cancelled over the 1990-2005 period (see Figure 10) as a percentage of total investment[14] (variable 6.03), together with the frequency of contract terminations by the government vis-à-vis nationals and foreigners without reasonable compensation (variable 6.04), are assessed.

Pillar 7 gauges the more general realm of government–civil society relations, the latter's perception of private investments in infrastructure and PPP projects, as well as its willingness to pay for the provision of key services. There is no doubt that a negative perception of private involvement in the provision of infrastructure and related services is a severe obstacle for further PPP projects. This has been the case in Latin America, where investment with private participation in infrastructure has collapsed from about US$ 71 billion in 1998 to US$ 16 billion in 2003[15], due to a huge backlash in the civil society. Negative perceptions – which in the case of Latin America's PPP track record do not seem really justified – are often the result of a lack of proper communication between government and civil society, poorly managed perceptions and unreasonable expectations. In view of this, the establishment of efficient communication channels with civil society and high levels of transparency should be prioritized and implemented by government as a precondition for the smooth execution and functioning of PPP projects. The model includes two variables capturing public perceptions of whether privatization of state companies (see Figure 11) and public services has been beneficial to the country (variables 7.01 and 7.02).

Another aspect linked to this is civil society's willingness to pay for the provision of key services. Indeed, potential investors could shy away from countries with a culture of not paying for the provision of public services and where cost recovery may prove elusive. Although there may be a real affordability problem for a small minority of the population, which needs to be taken care of by the government (with social tariffs and targeted subsidies), the extent of cost recovery from users is a crucial determinant of infrastructure investment decisions. This needs to be improved by the government by changing the payment culture and putting in place all necessary enforcement procedures.

The willingness to pay is proxied with the degree of tax evasion in the formal sector (variable 7.05), the size of the informal market (variable 7.04) and the presence of distortive subsidies and tax breaks (variable 7.05) in a country.

Last, but not least, an essential factor in an investment decision rests on government readiness to deal with private investment modalities. Variables 8.01 to 8.04 were assessed through country-specific expert surveys. Variable 8.01 assesses the development of the PPP framework and measures dimensions such as the existence of single purpose vehicle legal figures, restrictions to private investment in infrastructure, the modernity and scope of concessions legislation and the level of state engagement in PPP promotion. Variable 8.02 captures the process of applying for general licenses and permits, its effectiveness and the degree of independence of the license granting authority. A similar approach is adopted for environmental licenses (variable 8.03), assessing the independence, capacity and, above all, predictability of the license process[16]. Variable 8.04 measure the complexity of land purchasing and obtaining rights of passage and variable 8.07 assesses the government's openness to private capital in public services.

In addition, private investors in infrastructure require governments that are able to maintain rules and policies for a much longer period of time than in traditional buyer/supplier relationships. In this sense, variable 8.05 captures people's perceptions of the consistency and continuity of government action in economic matters. The transparency with which governments handle privatization procedures (variable 8.06) impacts projects in the long term, regardless of the concessionaire's own performance and behaviour. Finally, and rather counter-intuitively, a high municipal and local authority's autonomy in tax matters (variable 8.08) scores poorly.

Consultation with experts and practitioners in the field indicates that one of the most complex issues discouraging investors is having to deal with multiple jurisdictions and tariffs.

There are other factors that shape investment decisions in infrastructure that were omitted in this analysis due to a lack of data or because the topics are still too complex to be captured in an index. Some of these key factors include:

- The level of development of local suppliers and contractors. The World Bank's PPIAF initiative is doing research in this area, but results are not yet conclusive.

- Transparency regarding the performance and results of executed and completed projects
- Government capacity to create projects that are developed and specific enough so that the private sector can assess them and take over

These topics should certainly be considered in the next phase of this research effort to add to the robustness of the analysis and the policy implications for users.

Infrastructure Quality Gap Index

The assessment made by the IPIAI is supplemented by an analysis of the relative needs and deficiencies of infrastructure development in each of the countries covered. As displayed in Figure 3, the Infrastructure Quality Gap Index measures the quality gap (which, in turn, is the opportunity for potential investors), with a total of 12 variables in :

- Overall ground infrastructure, according to the perceived overall infrastructure and national transport network quality
- Road infrastructure, through the perceived development of the national road infrastructure as well as its quality (proxied by hard data such as the percentage of paved roads)
- Port infrastructure, using its perceived quality and the average number of days required for customs clearance
- Air transport infrastructure, through its perceived quality and the number of departures per 1,000 population
- Electricity infrastructure, according to the quality of the electricity supply, electric power consumption and production, and power transmission and distribution losses (as a percentage of output)

The gap is computed with respect to Germany, which was ranked first in the infrastructure pillar of the Global Competitiveness Index (GCI) 2006-2007[17] and is therefore considered the country displaying the most developed and extensive infrastructure in the world. A “0” gap in any dimension means that the country has achieved world-class levels of infrastructure development and therefore does not need additional investment in that specific sector.

Data and Computation Methodology

In line with the Forum’s methodology in competitiveness analysis, both the IPIAI and the IQGI are built on a mixture of hard and perception data, selected and allocated to each pillar on the basis of expert opinion.

Hard data, capturing quantitative dimensions such as GDP growth, government deficit, pension funds’ portfolio allocation, private investment projects in a variety of sectors, number of paved roads, customs clearance time, among others, are taken from well-respected international sources, such as the International Monetary Fund, the World Bank and United Nations agencies. Data are also obtained from organizations that are more specialized in certain areas but equally trustworthy, such as the Milken Institute, Fitch Ratings and the Office National du Ducroire.

Perception data represent a useful complement to hard data, since they capture key dimensions of national attractiveness for private infrastructure investment and infrastructure quality, for which there is no quantitative data available for all the countries sampled. The main sources for this type of data are:

- Executive Opinion Survey (EOS), conducted annually by the World Economic Forum with top business leaders in more than 120 countries, in which the latter are asked to assess, in an international perspective, their national business environment[18]
- The institutional profiles database of the Centre d’Etudes Prospectives et d’Informations Internationales (CEPII), capturing the results of an expert survey conducted by CEPII in 2006 in 85 countries[19]
- Latinobarómetro dataset, showing the results of an annual survey conducted in 18 Latin American countries, capturing the perceptions of representative samples in each economy on a number of economic and social topics[20]
- Expert mini-surveys on government readiness to deal/manage private investment projects, conducted by the Forum especially for this project, among practitioners and legal experts on each of the countries covered

All data have been standardized on the ascending 1-7 scale adopted in the EOS, by which "1" corresponds to the worst possible and "7" to the best possible scenario for each variable.

An effort has been made to use the most recent data available in the computation of both indexes; therefore, the majority of the data points used are from 2006 or 2007.

The IPIAI is composed of 62 variables, allocated to eight pillars of attractiveness for private investment. The eight pillars are then regrouped in two sub-indexes. The final score of the index is an unweighted average of the two sub-indexes' scores. Similarly, each sub-index's score is an unweighted average of the respective four component pillars and the latter, in turn, is an unweighted average of the variables included in each pillar. The methodological decision to assign the same weight, and therefore importance, to all eight dimensions captured in the IPIAI's pillars reflects the consensus among experts and practitioners that the above dimensions are all relevant in determining a country's attractiveness for private investment in infrastructure and that, if they can have a different importance according to the specific case, no common trend in this sense could be inferred by the experience.

The IQGI is, in turn, more compact, with only 12 variables allocated to five small pillars assessing the infrastructure quality gap in a number of sectors. The computation of the final score is very much along the lines of the IPIAI, whereby it is an unweighted average of the five pillars' scores.

The Technical Appendix at the end of this paper provides a detailed overview of the variables used in the two indexes[21], together with data source information. In addition, a table (Table 3) with the rankings and scores for each variable is included for easy reference.

Latin America's Attractiveness for Private Investment in Infrastructure: Findings of the IPIAI

Table 1 shows the IPIAI's rankings and scores by pillar for the 12 Latin American countries covered in the research, while Table 2 presents the IQGI's results. Table 3 in the Appendix of this paper includes the rankings and scores of each variable comprising the two indexes.

This section will focus on the country-specific attractiveness for private investment in infrastructure, highlighting strengths and weaknesses of each assessed country at the pillar, sub-pillar and variable level. Such analysis will be complemented by a snapshot of the infrastructure gap, hence the potential opportunity for investors, for each country. For easy reference, a figure showing national performance in each of the IPIAI's eight pillars compared to Chile (the best performer in the index), the regional average (without Chile) and a table indicating the national infrastructure gap by type of infrastructure are presented below, for each of the countries assessed.

Table 2: The Infrastructure Quality Gap Index

Overall index

Rank	Country	Score
1	Bolivia	6.7
2	Peru	5.5
3	Colombia	4.9
4	Venezuela	4.5
5	Brazil	4.4
6	Guatemala	4.2
7	Uruguay	4.1
8	Dominican Rep.	3.8
9	Argentina	3.8
10	Mexico	2.7
11	El Salvador	2.5
12	Chile	1.4

Table 1: The Infrastructure Private Investment Attractiveness Index by Pillar

Overall index

Rank	Country	Score
1	Chile	5.4
2	Brazil	4.4
3	Colombia	4.3
4	Peru	4.2
5	Mexico	4.0
6	Uruguay	4.0
7	El Salvador	4.0
8	Guatemala	3.6
9	Argentina	3.4
10	Venezuela	3.4
11	Bolivia	3.3
12	Dominican Rep.	3.3

Subindex I: General investment environmental factors

Rank	Country	Score
1	Chile	5.6
2	Mexico	4.6
3	Brazil	4.4
4	Colombia	4.4
5	El Salvador	4.3
6	Uruguay	4.3
7	Peru	4.2
8	Dominican Rep.	4.0
9	Guatemala	3.8
10	Argentina	3.8
11	Bolivia	3.4
12	Venezuela	3.1

Subindex II: Infrastructure investment specific factors

Rank	Country	Score
1	Chile	5.3
2	Brazil	4.3
3	Peru	4.3
4	Colombia	4.2
5	Uruguay	3.7
6	Venezuela	3.6
7	El Salvador	3.6
8	Mexico	3.5
9	Guatemala	3.5
10	Bolivia	3.3
11	Argentina	3.0
12	Dominican Rep.	2.7

Pillar 1: Macro environment

Rank	Country	Score
1	Chile	5.6
2	Peru	4.7
3	Mexico	4.7
4	Colombia	4.4
5	El Salvador	4.1
6	Guatemala	4.0
7	Brazil	4.0
8	Venezuela	3.8
9	Argentina	3.7
10	Bolivia	3.6
11	Dominican Rep.	3.5
12	Uruguay	3.5

Sub-Pillar 1.A: Macroe

Rank	Country	Score
1	Chile	6.4
2	Mexico	5.5
3	Peru	5.1
4	El Salvador	5.0
5	Guatemala	4.9
6	Colombia	4.6
7	Brazil	4.1
8	Bolivia	4.0
9	Dominican Rep.	3.3
10	Uruguay	3.3
11	Venezuela	3.2
12	Argentina	2.6

Sub-Pillar 1B: Macro

Rank	Country	Score
1	Argentina	4.9
2	Chile	4.9
3	Venezuela	4.3
4	Peru	4.3
5	Colombia	4.1
6	Mexico	3.9
7	Brazil	3.8
8	Dominican Rep.	3.6
9	Uruguay	3.6
10	El Salvador	3.3
11	Bolivia	3.2
12	Guatemala	3.1

Table 1: (continued)

Pillar 2: Legal Framework

Rank	Country	Score
1	Chile	4.5
2	Uruguay	4.4
3	El Salvador	3.8
4	Colombia	3.7
5	Guatemala	3.5
6	Mexico	3.3
7	Peru	3.3
8	Dominican Rep.	3.1
9	Brazil	2.9
10	Argentina	2.9
11	Bolivia	2.7
12	Venezuela	2.1

Sub-pillar 2.A: Regulatory efficiency

Rank	Country	Score
1	Chile	5.0
2	El Salvador	4.0
3	Mexico	4.0
4	Colombia	4.0
5	Uruguay	4.0
6	Dominican Rep.	3.7
7	Guatemala	3.7
8	Brazil	3.6
9	Peru	3.6
10	Argentina	3.3
11	Bolivia	3.0
12	Venezuela	2.9

Sub-pillar 2.B: Public ethics

Rank	Country	Score
1	Chile	4.6
2	Uruguay	4.3
3	El Salvador	3.9
4	Guatemala	3.1
5	Peru	3.1
6	Mexico	3.0
7	Colombia	3.0
8	Brazil	2.6
9	Dominican Rep.	2.4
10	Bolivia	2.3
11	Argentina	2.3
12	Venezuela	1.9

Sub-pillar 2.C: Effectiveness of dispute settlement procedures

Rank	Country	Score
1	Uruguay	5.0
2	Colombia	4.2
3	Chile	3.9
4	Guatemala	3.5
5	El Salvador	3.5
6	Dominican Rep.	3.2
7	Peru	3.2
8	Argentina	3.1
9	Mexico	3.0
10	Bolivia	2.8
11	Brazil	2.6
12	Venezuela	1.5

Pillar 3: Political risk

Rank	Country	Score
1	Chile	6.8
2	Brazil	5.5
2	Mexico	5.5
4	El Salvador	5.3
4	Uruguay	5.3
6	Dominican Rep.	5.0
7	Colombia	4.8
7	Peru	4.8
9	Argentina	4.3
10	Guatemala	4.0
11	Venezuela	3.0
12	Bolivia	2.8

Pillar 4: Ease of access to information

Rank	Country	Score
1	Chile	5.6
2	Brazil	5.4
3	Colombia	4.8
4	Mexico	4.7
5	Bolivia	4.4
6	Argentina	4.3
7	Dominican Rep.	4.3
8	El Salvador	4.1
9	Uruguay	4.0
10	Peru	4.0
11	Guatemala	3.9
12	Venezuela	3.6

Pillar 5: Financial markets enablers

Rank	Country	Score
1	Chile	4.9
2	El Salvador	3.8
3	Brazil	3.8
4	Argentina	3.7
5	Peru	3.6
6	Mexico	3.6
7	Colombia	3.4
8	Guatemala	2.4
9	Uruguay	2.3
10	Venezuela	2.2
11	Bolivia	2.2
12	Dominican Rep.	1.5

Pillar 6: Track record of private investments in infrastructure

Rank	Country	Score
1	Chile	5.3
2	Peru	4.8
3	Brazil	4.6
4	Venezuela	4.5
5	Guatemala	4.4
6	Bolivia	4.1
7	El Salvador	3.6
8	Colombia	3.2
9	Uruguay	3.0
10	Mexico	2.5
11	Dominican Rep.	2.0
12	Argentina	2.0

Pillar 7: Government and society (willingness to pay)

Rank	Country	Score
1	Chile	5.3
2	Uruguay	4.8
3	Colombia	4.7
4	Venezuela	4.7
5	Brazil	4.5
6	Mexico	3.9
7	Argentina	3.2
8	Dominican Rep.	3.1
9	Guatemala	3.0
10	Peru	2.9
11	Bolivia	2.8
12	El Salvador	2.4

Pillar 8: Government readiness for private investments

Rank	Country	Score
1	Peru	5.8
2	Colombia	5.6
3	Chile	5.5
4	Uruguay	4.8
5	El Salvador	4.6
6	Brazil	4.5
7	Bolivia	4.2
8	Dominican Rep.	4.2
9	Mexico	4.1
10	Guatemala	4.0
11	Venezuela	3.2
12	Argentina	3.1

Argentina

In terms of its environment's attractiveness for private investment in infrastructure, Argentina is ranked 9th within the country sample, underperforming Chile and the regional average in almost all dimensions (see Figure 12a).

In particular, the track record on private investment in infrastructure, at 2.01 (out of 7), represents, quite predictably, the biggest hindrance to the country's potential to attract private investors, with one of the highest percentages of projects distressed or cancelled (44%) and what seems to be a habit of the government to terminate contracts without reasonable compensation (2.00); public ethics, at 2.33, is assessed as rather poor, with widespread diversion of public funds (2.49), irregular payments in connection to the awarding of public contracts (3.15), favouritism in decisions of public officials (2.21) and low levels of trust in the financial honesty of politicians (1.47). In addition, the dispute settlement system (3.09) and regulatory efficiency (3.34) are not up to international standards, coupled with a relatively low degree of application and speed of rulings (3.00) and quite important levels of red tape and bureaucracy (2.49).

Macroeconomic stability, with a score of 2.58, remains a concern notwithstanding the progress made in recent years. Even though the country is currently experiencing solid growth, the high volatility of GDP over the past decade (see Figure 4), has been significantly and negatively impacting highly-leveraged infrastructure projects.

Other areas of relative weakness are to be found in the scarce degree of readiness of the government to deal with and manage private investment in infrastructure and the government and society dimension, the degree of satisfaction and approval of public companies' privatization is quite low (1.93) and the indicators on the willingness to pay point to important cost recovery risks, with an important degree of tax evasion in the formal sector (3.00), a relatively large informal market (2.85) and pervasive subsidies (2.96).

Even though, as shown in Figure 12b, Argentina displays one of the lowest infrastructure gaps (3.77) in the region (ranking 9th out of 12 countries), pointing to an already fairly developed infrastructure network, especially ports (2.33). This is essentially the result of considerable investments made during the 1990s before many infrastructure projects were cancelled or distressed as a consequence of the macroeconomic crisis. It is only a matter of time before the quality of infrastructure starts to suffer from insufficient investments. Therefore, it is imperative to put the improvement of the investment environment at the top of the national agenda and to adopt all the necessary measures and policies to make private investors, national and international alike, feel confident to invest in long-term projects in the country.

On a more positive note, Argentina displays a relatively good macro attractiveness (4.87), with adequate GDP growth rates (3.94%) and a satisfactory pool of qualified labour, thanks to a

Figure 12a: Investment Attractiveness (IPIAI)

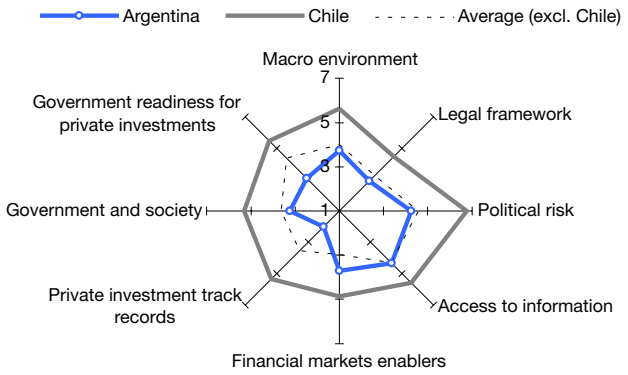
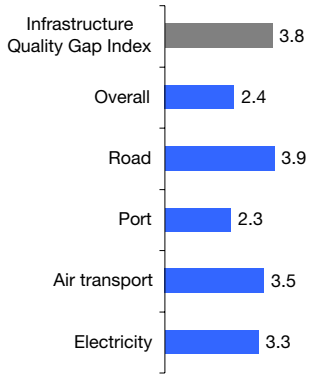


Figure 12b: Infrastructure Quality (IQGI)



relatively large number of local scientists (4.44) and engineers and the relative ease of hiring foreign labour (5.15). Argentina also scores rather well in selected variables of the ease of access to information pillar, relating mainly to the development of e-government services, the availability of statistics publications and openness of dialogue and decision-making process.

Lastly, Argentina displays the second most sophisticated bond markets (4.60) and fairly developed pension funds (4.46).

Bolivia

With an overall score of 3.34, Bolivia displays one of the poorest performances for the attractiveness of its environment for private investment, ranking penultimate in the sample and lingering behind or barely matching the national average in all IPIAI pillars of attractiveness, as shown in Figure 13a.

Bolivia's performance is especially hindered by a number of manifest weaknesses: the insufficient development of its financial market enablers (2.17) being one of the first that comes to mind. Indeed, Bolivia ranks penultimate in this dimension, displaying undersized equity (2.30) and bond (2.05) markets, one of the highest lending rates in the region (16.62%) and very little availability of long-term credit (1.00, corresponding to 11th rank).

Another relative disadvantage is to be found in the quality of the legal framework, which, at 2.72, is among the worst in the region. Once again, public ethics is the main weakness (2.33), with especially high levels of favouritism in the decisions of public officials (2.07) and irregular payments on public contracts (3.30), reflected in the lowest level of trust in politicians' financial honesty (1.34) in the sample. Regulatory efficiency (3.04) and effectiveness of dispute settlement procedures (2.80) are also ranked among the worst in the region, at 11th and 10th, respectively.

Quite predictably, given Bolivia's recent history and controversial policies on national resources[22], the country displays the highest political risk levels (2.75) in the sample, particularly with respect to the expropriation (2.00) and currency transfer (2.00) risks, made worse by the lack of propensity by the government to pay reasonable compensation in the event of expropriation (3.00).

Last, but not least, the government and society dimension is another area of concern, not only because of the extremely low satisfaction rates shown by Bolivian citizens towards privatization of public companies (2.63) and public services (3.06), but also for the bad scores registered by all the indicators that proxy the national willingness to pay for the provision of public services, namely the rather high tax evasion in the formal sector (3.00) and the largest informal market in the sample (12th).

Figure 13a: Investment Attractiveness (IPIAI)

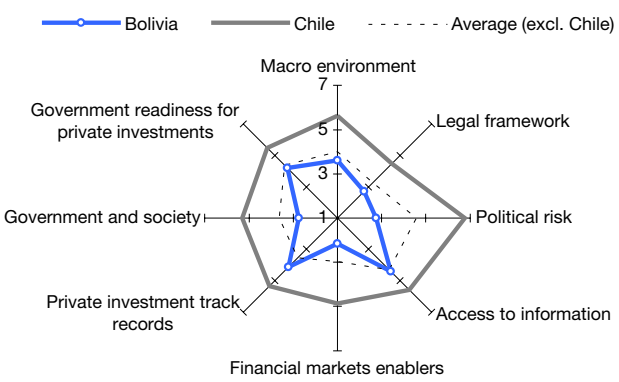
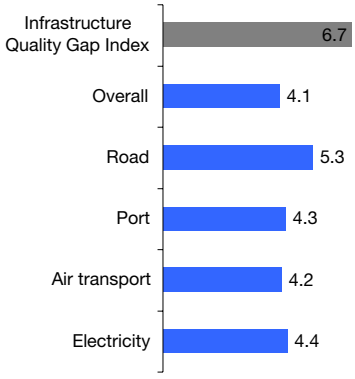


Figure 13b: Infrastructure Quality (IQGI)



But the picture for Bolivia also has a bright side, namely the good showing in the ease of access to information pillar (4.39) and, especially, the track record for private investment in infrastructure (4.12). Bolivia ranks 5th and 6th, respectively, in those aspects.

In particular, the country exhibits the highest private investment ratio in infrastructure projects from 1994 to 2005 (5.6% of GDP) and the 5th largest prevalence of project finance in the region (3.9% of GDP). a result largely attributable to the resource extraction industry. However, the litigation track record is not as immaculate as it should be; with 13% of all the infrastructure projects cancelled or distressed between 1990 and 2005, Bolivia ranks 10th in the sample in this aspect.

The country also gets good marks in the related dimension of government readiness for private investment in infrastructure (4.19), ranking 7th in the region. One has to hope that the above framework, no doubt a legacy of the liberal policies adopted in the nineties, will not be discontinued by the current administration. Indeed, considering that Bolivia, with an overall score of 6.66, shows the highest infrastructure quality gap in the region (Figure 13b), with roads (5.27), electricity (4.37), ports (4.31) and air transport (4.18) in serious need of upgrading and extension, it is of the utmost importance for the country to keep a private investment-friendly regulatory framework and address the other shortcomings referenced above in view of increasingly involving the private sector in infrastructure financing. In effect, given Bolivia's high indebtedness levels (54.6% of GDP) and widespread tax evasion, the public sector cannot afford the massive investments required to fill the infrastructure gap.

Brazil

Brazil ranks second on the IPIAI, just behind Chile, with a large difference in scores (4.40 and 5.43, respectively) witnessing the huge gap between Chile and the rest of the region. As Figure 14a shows, Brazil outperforms the regional average on six of the eight pillars comprising the IPIAI.

Among the factors explaining these good results is the low political risk prevailing in Brazil (second only to Chile), which achieves the best possible score (7.00) for war risk and a totally respectable 6.00 for expropriation. Also remarkable is the track record of private investments in infrastructure (3rd), with few projects cancelled or distressed (3% of total investment in infrastructure), a relatively high level of private investment in infrastructure projects over the period 1994-2005 (2.2% of GDP) and high prevalence of project finance (5.6% of GDP).

Brazil also distinguishes itself for ease of access to information (2nd). In this pillar, the country tops the region on three indicators, namely, the quality of its statistical information, the transparency and openness of the dialogue and decision-making process, as well as the consistency, continuity and

Figure 14a: Investment Attractiveness (IPIAI)

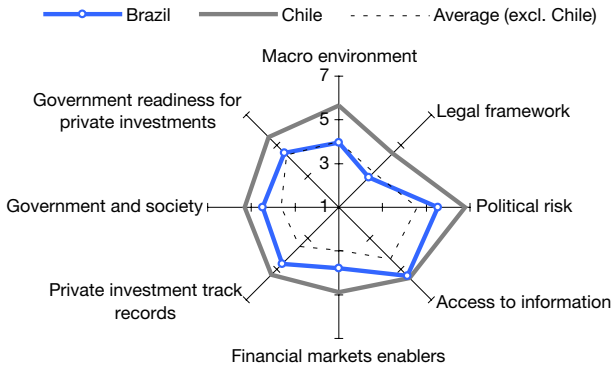
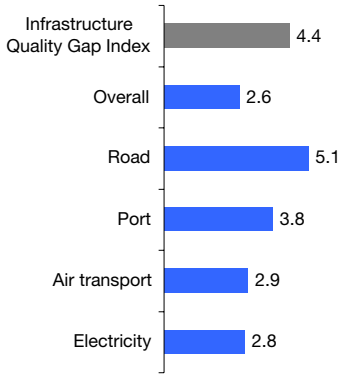


Figure 14b: Infrastructure Quality (IQGI)



predictability of the privatization process. In addition, the government receives good marks for the availability of online services (2nd) and its e-readiness (3rd). The only black spot on this otherwise remarkable performance is a low score of 3.37 (out of 7) and 9th rank for the quality of information regarding changes in policies.

Despite its satisfactory overall performance, Brazil still suffers from weaknesses in a number of areas captured by the index. Of particular concern is the quality of the country's legal framework. Its mediocre 9th place is mainly due to inefficiencies in the regulatory framework (3.61) and very poor public ethics (2.62). In this regard, the business community displays little trust in politicians (1.39) and expresses doubt about their impartiality; diversion of public funds (2.07) and, to a lesser extent, the pervasiveness of irregular payments in the awarding of public contracts (4.32) are also widespread. Furthermore, given the importance of the quality and independence of the judiciary in determining investment attractiveness, the dismal penultimate rank of Brazil, only ahead of Venezuela, raises a flag over an issue that should be addressed as a priority. It also offers an explanation of why, despite the efforts in promoting private investments (Brazil ranks a decent 6th on this pillar), it takes so long to get projects off the ground.

The macroeconomic environment also constitutes an area for improvement with the country ranking 7th on this pillar with a score of 3.96. The government has been running a deficit each year since 1995. In 2005, the deficit reached 3.28% of GDP, the highest among the 12 countries under review. The level of indebtedness, down from almost 60% in 2003, remains high at 49.8% of GDP. Furthermore, the poor quality of the educational system (2.55) and difficulty of hiring foreign labour (4.65, corresponding to a penultimate position in the sample) may deter private investors in need of a skilled and ample workforce. On a more positive note, Brazil receives among the best marks for the soundness of its financial system (1.09). Finally, the size of its internal market – Brazil is currently the world's 10th largest economy – constitutes a non-negligible advantage that can certainly lure potential investors.

The 5th rank of Brazil on the IQGI (see Figure 14b) betrays the relatively poor state of its infrastructure and the need for further investment. In particular, the IQGI reveals important shortcomings, and thus opportunities, in road infrastructure (5.08, 2nd rank). Also, as witnessed by the large port infrastructure gap on the IQGI (3.8, 3rd rank), maritime shipping suffers from insufficient capacity. With almost 50,000 kilometres of navigable rivers, Brazil possesses great potential for river transport, which had remained essentially untapped until the creation in 2002 of ANTAQ, the regulatory agency for water transport.

Chile

Chile is the best performer in the region, both in terms of the attractiveness of its environment for private investment in infrastructure and development of its infrastructure network. Nevertheless, the indexes highlight a number of areas in which there is room for improvement.

In terms of environment's attractiveness for private investment, Figure 15a shows that Chile is outperforming the rest of the region in every dimension assessed. Among Chile's many notable competitive advantages are the exceptional levels of macroeconomic stability (6.39), with the country displaying a sound banking system, low inflation (3.50%) and debt (4.10% of GDP) levels, a healthy budget surplus (4.7% of GDP), a stable exchange rate and little GDP volatility; and the almost total absence of political risk (6.75). Chile's success in effectively reducing public debt levels in the last decades contrasts with the experience of the rest of the region and has allowed the country to cut the burden of interest payments and increase spending in infrastructure, education and public health.

Moreover, Chile scores remarkably well in the ease of access to information pillar (5.57), thanks to its extremely well-developed e-government services, clear information on policy changes (5.04), transparency and openness of statistics publications (7.00) and dialogue and decision-making process (5.00). The only weakness in this area is represented by a perceived lack of consistency and continuity in the privatization processes (1.00).

The government readiness to deal with private investment in infrastructure is also well ranked (5.50, 3rd overall), with efficient and well-developed PPP regulations, government consistency and continuity on economic matters and openness of public services to private capital. Indeed, Chile has been at the forefront of PPP projects in infrastructure: its "build, operate and transfer" (BOT) contracts, put in place in the early 1990s, allow private firms to build and finance a particular infrastructure project and to collect user fees for up to 30 years, after which the infrastructure becomes property of the state. Under this model, 21 concessions had been granted to private investors by the end of 1998, with a total investment of US$ 3.6 billion in highways and airport development[23]. On a similar note, Chile displays a world-class track record on private investment in infrastructure (5.35), with few projects distressed or cancelled (2% of total investment) and virtually no contract termination by the government.

Chile also gets the best marks in the government and society pillar (5.30), with a high degree of satisfaction especially for the privatization of public companies (5.57) and a well-developed culture of paying for the provision of public services.

If there is an area of relative weakness in the country's environment for private investments, it is the effectiveness of the dispute settlement procedures (3.86), with improvements needed in the ease of shareholder suits (4.00) and degree of application and speed of rulings (3.00).

In view of the above, it comes to no surprise that Chile presents the smallest infrastructure gap with the control country (see Figure 15b), displaying the most developed and best quality infrastructure network in the sample. In particular, Chile has almost matched Germany in the development of its port infrastructure (with an opportunity score of 0.90). On the other hand, road (3.16) and, to a lesser extent, electricity (2.95) infrastructure is assessed as less developed and therefore offering more investment opportunities.

Colombia

With an overall score of 4.33, Colombia ranks 4th overall in the IPIAI, outperforming the regional average on all dimensions of the index bar its track record on private investments in infrastructure, and surpassing Chile for government's readiness in dealing with private investment in infrastructure (see Figure 16a).

Ranked 2nd just behind Peru, the readiness of Colombia's government to deal with and facilitate private investments in infrastructure (5.63) is among the main drivers of the country's good performance. It receives good to excellent marks on all the components of this pillar. In particular, with a score of 6.38, it ranks 1st in the development and quality of the PPP regulatory framework. It also tops the region for efficiency of the license granting process (5.00), ease of purchasing land and obtaining rights of passage (7.00), transparency of the privatization process (5.50), as well as openness of public services to private capital (7.00).

Figure 15a: Investment Attractiveness (IPIAI)

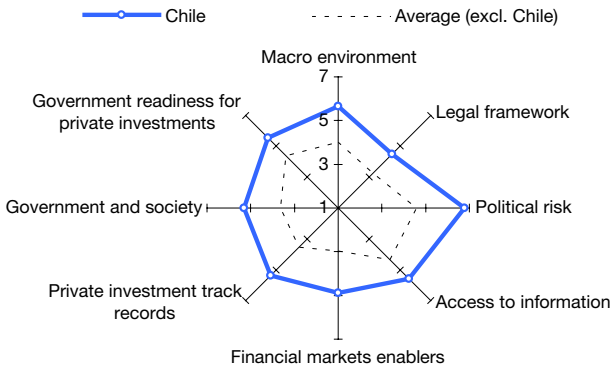
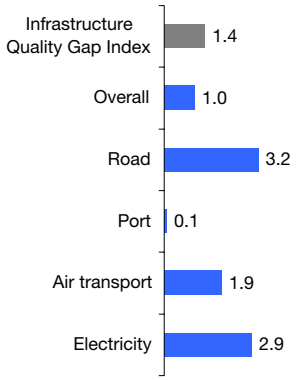


Figure 15b: Infrastructure Quality (IQGI)



Colombia, with a score of 5.63, also shows the way to the region with regard to the government/civil society relations dimension. The degree of satisfaction on the privatization of public companies (5.88) and public services (4.92) places the country in 4th and 5th position, respectively. Furthermore, Colombia displays among the lowest tax evasion levels (5.00) and smallest informal market sizes (3.43) in the region.

Colombia still carries the burden of its troubled past, ranking last in the war risk pillar (3.00), which assesses the risks of external conflict, domestic political violence and terrorism. Despite the outstanding progress made by the Uribe administration in recent years in pacifying the country and consequent improved public security levels, it will be a long time before the guerrillas are demilitarized and violence associated with drug trafficking is reduced to reasonable levels.

Colombia receives low marks (3.22) in terms of track record on private investments in infrastructure, resulting in an unflattering 8th rank. The country exhibits low levels of project finance deals – investments in the extraction industry are barely picking up – and weak private investment in infrastructure, which accounted for 1.1% of GDP between 1994 and 2005.

Finally, the development of financial markets (3.41) constitutes another relative weakness for the country (7th overall). In particular, Colombia achieves a low score (3.30) and rank (8th) in the development of the equity market. As for the development of pension funds, their total value amounts to barely 10% of the GDP (versus 65% displayed by Chile), while the bulk (82%) of savings still goes to treasury bonds, the result of unsophisticated allocation strategies and the scarcity of attractive opportunities outside the state realm. Investing in infrastructure certainly represents a chance for Colombia to meet the pension fund asset diversification challenge. It also creates a virtuous circle in which long-term capital and, to some extent, political insurance serve to attract even more private investors ready to invest in infrastructure projects alongside pension funds.

With a score of 4.90 (3rd overall), the IQGI underscores relatively large opportunities for potential investors in infrastructure (see Figure 16b), especially in electricity (4.80) and roads (4.70). Hence, it is encouraging to see that Colombia has sorted out most of the environmental aspects impacting on the national attractiveness for private investment. However, additional effort is required to improve the relative weaknesses outlined above, for the country to be really able to leverage private investment and effectively upgrade its infrastructure network to top-class levels.

Figure 16a: Investment Attractiveness (IPIAI)

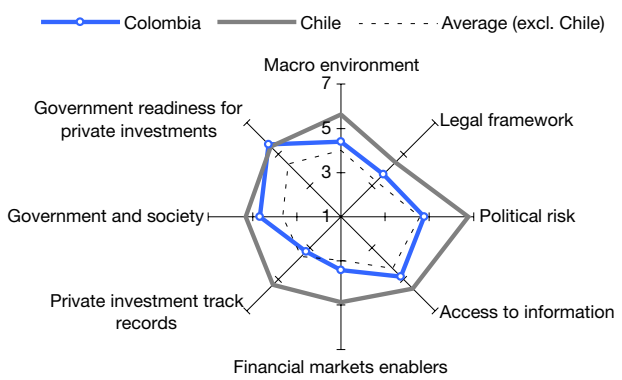
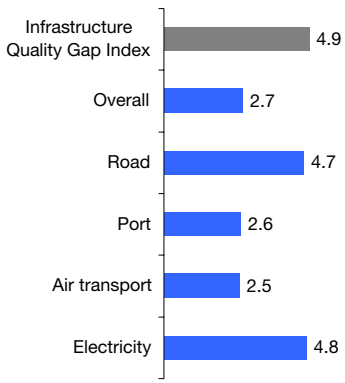


Figure 16b: Infrastructure Quality (IQGI)



Dominican Republic

Dominican Republic, with an overall score of 3.43, ranks last in terms of the attractiveness of its environment for private investment in infrastructure. Figure 17a shows that not only does the country lag behind Chile in all attractiveness dimensions measured by the IPIAI, but it also underperforms the regional average in most IPIAI pillars. Its macroeconomic environment, although quickly improving, is still recovering from the banking crisis at the beginning of the decade.

With regard to political risk, Dominican Republic, with a score of 5.00, is assessed as being rather safe, especially from war and civil disturbances and risk of expropriation (both scoring 6.00), with the additional mitigating element of the customary payment of reasonable compensation in the event of expropriation (5.00). On the other hand, the currency convertibility and transfer risks (3.00) are not completely ruled out for the country in the long run, probably due to the macroeconomic instability still troubling the island.

The country, at 4.30, also scores fairly well on the ease of access to information, with a relative availability of e-government services, high degree of transparency of statistics publications (5.50) and openness of the dialogue and decision-making process (5.00).

Moreover, Dominican Republic achieves a decent score for the readiness of the government to deal with private investment (4.15), a quality honed by the extensive involvement of the private sector in the development of the tourism industry over the past two decades. At the same time, the government is not seen as consistent enough in its economic policies (3.00), the provision of public services is not perceived as being very open to private capital (3.00) and there seems to be an issue with the transparency of privatization procedures (2.50).

On a more negative note, a number of weaknesses are highlighted by the IPIAI. In this sense, areas to be addressed as a priority to improve the overall infrastructure investment attractiveness of the country, are the lack of sufficient financial market sophistication and the rather inefficient regulatory framework. The country scores a meagre 1.51 and is last in the sample for its financial market enablers, displaying undersized equity (1.00) and bond (2.05) markets, unsophisticated pension funds (1.00), with very little portfolio diversification (3.13) and very limited availability of long-term credit (1.20). The latter represents a severe hindrance for increasingly involving the private sector in infrastructure financing.

The quality of the rule of law (3.11) is another concern in Dominican Republic, notably the dreary standards of public ethics observed (2.38). Indeed, the high levels of favouritism in public officials' decisions (1.93) and diversion of public funds (2.59) are fuelling a deep distrust of the financial honesty of politicians (1.56) by civil society. Nor does the country score particularly well on its regulatory efficiency for

Figure 17a: Investment Attractiveness (IPIAI)

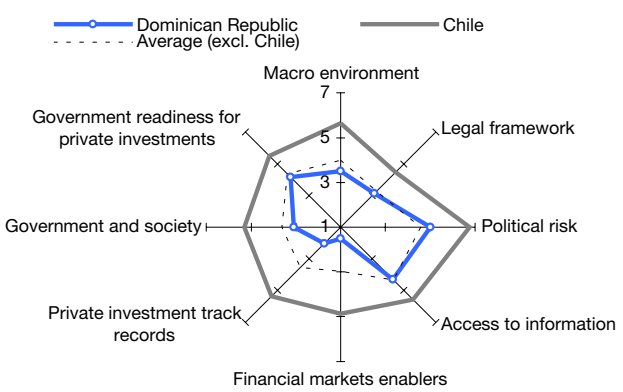
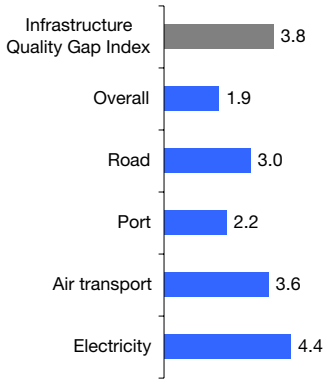


Figure 17b: Infrastructure Quality (IQGI)



private investment (3.70) and effectiveness of dispute settlement procedures (3.24).

Lastly, Dominican Republic's performance is dragged down by a very poor track record on private investment in infrastructure (2.02), the second worst after Argentina, with 48% of total investments distressed or cancelled. Although the vast bulk of the problems are concentrated in the electricity sector, in which Dominican Republic has a very particular history of subsidies and distortions, it also deters investors in other sectors. Getting the electricity sector in order is a priority to restore confidence among investors.

Such a problematic environment is mirrored by a rather ample investment quality gap (3.80), offering many opportunities for investment, especially in the electricity (4.41) and air transport (3.63) infrastructures, which are in desperate need of improvement according to the assessment made by the IQGI (see Figure 17b).

El Salvador

El Salvador appears in the second half of the rankings of the IPIAI with a rank of 7 and a score of 3.97 (see Figure 18a). This middling performance is the result of a mixture of very different performances across the eight pillars of the index.

El Salvador ranks an impressive 2nd (3.81) for the state of its financial markets behind Chile, which is in a class of its own (4.86). This good result is mainly due to a relatively low lending rate of 7.5%, the third lowest in the region, good long-term credit availability (4.00, 2nd) and well-developed pension funds. Although state bonds still represent 80% of portfolios, the total size of pension funds amounts to some 17% of GDP, more than any other country in the region, bar Chile (65%). El Salvador is the only dollarized economy included in the analysis. The financial market enablers' evaluation is strongly related to long-term credit and stability, which is one of the benefits offered by dollarization.

Equally remarkable is the country's performance in the legal framework pillar. Third behind front-runners Chile (4.47) and Uruguay (4.44), El Salvador (3.78) does consistently well across the pillar. It places 2nd (4.00) in the efficiency of its regulatory framework, 5th in the effectiveness of the judiciary in settling disputes and 3rd in public ethics. Of the four indicators comprising the latter, El Salvador ranks 3rd, outperformed only by Chile and Uruguay. Corruption is one major obstacle to the establishment of a propitious investment climate and, while El Salvador is not yet free of corruption, those encouraging results bode well for the future. Still on the positive side, El Salvador enjoys low levels of political risk (5.33).

More mixed is the performance in the macro environment pillar (4.14, 5th). El Salvador scores an encouraging 5.00 (4th) on the macro stability sub-pillar, thanks to controlled inflation (4.10%,

Figure 18a: Investment Attractiveness (IPIAI)

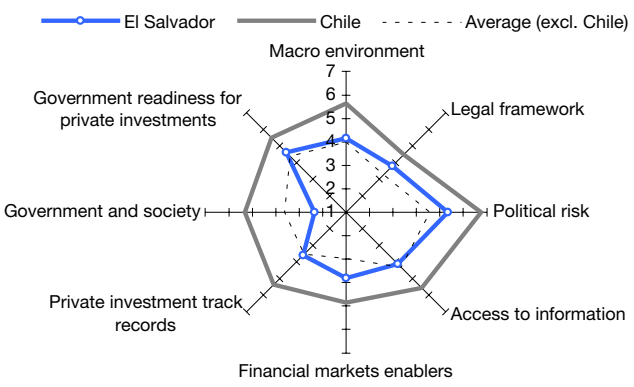
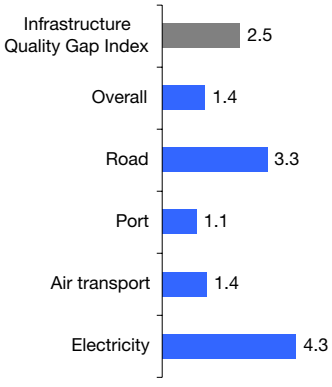


Figure 18b: Infrastructure Quality (IQGI)



corresponding to 4th rank), zero exchange rate volatility, sovereign debt ratings (BB+) near investment grade and a sound banking system (6.00, corresponding to 3rd position). On a less positive note, El Salvador ranks quite poorly in the macro attractiveness sub-pillar (10th), partly due to a stagnating GDP, expected to grow at an unimpressive rate of 2.6% per year between 2001 and 2010, the lowest among the countries covered. El Salvador is also penalized for the small size of its economy (antepenultimate, ahead of Uruguay and Bolivia). The availability of scientists and engineers in the country also seems to be an issue (a score of 3.69), partly mitigated by the ease of hiring foreign labour. In this latter indicator, El Salvador ranks first with a score of 5.67. The quality of its educational system places the country in 2nd position, just behind Colombia, although with a score of 3.40, it is by no means world class, reflecting the poor education standards in the region.

El Salvador's biggest weakness is to be found in the government/civil society relations dimension (2.35, 12th). This result is mainly due to low levels of public approval of the wave of privatization that took place during the 1990s. Other areas with room for improvement are the ease of access to information (4.11, 8th) and the track record of private investments in infrastructure (3.60, 7th).

El Salvador possesses good infrastructure, resulting in a low score (2.48) and rank (11th, ahead of Chile) in the IGQI (see Figure 18b). It tops the region for the quality of air transport infrastructure, resulting in the narrowest gap (1.43) with best-performing Germany. Liberalized in the 1990s, the electricity sector displays the biggest gap (4.27, 4th). This, and an increasing energy demand, makes this sector attractive for investment.

Guatemala

A glance at Figure 19a shows how Guatemala, ranked 8th in the region with a IPIAI score of 3.64, presents an attractiveness for private investment in infrastructure in almost total alignment with the regional average, save its track record in private investment in infrastructure. In this specific dimension, the country outstrips the region and comes near to Chile, with an overall score of 4.41, thanks in particular to an impeccable litigation track record with virtually no projects cancelled/distressed or contracts terminated by the government without reasonable compensation. These elements counterbalance the lower marks for private participation in infrastructure projects (1.3% of GDP) and the very limited use of project finance as a way to structure project funding (which may have to do with the fact that the legislation does not provide for single purpose vehicle legal entities at all).

Macroeconomic stability (4.85) comes out as another strength in the country's performance, with low GDP (6.89) and nominal exchange rate (6.68) volatility, moderate levels of government debt compared to the rest of the region (24.5% of GDP)

Figure 19a: Investment Attractiveness (IPIAI)

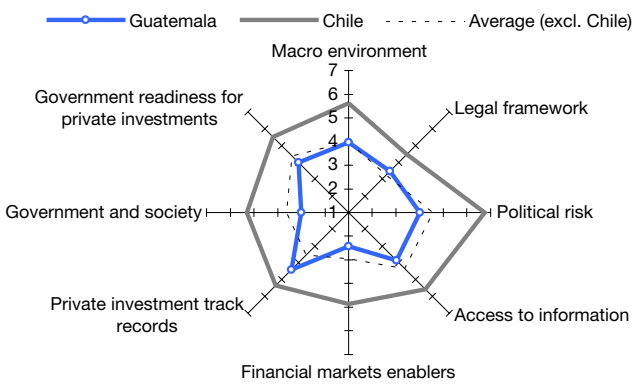
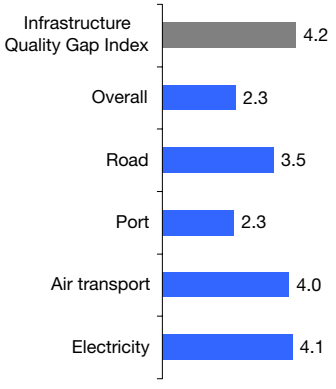


Figure 19b: Infrastructure Quality (IQGI)



and a sound banking system (5.33), reflected in the rather optimistic attitude of the national business sector on the economy's short-term stability (4.85).

Guatemala displays a mixed record for its government's readiness to deal with and manage private investment in infrastructure (3.98). It has the lowest score in PPP framework development and the government is known for taking a very hands-off approach to land acquisition, particularly in road projects, which has caused projects to be delayed for decades. The fairly centralized decision-making process (5.50) certainly plays in favour of Guatemala for investors that do not have to deal with too many agencies. In addition, the country also scores fairly well with regard to the transparency of privatization procedures (4.00) and the openness of public service provision to private capital (4.00).

On a less positive note, public support for privatization has been fairly low even though the actual track record in infrastructure is rather positive. In the case of privatization, it is important to earn public support. Without it, projects can be blocked by the community for years[24]. The government and private sector have to better make the case for privatization.

On the other hand, Guatemala scores particularly poorly on financial market enablers (2.43), with underdeveloped equity markets (1.30) and very small, undiversified and almost exclusively state-owned pension fund portfolios (1.30). The provisional system in Guatemala has remained essentially the same since the 1940s. Bond market development (2.65) and availability of long-term credit (2.58) are assessed slightly more positively, but the scores still point to much room for improvement. As in the case of Dominican Republic, further development of the financial markets should be prioritized by the government, in view of providing the private sector with locally available financial resources to invest in infrastructure.

Furthermore, Guatemala seems to be troubled by the poor public ethics displayed to some extent by all countries in the region, including Chile. With an overall score of 3.15 in the public ethics pillar, it displays concerning levels of corruption and little trust in the financial honesty of politicians (2.04).

Considering the rather high infrastructure gap (4.23) shown in Figure 19b, Guatemala should focus on addressing the weaknesses outlined above in order to promote private participation in infrastructure expansion and upgrading, especially in air transport (4.00) and electricity (4.12), where the largest investment opportunities are to be found.

Mexico

With an overall score of 4.04, Mexico ranks 5th in the IPIAI. While its performance is excellent on those factors that determine the general investment environment (2nd), Mexico seems to be lagging behind in infrastructure-specific factors (8th). In this sub-index, the regional average exceeds Mexico's score.

To begin with the most positive aspects of its performance, Mexico enjoys the second lowest level of political risk (5.50). Only its relatively poor score in terms of compensation granted by the government in the event of expropriation (3.00) prevents Mexico from topping this pillar (see Figure 20a).

Further strengths are to be found within the macro environment pillar in which Mexico, at 4.69, ranks 3rd overall. Mexico is the second largest economy behind Brazil among the countries under review. Its openness in the context of NAFTA and its proximity with the US and Canada ensure access to a vast external market. In addition, the country fares particularly well on the macro stability sub-index (5.48, 2nd after Chile) thanks to relatively low inflation (3.5%), indebtedness (20.5% of GDP) and exchange rate volatility, as well as good ratings on its sovereign debt. As for the macro attractiveness sub-index (3.90), the performance is less flattering. GDP is expected to grow at an annual rate of 2.7% over the period 2001-2010, slower than the 3.3% forecast for the entire Latin American region[25]. The limited availability of scientists and engineers, the difficulty of hiring foreign labour and a rather poor quality educational system constitute issues that need to be addressed in order to make Mexico a more attractive place for investors.

A third area where Mexico receives good marks is the access to information (4.73). The country, at 5.50, ranks 1st in the continuity, clarity and

predictability of the privatization process. The government is 2nd in e-readiness (behind Chile) and for the openness of the decision-making process (behind Brazil).

Finally, among the four pillars capturing the general investment conditions, the legal framework is the one in which Mexico delivers an average performance. With a 6th rank and a score of 3.34, barely higher than the regional average (3.29), the country is overcome by Chile, Uruguay, El Salvador, Colombia and Guatemala. While the efficiency of the regulatory system is rather good (4.00), the experts and business community highlight the poor public ethics (3.04) and relative ineffectiveness of dispute settlement procedures (2.99) as major weaknesses.

Of more concern is Mexico's bleak performance on all the infrastructure-specific pillars with the exception of financial market enablers (3.58). However, access to credit in Mexico is still among the best in the region with a flagging lending rate of 9.7% in 2006 (4th lowest), equity (4th) and bond (2nd) markets are among the most developed in the region, and the country ranks 3rd in terms of availability of long-term credit, as witnessed by its recent success in raising very long-term debt in local currency.

At the same time, Mexico's poor track record in private investment in infrastructure contributes to dragging the country down on the IPIAI. Private infrastructure investment projects over the past decade represented only 0.8% of GDP, less than half the regional average (1.8%). Moreover, the World Bank reports that some 9% of projects in infrastructure were cancelled or distressed between 1990 and 2005 (9th). In terms of prevalence of project finance and contract termination by the government, Mexico ranks 7th and 6th, respectively. These types of project finance structures are simply not common in Mexico in relation to its size and its large energy and extraction sectors.

Mexico ranks a lacklustre 8th in its readiness for private investments in infrastructure. It is below the average in 5 out of 7 variables in this pillar. The government does not have a centralized office nor an efficient strategy to promote private investment in infrastructure. Tackling the issues and improving this area would yield positive results in a very short period of time.

Thanks to the good quality of its infrastructure, Mexico scores rather low (2.68, 10th) on the IQGI, lagging behind only El Salvador and Chile. Mexico's electricity (3.28) and air transport (3.14) infrastructures appear to offer the most opportunities, while the gap is narrower for port (1.21) and, to a lesser extent, road (2.99) infrastructure (see Figure 20b).

Figure 20a: Investment Attractiveness (IPIAI)

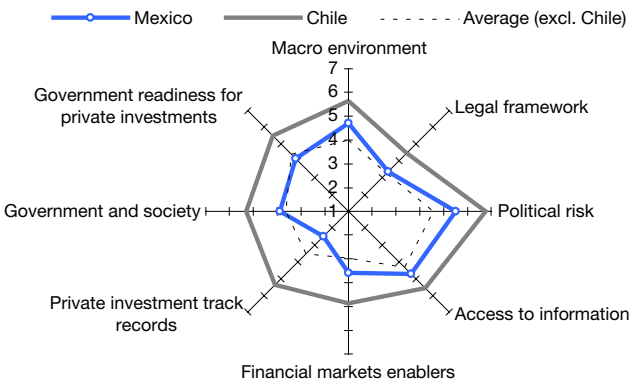
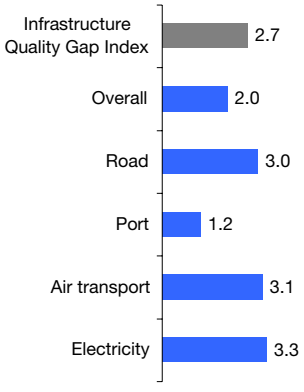


Figure 20b: Infrastructure Quality (IQGI)



Peru

Figure 21a depicts a rather heartening picture of the current state of Peru's attractiveness for private investment. With an overall IPIAI score of 4.23 and ranking 4th in the sample, the country outclasses the regional average in all pillars, coming rather close to Chile's performance in selected attractiveness dimensions (i.e. track record on private investment in infrastructure and, to a lesser extent, financial market enablers and macro environment) and even scores better than Chile for government readiness to deal with private investment in infrastructure, for which it ranks 1st in the region.

The snapshot above points to the fact that Peru has made significant progress in improving the conduciveness of its environment specifically for private investment in infrastructure, as confirmed by its 3rd position in the Infrastructure Investment Specific Factors sub-index, while its main weaknesses lie in the dimensions related to the more general investment environment. This highlights the special concern and corresponding efforts made by the country to promote private participation in infrastructure projects. In this sense, Peru's top scores (5.75) for government readiness for private investment in infrastructure are boosted by one of the best PPP regulatory frameworks in the sample (6.13), extremely efficient general and environmental license granting processes (5.00 and 6.40, respectively) and land purchase regulations (7.00), and on its exceptional degree of public consistency and continuity in economic matters (7.00).

The above represents a very encouraging trend given that, as shown in Figure 21b, Peru presents the second highest infrastructure gap (5.49) in the region after Bolivia, with significant opportunities for private investment especially in road (4.67), air transport (4.38) and electricity (4.23) infrastructures.

The government readiness to deal with and manage PPPs is also mirrored in Peru's satisfactory track record on private investment in infrastructure (4.81, 2nd in the region), both in terms of the prevalence of project finance and litigation track record, with few projects cancelled or distressed (4% of the total) and almost no contract termination by the government without reasonable compensation (7.00).

Among the other areas of relative strength are Peru's outstanding showing in macroeconomic stability (5.14), with moderate levels of public debt (31.70% of GDP) and deficit (0.30% of GDP), low inflation (2.40%), very stable exchange rates and quite sound banking system (5.74).

Peru also performs rather well compared to the region for its financial market enablers (3.62), in particular, for its rather developed equity (3.90) and bond markets (3.70) and its rather sophisticated and diversified pension funds (4.40 for development of pension funds and 4.61 for its portfolio allocation).

On a less positive note, Peru scores quite poorly in the government and society pillar (2.95, 10th in the region), not so much in the satisfaction and approval

Figure 21a: Investment Attractiveness (IPIAI)

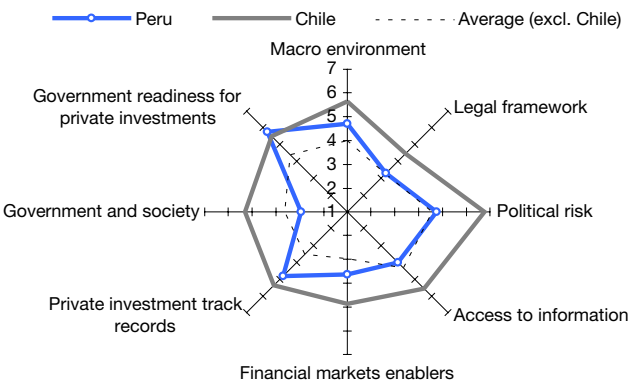
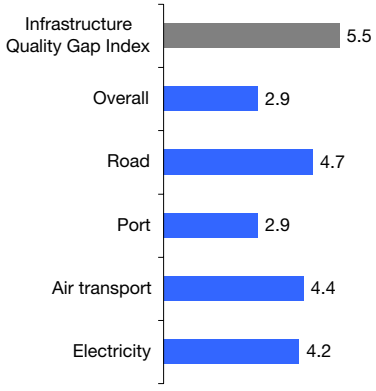


Figure 21b: Infrastructure Quality (IQGI)



rates of privatization of public companies (3.79) and services (4.41), but in the proxies used to gauge civil society's willingness to pay for the provision of services, with a high degree of tax evasion in the formal sector (1.00), a large informal market (2.25) and pervasive subsidies (3.29). Aware of these issues, the developers of several toll-road projects recently successfully earned the support of the community by dedicating significant resources.

Lastly, Peru does not seem to make an exception to the regional "sin" of poor legal frameworks and public ethics. In this sense, Peru obtains very mediocre scores for its legal framework (3.28), with particular weaknesses highlighted in the public ethics (3.09) and effectiveness of the dispute settlement system (3.18) sub-pillars. High levels of favouritism in the decisions of public officials (3.00) and public funds diversion (3.21) have led to one of the lowest degrees of trust in the financial honesty of politicians in the region (1.43). Additional reasons of concern are also represented by a judiciary rather dependent on political influences (1.95) and an inefficient legal framework for settling disputes (2.55), which does not ensure a timely or fast enough application of rulings (3.00).

Uruguay

With an overall score of 4.02, Uruguay ranks 6th in the IPIAI, with a rather mixed performance in terms of private investment attractiveness. Indeed, the country underperforms or barely matches the regional average in a number of areas, namely the macro environment, the ease of access to information, the track record on private investment in infrastructure and financial market enablers. Meanwhile, it surpasses the regional average and almost catches up to Chile in the quality of its legal framework and, to a lesser extent, the readiness of the government to deal with private investment and the government and society dimension (see Figure 22a). Clearly, Uruguay is still recovering from the 2001-2003 financial crises. The country should normally rate much higher in terms of attractiveness and there is no doubt that this will soon be the case.

Starting with what is seen to be a general weakness in the region, i.e. the legal framework, Uruguay at 4.44 ranks 2nd overall, confirming its long-standing good governance tradition, with outstanding public ethics standards (4.34) and the most effective dispute settlement procedures (5.00) in the sample, even better than Chile. The country not only displays little corruption (4.80 and 5.00 for the variables assessing the diversion of public funds and irregular payments in the award of public contracts, respectively) and favouritism in the decisions of public officials (4.03), but has a well-functioning and independent judiciary (4.93) and a very efficient legal framework for settling disputes (4.28), in which shareholders can easily sue officers and directors for misconduct (5.80).

Uruguay also scores well in the government and society dimension, with especially high approval

Figure 22a: Investment Attractiveness (IPIAI)

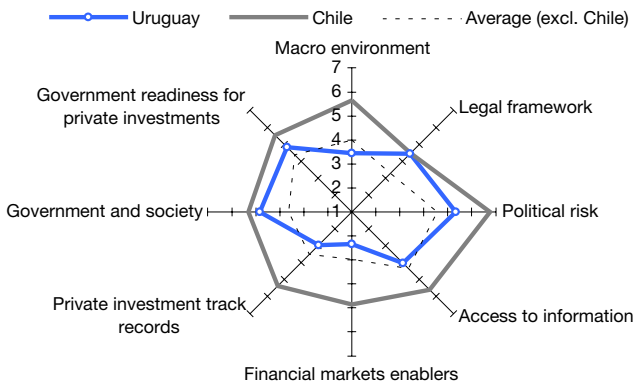
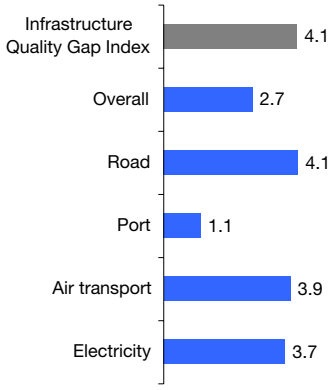


Figure 22b: Infrastructure Quality (IQGI)



ratings for the privatization of public companies (6.54) and a rather high propensity to pay for the provision of public services (as proxied by a limited informal market, at 3.78, and a rather low prevalence of subsidies, at 4.16).

Last, but not least, the country is characterized by very conducive regulations for PPPs and private investment in general, with a well-developed PPP framework (4.63), rather efficient environmental license processes (4.60) and land purchase and rights of passage legislation.

In contrast, the IPIAI underscores the modest sophistication and development of the financial market enablers (2.34) as one of the main weaknesses in Uruguay's performance, with scarcely developed equity (2.30) and bond markets (2.65), little diversification of pension fund portfolios (1.36) and almost no local availability of long-term credit (1.00).

Macroeconomic stability is another area in need of improvement at 3.31 (rating 10th), with the highest public debt levels in the sample (78.40%), rather low foreign (2.50) and local currency (3.00) sovereign debt ratings and rather high GDP volatility (2.59), among others. This is mirrored in the rather high currency transfer risk for long-term projects (3.00).

Given Uruguay's rather high indebtedness levels, it is very important for the country to promote private capital involvement in the upgrading and extension of its infrastructure network, which presents important gaps/opportunities, especially in road (4.13), air transport (3.89) and electricity (3.72), as displayed by the IQGI (see Figure 22b). The good scores registered in PPP regulations and governance, as well as the civil society's large approval for privatizations and willingness to pay for the provision of public services are all encouraging elements in this sense, which would need to be complemented by a more sound macroeconomic environment and further development of financial market enablers.

Venezuela

With a mediocre score of 3.37, Venezuela lags behind all countries included in this paper, except for Bolivia and Dominican Republic, for the attractiveness of its environment for private investment in infrastructure. As shown in Figure 23a, it ranks among the last in the sample in five of the eight pillars comprising the index. It underperforms the region, often by a great deal, in six pillars.

Venezuela is the worst performer in the General Investment Environmental Factors sub-index. In particular, Venezuela comes last in the legal framework pillar. A look at the huge gap between its score (2.09) and the regional average (3.25) suffices to indicate the extent to which the country has fallen behind in this dimension. It ranks last not only in all three components of this pillar, but also on nine of its 13 indicators. The scores in all of the ethics-

Figure 23a: Investment Attractiveness (IPIAI)

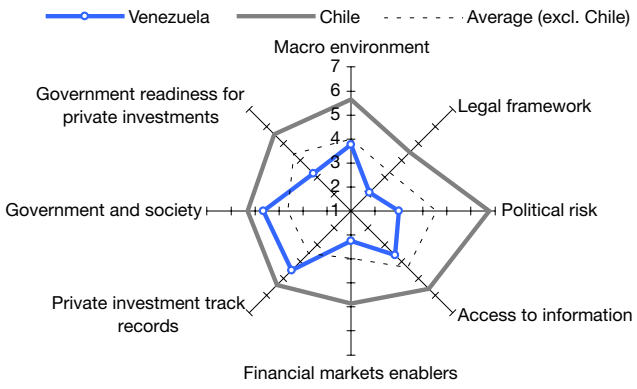
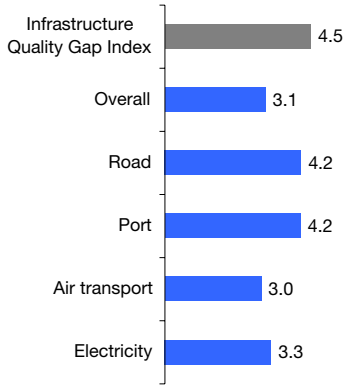


Figure 23b: Infrastructure Quality (IQGI)



related indicators are so bleak that Venezuela stands at odds even in a region ridden by corruption. The country also ranks 11th (3.00), ahead only of Bolivia (2.75), for political risk. Quite predictably, given the Chavez administration's ideological stance, it displays a rather high risk of expropriation (2.00), made worse by what seems to be a scarce propensity of the government to pay reasonable compensation in the case of expropriation (3.00). Equally worrisome, the country is assessed as being among those having the highest risk of war and civil disturbances in the region.

Furthermore, Venezuela (8th) does not offer a particularly attractive macro environment. Most of the good marks in this pillar are the result of the oil windfall: low levels of indebtedness (25% of GDP), budget surplus (1.6% of GDP) and solid growth (4% over the period 2001-2010). For the rest, there is little to boast about. In particular, its sovereign debt rating is rather low (3.00, 8th), inflation is high (12.10%, 11th), the banking system is not perceived as being particularly sound (2.59, 8th), trade barriers remain high (3.87, 9th) and education quality is poor (2.59, 8th).

The picture does not improve much when one looks at the infrastructure-specific investment climate. Venezuela ranks a very low 10th in financial market enablers. Expensive lending rates (17%), limited availability of long-term credit and an insufficiently developed bond market add to the difficulty of funding projects.

Moreover, the government's readiness to deal with private investment is particularly poor as witnessed by the 11th rank in this pillar. In particular, the survey of experts reveals that little effort is put into developing public-private partnerships (8th). The survey also points to the inefficiencies and partiality of the license granting agency (8th), as well as to the difficulty of purchasing land and obtaining rights of passage (10th).

Venezuela's track record for private investment (4.48) is surprisingly good (4th), with the best regional showing in terms of project finance prevalence (14% of GDP) and a rather satisfactory litigation track record. In this sense, the country ranks 3rd for the number of projects cancelled or distressed between 1990 and 2005 (1% of total investment in infrastructure).

However, the good performance in this pillar largely reflects the huge foreign investment volume in the oil sector and is, by no means, a trend observed across all sectors of the economy. Indeed, when looking at the total value of private investment in infrastructure between 1994 and 2005, Venezuela ranks last, with a meagre 0.6% of GDP.

The generally unflattering portrait of Venezuela's investment environment is mirrored by a relatively bad assessment of its infrastructure quality (see Figure 23b). Displaying a significant quality gap with Germany (4.47), the country ranks 4th in the IQGI. The two categories of infrastructure that show the largest gap, thereby offering the best investment opportunities, are roads (4.18) and ports (4.16).

Conclusions

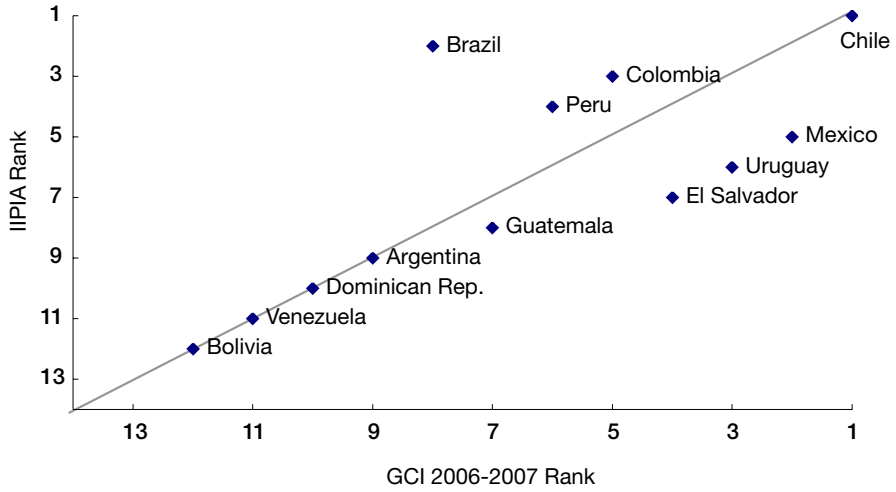
The country-specific analysis in the preceding section sheds light on the extent to which the 12 Latin American countries covered in this paper present a national environment that is conducive to private investment in infrastructure. A number of insights have emerged that have a direct relevance for investors and the business sector, as well as for policy-makers.

From an investor's perspective, the IPIAI (Infrastructure Private Investment Attractiveness Index), combined with the IQGI (Infrastructure Quality Gap Index), provides a toolkit for investment decisions and location choices in Latin America. In this sense, it is a better-targeted instrument for investors than the Forum's Global Competitiveness Index (GCI)26, whose rankings are routinely used by investors to evaluate investment decisions. The GCI captures dimensions relevant for investment decisions, but its focus is broader, looking at the factors enabling a country's sustained growth over the medium to long term. While Chile tops the GCI and the IPIAI alike and the worst performers are basically the same in both indexes for the region (see Figure 24), a number of countries display important differences in their investment attractiveness, as compared to their general competitiveness. In this respect, the investment attractiveness of Mexico, Uruguay, El Salvador and Guatemala is lower than their general competitiveness as assessed by the GCI, while the contrary is true for countries like Brazil, Colombia and Peru.

The assessment provided by the IPIAI is complemented by the IQGI's analysis of the relative investment quality gap in different categories of infrastructure. As explained in the methodology section above, the IQGI illustrates the difference between a country's current infrastructure quality and a global best performer (Germany); the focus is on quality, hence the link with immediate demand is not direct and should not be seen as such. Nonetheless, a country with a greater infrastructure quality gap will need to invest comparatively more in infrastructure in order to improve its competitiveness in the long term.

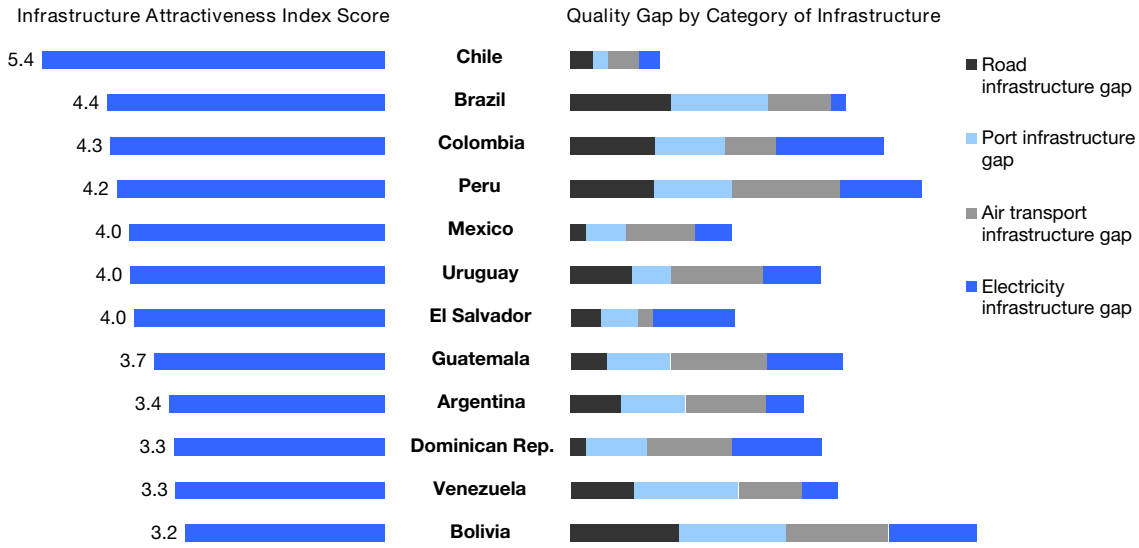
Figure 25 provides a snapshot of the private investment attractiveness of the 12 countries covered in this paper, together with the infrastructure quality gap displayed in roads, ports, air transport and electricity. The combination of the two indexes allows investors to make comparisons among countries and possible investment locations. For instance, El Salvador has a slightly more attractive investment environment, but Guatemala has much greater needs for investment; Brazil, Colombia and Peru, whose attractiveness for investment outstrips their general competitiveness, have relatively high investment gaps, particularly in transport Infrastructure.

Figure 24: Global Competitiveness Ranking and Infrastructure Private Investment Attractiveness Ranking



Source: World Economic Forum, *Global Competitiveness Report 2006-2007* and author's calculations

Figure 25: Investment Attractiveness and Infrastructure Quality Gap



The IPIAI's analysis can also guide policy-makers in the choice of the best policies to enhance their national attractiveness for private investment in infrastructure and in prioritizing sectors and measures. With the purpose of better illustrating the policy-implications of the IPIAI, the 12 countries included in this paper have been grouped into four different clusters (see Figure 26), each showing a specific attractiveness profile. Belonging to a particular cluster has specific policy implications for a given country on which reforms and policies to prioritize, in order to catalyse high volumes of private investment in infrastructure, which differ from those for countries in another cluster.

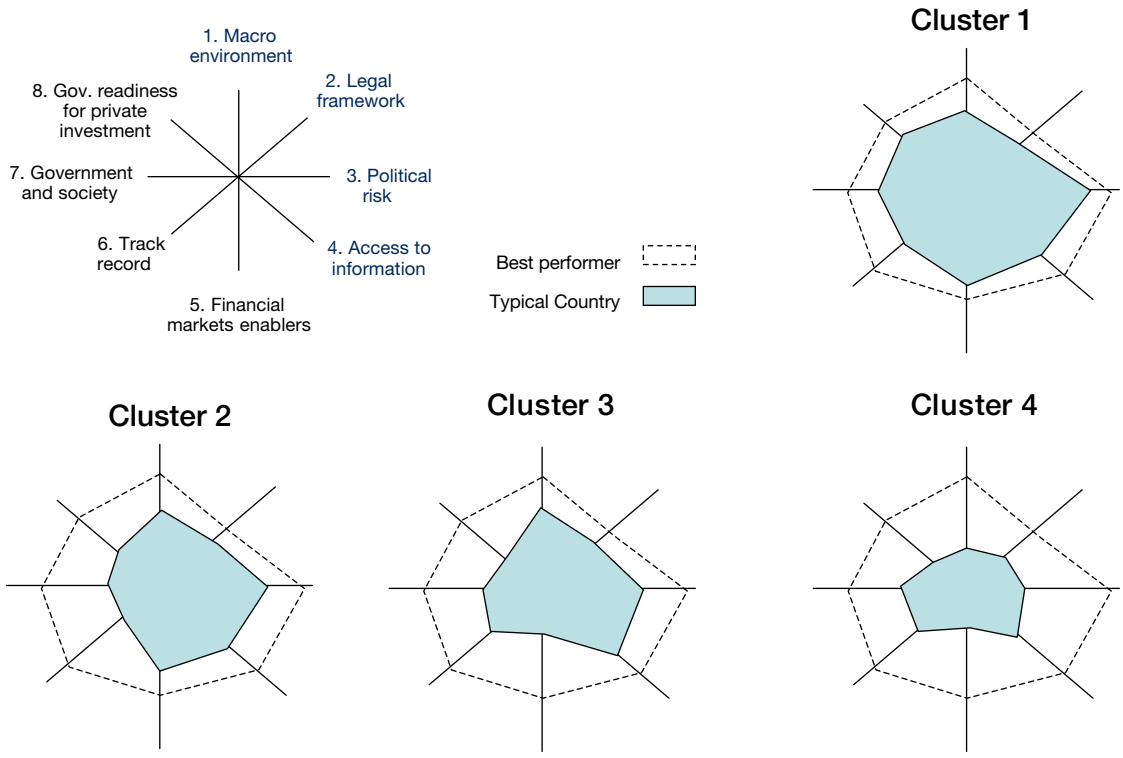
The clusters have been crafted using Chile as the reference, considering it can be defined as being in a category on its own, outstripping the rest of the region in most pillars of the IPIAI.

Cluster 1 is populated by countries displaying a strong performance across all pillars: Brazil, Peru and Colombia fit in here (as shown by Figures 13a, 16a and 21a). Countries in this group share a fairly conducive environment for private investment in infrastructure and their challenge is mostly one of execution and innovation to deal with the specific complexities that each country faces. *Challenge: execution*

Cluster 2 includes Mexico and El Salvador. As shown in Figures 20a and 16a, respectively, both perform fairly strongly in the General Investment Environment sub-index and, very importantly, they display rather developed financial market enablers. The latter offer long-term financing for infrastructure projects as well as a better understanding of local conditions and risks involved. At the same time, countries in this cluster are characterized by weak track records in private infrastructure investment and perform poorly on the pillar looking at social and civil society–government relations. In order to boost investment in infrastructure, these countries should implement short-term policies and administrative reforms and make a centralized effort to get key projects going. *Challenge: short-term focused reforms*

Cluster 3 would comprise Guatemala and Uruguay. However, Dominican Republic has a profile corresponding to Cluster 4 (see below) but the strong, positive developments taking place there place it in Cluster 3. These countries have decent general investment environments but are weak in the Infrastructure Investment Specific Factors sub-index, in particular the financial enablers are underdeveloped and not up to the task (see Figures 19a, 17a and 22a). Reforms to streamline projects and improve the government's capacity to facilitate private investment are surely very important, but so

Figure 26: Country Cluster – Typical Profile Illustration



The chart depicts the way the typical profile, of a country that fits that cluster, will look like in the spider-chart with the 8 pillars in the methodology.

are those targeted at reinforcing and developing the financial sector, which are more complex and require a comprehensive and consistent approach.
Challenge: a medium-term comprehensive reform programme

Cluster 4 includes Argentina, Bolivia and Venezuela, the laggards in the IPIAI. In this cluster, general investment conditions are poor (see Figures 12a, 14a and 23a). Any attempt to boost the attractiveness of the environment would require a long-term process. As mentioned earlier, these countries also rank fairly low in general competitiveness, as assessed by the GCI. Most private infrastructure investment in these countries is related to industry-specific initiatives in areas where benefits are directly captured by investors (mining, oil and gas, cogeneration for industry) and the use of private investment to provide public goods is almost non-existent.
Challenge: extensive reform programmes targeted at improving the general investment environment

In light of the above, the IPIAI, together with the IQGI, can provide a unique tool for the business sector and policy-makers to identify the weaknesses in countries' environments for private investment in infrastructure and the best remedial steps and needed reforms.

The infrastructure challenge is a huge one in Latin America, with tremendous implications on the overall competitiveness levels and medium- to long-term growth prospects for the region. The public and private sector need to work together to boost investment levels in infrastructure. This paper aims to enhance private involvement in infrastructure financing by laying out the main drivers of national attractiveness for private investment and providing a platform for dialogue among all relevant stakeholders.

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Footnotes

1 The authors would like to thank Norman Anderson, Dario Quiroga and Francisco Wulff for their invaluable help and intellectual support.
2 See Calderón C. and L. Servén (2004).
3 See Hulten, C. R. (1996).
4 See Fay M. and M. Morrison (2005).
5 See Calderón C. and L. Servén (2004).
6 See Fay M. and M. Morrison (2005).
7 Fay M. and M. Morrison (2005) estimate that an investment of 2.5% would be enough to respond to increasing demand, maintain existing infrastructure and ensure universal coverage in WSS and electricity, but that an investment between 4% and 6% would be necessary for the region to catch up with Korea in 20 years or simply keep up with China.
8 In this sense, the average of new commitments by the International Bank for Reconstruction and Development for the 2001-2005 period was, at US$ 11.6 billion, 20% less than the lending in the mid-nineties. World Economic Forum (2006).
9 See World Economic Forum (2006).
10 Vives, Antonio et al. (2006a)
11 The countries covered by the research, selected on the basis of their economic and political relevance in the region and data availability, are: Argentina, Bolivia, Brazil, Chile, Colombia, Dominican Republic, El Salvador, Guatemala, Mexico, Peru, Uruguay and Venezuela.
12 In this regard, given that the government also retains a central role in infrastructure financing PPPs by regulating infrastructure provision and paying for a large share of the investment, the higher the fiscal strength, the higher the resources that can be devoted to infrastructure investment, and the better and safer for the private investor.
13 Guasch and Spiller (2004), quoted in Fay M. and M. Morrison (2005).
14 One must introduce an element of caution with this particular variable (source: Private Participation in Infrastructure database, World Bank), since it only includes controversies dealt with by ICSID and does not include all those brought in front of national courts or other arbitration forums. Nevertheless, considering ICSID is the main multilateral arbitration forum for controversies arising between governments and foreign investors, we believe the data adds important value and information on the litigation track record of the countries covered.
15 Fay M. and M. Morrison (2005).
16 In particular, the time needed to get an environmental license is taken into account (e.g. from very predictable, if 10 months are needed it takes 9 to 11 months, to very unpredictable, it can take 3 months or it can take two years).
17 For additional information, see Lopez-Claros A. et al. (2006).
18 For additional information, see Geiger T. and E. Loades (2006).
19 The CEPII database was built by researchers based at the French Ministry of the Economy, Finance and Industry (MINEFI) and the French Development Agency (AFD) based on a survey conducted by MINEFI and AFD agencies in the countries covered. It was then adjusted, taking into account leading existing indicators (Transparency International corruption indicators, World Bank Institute governance indicators, etc.) and expert opinion. For further information, see Berthelier P. et al (2003).
20 The Latinóbarometro dataset provides a comprehensive picture of opinions, attitudes, behaviours and values of the people in Latin America in the following areas: economy and international trade, integration and trade agreements, democracy, politics and institutions, social policies and wealth distribution, civic culture, social capital and participation. For additional information please see: http://www.latinobarometro.org.
21 Additional information on the two indexes' computation is available upon request from gcp@weforum.org.
22 In this respect, following the popular protests that forced President Gonzalo Sánchez de Lozada to resign, Bolivia's Congress approved a highly controversial energy law, imposing a 32% tax on energy production to an already existing 18% royalty and forcing production firms to sign new operating contracts. Morales' administration signed a degree in May 2006 stating that all natural gas reserves had to be nationalized, giving foreign companies a six-month "transition period" to renegotiate contracts, or face expulsion. The revamping of the defunct state-owned oil company and the acquisition of majority ownership of five gas production, transportation, refining, and storage companies are also underway. Most recently, President Morales hinted of an increase of state control over sectors other than natural gas, including mining, electricity, telecommunications, transportation and forestry.
23 See Engel et al (2000).
24 Experts surveyed in Guatemala mentioned several examples of hydroelectric projects being blocked.
25 Economist Intelligence Unit, CountryData Database (April 2007)
26 For additional information on the GCI and the rankings, see Lopez-Claros A. et al. (2006).

Appendix

Composition of the Infrastructure Private Investment Attractiveness Index

Infrastructure Private Investment Attractiveness Index

Sub-index I: General Investment Environmental Factors

Pillar 1: Macro Environment

Sub-pillar 1.A : Macro Stability

1.01 Recession expectations
1.02 Rating of long-term sovereign debt (foreign currency)
1.03 Rating of long-term sovereign debt (local currency)
1.04 GDP volatility
1.05 Government debt
1.06 Budget balance
1.07 Exchange rate volatility
1.08 Inflation
1.09 Soundness of banks

Sub-pillar 1B: Macro Attractiveness

1.10 GDP growth
1.11 Real effective exchange rate
1.12 Gross domestic product
1.13 Prevalence of trade barriers
1.14 Ease of employing foreign labour
1.15 Availability of scientists and engineers
1.16 Quality of the educational system

Pillar 2: Legal framework

Sub-pillar 2.A: Regulatory Efficiency

2.01 Effectiveness of law-making bodies
2.02 Property rights
2.03 Prevalence of foreign ownership
2.04 Strength of auditing and accounting standards
2.05 Burden of government regulation

Sub-pillar 2.B: Public Ethics

2.06 Public trust in financial honesty of politicians
2.07 Favouritism in decision of public officials
2.08 Diversion of public funds
2.09 Irregular payments in public contracts

Sub-pillar 2.C: Effectiveness of Dispute Settlement Procedures

2.10 Independence of the judiciary
2.11 Efficiency of legal framework for settling disputes
2.12 Ease of shareholder suits
2.13 Degree of application and speed of rulings

Pillar 3: Political Risk

3.01 War risk
3.02 Risk of expropriation
3.03 Transfer risk
3.04 Compensation in the event of expropriation

Pillar 4: Ease of access to information

4.01 Availability of online services
4.02 E-government readiness
4.03 Clear information regarding changes in policies
4.04 Transparency of statistics publications
4.05 Openness to public of dialogue and decision making process
4.06 Consistency, continuity and predictability of privatization

Sub-index II: Infrastructure Investment Specific Factors

Pillar 5: Financial Markets Enablers

5.01 Equity market development
5.02 Bond market development
5.03 Lending rate
5.04 Development of pension funds
5.05 Portfolio allocation of pension fund assets
5.06 Availability of long-term credit

Pillar 6: Track Record of Private Investments in Infrastructure

6.01 Private investment in infrastructure projects
6.02 Prevalence of project finance
6.03 Projects cancelled or distressed
6.04 Contract terminations by government

Pillar 7: Government and Society (willingness to pay)

7.01 Satisfaction with privatization of public companies
7.02 Satisfaction with level of privatization of public services
7.03 Tax evasion in the formal sector
7.04 Size of the informal market
7.05 Prevalence of subsidies

Pillar 8: Government Readiness for Private Investments

8.01 PPP regulatory framework and development
8.02 Efficiency of the license granting process
8.03 Environmental licenses
8.04 Land purchase and right of passage
8.05 Government's consistency and continuity in economic matters
8.06 Transparency of privatization procedures
8.07 Openness of public services to private capital
8.08 Municipal/other local authorities' autonomy in tax matters

Composition of the Infrastructure Quality Gap Index (IQGI) and Methodology

Infrastructure Quality Gap Index

Overall Infrastructure Gap
1.01 Perceived overall infrastructure quality
1.02 Quality of national transport network

Road Infrastructure Gap
1.03 Quality of road infrastructure
1.04 Paved roads

Port Infrastructure Gap
1.05 Quality of port infrastructure
1.06 Customs clearance

Air Transport Infrastructure Gap
1.07 Quality of air transport infrastructure
1.08 Departures per 1,000 population

Electricity Infrastructure Gap
1.09 Quality of electricity supply
1.10 Electricity consumption
1.11 Electricity production
1.12 Power disruptions

The IQGI was calculated as follows: for each index component (i.e. overall, road, port, air transport and electricity), the average across the variables of this component is computed for all countries, including Germany.

Then, for each index component, the country gap (i.e. the difference between Germany's average and each country's average) is calculated for all countries (excluding Germany) and normalized on a 1 to 7 scale using the following formula:

$$6 \cdot \frac{(x - \min)}{\max - \min} + 1$$

where "x" is the country gap between any given country and Germany, "min" is the narrowest country gap in the sample (excluding Germany), and "max" is the widest country gap in the sample. As a result, in each component the country with the biggest (narrowest) gap is given a score of 7 (1).
Finally, the overall score of the IQGI is the simple average of the five components' normalized gaps.

Data Description and Sources

The following section provides details on the indicators used in this Study, including computation methods and sources. For each indicator, the title appears on the first line, preceded by its number to allow for quick reference. Underneath is a description of the indicator or, in the case of survey data, the full question and associated answers. If necessary, additional information is provided underneath.

Notes:

- The World Economic Forum's Executive Opinion Survey was conducted during the first quarter of 2006.
- The Centre d'Etudes Prospectives et d'Informations Internationales (CEPII)'s database does not cover El Salvador and Uruguay.

1.01 Recession Expectations
Your country's economy (from 1="will likely be in a recession in the next 12 months" to 7="will have strong growth in the next 12 months")
Source: World Economic Forum, Executive Opinion Survey 2006

1.02 Rating of Long-term Sovereign Debt (Foreign Currency)
Rating of long-term sovereign debt denominated in foreign currency, situation as of March 2007
The letter-based rating system was converted into a numeric system with values ranging from 1 to 7 (best).
Source: Fitch Centroamérica, S.A.

1.03 Rating of Long-term Sovereign Debt (Local Currency)
Rating of long-term sovereign debt denominated in local currency, situation as of March 2007
The letter-based system of rating was converted into a numeric system with values ranging from 1 to 7 (best).
Source: Fitch Centroamérica, S.A.

1.04 GDP Volatility
Volatility as measured by the standard deviation of annual gross domestic product (valued at constant prices), 1997-2006
Source: International Monetary Fund, *World Economic Outlook* (September 2006)

1.05 Government Debt
Government debt as a percentage of GDP, 2005
Total debt (both in local and foreign currency) owed by government to domestic residents, foreign nationals and multilateral institutions such as the IMF.
Source: Economist Intelligence Unit, *CountryData Database* (February 2007)

1.06 Budget Balance
Central government budget balance as a percentage of GDP, 2005
Source: Economist Intelligence Unit, *CountryData Database* (February 2007)

1.07 Exchange Rate Volatility
Standard deviation of monthly nominal exchange rates, 2002-2006
Standard deviation of first differences of natural logarithms of monthly nominal exchange rates (local currency per Special Drawing Rights) from January 2002 to December 2006
Source: International Monetary Fund, *International Financial Statistics* (April 2007)

1.08 Inflation
Average annual percentage change in consumer price index, 2002-2006
Source: IMF, World Economic Outlook (September 2006 edition)

1.09 Soundness of Banks
Banks in your country are (from 1="insolvent and may require a government bailout" to 7="generally healthy with sound balance sheets")
Source: World Economic Forum, Executive Opinion Survey 2006

1.10 GDP Growth
Average annual growth rate of gross domestic product, 2001-2010
This indicator was built based on the Economist Intelligence Unit's forecasts. For Bolivia, Guatemala and Uruguay, the period of reference is 2001-2008.
Source: Economist Intelligence Unit, *CountryData database* (February 2007)

1.11 Real Effective Exchange Rate
Real effective exchange rate 2005 relative to 1997-2004 average
Source: International Monetary Fund, *INS Database* (June 2006)

1.12 Gross Domestic Product
Gross domestic product (billions of current US$), 2005
Source: International Monetary Fund, *World Economic Outlook* (September 2006)

1.13 Prevalence of Trade Barriers
In your country, tariff and not tariff barriers significantly reduce the ability of imported goods to compete in the domestic market (from 1="strongly agree" to 7="strongly disagree")
Source: World Economic Forum, Executive Opinion Survey 2006

1.14 Ease of Employing Foreign Labour
Labour legislation in your country (from 1="prevents your company from employing foreign labour" to 7="does not prevent your company from employing foreign labour")
Source: World Economic Forum, Executive Opinion Survey 2006

1.15 Availability of Scientists and Engineers
Scientists and engineers in your country are (from 1="non existent or rare" to 7="widely available")
Source: World Economic Forum, Executive Opinion Survey 2006

1.16 Quality of the Educational System
The educational system in your country (from 1="does not meet the needs of a competitive economy" to 7="meets the needs of a competitive economy")
Source: World Economic Forum, Executive Opinion Survey 2006

2.01 Effectiveness of Law-making Bodies
How effective is your national Parliament/Congress as a law-making and oversight institution? (from 1="very ineffective" to 7="very effective – the best in the world")
Source: World Economic Forum, Executive Opinion Survey 2006

2.02 Property Rights
Property rights, including over financial assets (from 1="are poorly defined and not protected by law" to 7="are clearly defined and well protected by law")
Source: World Economic Forum, Executive Opinion Survey 2006

2.03 Prevalence of Foreign Ownership
Foreign ownership of companies in your country is (from 1="rare, limited to minority stakes and often prohibited in key sectors" to 7="prevalent and encouraged")
Source: World Economic Forum, Executive Opinion Survey 2006

2.04 Strength of Auditing and Accounting Standards
Financial auditing and reporting standards regarding company financial performance in your country are (from 1="extremely weak" to 7="extremely strong – the best in the world")
Source: World Economic Forum, Executive Opinion Survey 2006

2.05 Burden of Government Regulation
Complying with administrative requirements (permits, regulations, reporting) issued by the government in your country is (from 1="burdensome" to 7="not burdensome")
Source: World Economic Forum, Executive Opinion Survey 2006

2.06 Public Trust in Financial Honesty of Politicians
Public trust in the financial honesty of politicians is (from 1="very low" to 7="very high")
Source: World Economic Forum, Executive Opinion Survey 2006

2.07 Favouritism in Decisions of Public Officials
When deciding upon policies and contracts, government officials (from 1="usually favour well-connected firms and individuals" to 7="are neutral")
Source: World Economic Forum, Executive Opinion Survey 2006

2.08 Diversion of Public Funds
In your country, diversion of public funds to companies, individuals or groups due to corruption (from 1="is common" to 7="never occurs")
Source: World Economic Forum, Executive Opinion Survey 2006

2.09 Irregular Payments in Public Contracts
In your industry, how commonly would you estimate that firms make undocumented extra payments or bribes connected with the awarding of public contracts and licenses (from 1="common" to 7="never occurs")
Source: World Economic Forum, Executive Opinion Survey 2006

2.10 Independence of the Judiciary
Is the judiciary in your country independent from political influences of members of government, citizens or firms? (from 1="no – heavily influenced" to 7="yes – entirely independent")
Source: World Economic Forum, Executive Opinion Survey 2006

2.11 Efficiency of Legal Framework for Settling Disputes
The legal framework in your country for private businesses to settle disputes and challenge the legality of government actions and/or regulations (from 1="is inefficient and subject to manipulation" to 7= "is efficient and follows a clear, neutral process")
Source: World Economic Forum, Executive Opinion Survey 2006

2.12 Ease of Shareholder Suits
Ease of Shareholder Suit Index on a 0 to 10 (highest) scale, 2006
The index measures shareholders' ability to sue officers and directors for misconduct. The index ranges from 0 to 10, with higher values indicating greater powers of shareholders to challenge the transaction.
Source: World Bank, *Doing Business 2007: How to reform (2006)*

2.13 Degree of Application and Speed of Rulings
Degree of application and speed of rulings (from 1="low degree of application and slow speed of rulings" to 4="satisfactory application and speed")
Source: CEPII, Institutional Profiles 2006. Available at www.cepii.fr

3.01 War Risk
Risk of war, from 1 to 7 (riskiest), situation as of March 2007
Based on the Office National du Ducroire's definition, the risk of war encompasses the risks of external conflict and the risks of domestic political violence. In addition to the extreme case of civil war, domestic political violence also covers risks of terrorism, civil unrest, social-economic conflicts and racial and ethnic tensions. Countries are classified into seven categories from 1 to 7 (riskiest), depending on the intensity of the risk.
Source: Office National du Ducroire (March 2007)

3.02 Risk of Expropriation
Risk of expropriation and government action, from 1 to 7 (riskiest), situation as of March 2007
According to the Office National du Ducroire's definition, the risk of expropriation and government action covers the risks of expropriation and breach of contract by the government, and the risks related to the functioning of the judiciary system and the risk of a possible negative change of attitude towards foreign investors. Countries are classified into seven categories from 1 to 7 (riskiest), depending on the intensity of the risk.
Source: Office National du Ducroire (March 2007)

3.03 Transfer Risk
Transfer risk, from 1 to 7 (riskiest), situation as of March 2007
According Office National du Ducroire's definition, transfer risk is the risk resulting from an event or decision by foreign authorities that prevents the transfer of the amount of the debt paid by the debtor. Countries are classified into seven categories from 1 to 7 (riskiest), depending on the intensity of the risk.
Source: Office National du Ducroire (March 2007)

3.04 Compensation in the Event of Expropriation
Compensation in the event of de jure or de facto expropriation (by the Government) of real property (1/2 weight) and of instruments of production (1/2 weight) (from 1="no compensation" to 4="reasonable compensation")
Source: CEPII, *Institutional Profiles 2006*. Available at www.cepii.fr

4.01 Availability of Online Services
In your country, online government services such as personal tax, car registration, passport applications, business permits and e-procurement are (from 1="not available" to 7="extensively available")
Source: World Economic Forum, Executive Opinion Survey 2006

4.02 E-government Readiness
E-government readiness index, from 0 to 1 (highest), 2005
The e-government readiness index assesses e-government readiness based on website assessment, telecommunications infrastructure, and human resource endowment.
Source: United Nations, *Global E-government Readiness Report 2005*

4.03 Clear Information Regarding Changes in Policies
Are firms in your country usually informed clearly by the government on changes in policies and regulations affecting your industry? (from 1="never informed" to 7="always informed")
World Economic Forum, Executive Opinion Survey 2006

4.04 Transparency of Statistics Publications
Transparency of publications in basic economic and financial statistics (0 if no publications; if publications exist, from 1="unreliable" to 4="totally reliable")
Source: CEPII, *Institutional Profiles 2006*. Available at www.cepii.fr

4.05 Openness to Public of Dialogue and Decision-making Process
Degree of openness to the public (press, television, debates, etc) of the dialogue and decision-making process (from 1="very little public communication" to 4="high level of public communication")
Source: CEPII, *Institutional Profiles 2006*. Available at www.cepii.fr

4.06 Consistency, Continuity and Predictability of Privatization
Consistency, continuity and predictability of the privatization programme (from 1="low" to 4="high")
Source: CEPII, *Institutional Profiles 2006*. Available at www.cepii.fr

5.01 Equity Market Development
Equity Market Development, from 0 to 10 (highest), 2006
The Capital Access Index 2006's Equity Market Development Component reflects the extent to which financing of business operations is important for a given country.
Source: The Milken Institute, *2006 Capital Access Index*

5.02 Bond Market Development
Bond Market Development, from 0 to 10 (highest), 2006
The Capital Access Index 2006's Bond Market Development Component captures the importance of bond financing of business operations.
Source: The Milken Institute, *2006 Capital Access Index*

5.03 Lending Rate
Lending rate (percent per annum), 2005
This indicator corresponds to Series 60p of International Financial Statistics' country tables.
Source: International Monetary Fund, *International Financial Statistics (February 2007)*

5.04 Development of Pension Funds
Development of local pension funds as measured by the total value of their assets as a percentage of GDP, 2005
Source: authors' calculations; International Federation of Pension Fund Administrators (FIAP); ABRAPP; IGSS; International Monetary Fund, *World Economic Outlook* (September 2006)

5.05 Portfolio Allocation of Pension Fund Assets
Development of local pension funds as measured by the diversification of their asset portfolio, 2005
This indicator aims at gauging the sophistication and diversification of pension funds' investment strategies. It corresponds to the weighted average of the total asset value invested in the following five categories: State sector (weight of 1), private sector (4), financial sector (2), foreign sector (2), and other assets (5).
Source: authors' calculations; Federation of Pension Fund Administrators (FIAP); ABRAPP; IGSS; International Monetary Fund, *World Economic Outlook* (September 2006)

5.06 Availability of Long-term Credit
A weighted assessment of the longest term (5, 10 or 30 years) of bonds issued by the Treasury in local currency (not indexed) and the size of the private bond market as a percentage of GDP.
Source: Bank for International Settlements; Inter-American Development Bank; SBEF Dominican Republic; Banco de Guatemala; Fedesarrollo

6.01 Private Investment in Infrastructure Projects
Private investment in transport, telecom, energy and water infrastructure projects as a percentage of GDP, 1994-2005
Sum of annual total private investments in transport, telecom, energy, and water, between 1994 and 2005, divided by the sum of annual GDPs over the same period. All values expressed in constant prices (base year 2000).
Source: authors' calculation; World Bank, *Private Participation in Infrastructure Database* (February 2007); IMF, *World Economic Outlook* (September 2006)

6.02 Prevalence of Project Finance
Published nominal value of project finance deals between 2004 and 2006 as a percentage of GDP
Source: Thomson Project Finance database; authors' analysis

6.03 Projects Cancelled or Distressed
Projects cancelled or distressed as a percentage of total investment in energy, telecom, transport, and water, 1990-2005
The World Bank underlines the fact that the number of projects distressed or cancelled, and thus the total value of such projects, is underestimated because most arbitration bodies do not disclose information about cases. International Center for Settlement of Investment Disputes (ICSID) is the only international arbitration body that provides publicly information on its cases.
Source: World Bank, *Private Participation in Infrastructure Database* (February 2007); IMF, *World Economic Outlook* (September 2006)

6.04 Contract Terminations by Government
Have there in the past five years been terminations of contracts by the Government vis-à-vis foreigners (without "reasonable" compensation)? (from 1="very frequent and important terminations" to 4="very rare or none at all")
Source: CEPII, *Institutional Profiles 2006*. Available at www.cepii.fr

7.01 Satisfaction with Privatization of Public Companies
The privatization of state companies has been beneficial for the country ("strongly agree", "agree", "disagree", "strongly disagree"), September 2005
This indicator combines the percentages of respondents who answered "agree" and "strongly agree" to this question.
Source: Corporación Latinobarómetro

7.02 Satisfaction with Level of Privatization of Public Services
Satisfaction level with privatization of public services ("very satisfied", "fairly satisfied", "not very satisfied", "not satisfied"), September 2005
This indicator combines the percentages of respondents who answered "very satisfied" and "fairly satisfied" to this question.
Source: Corporación Latinobarómetro

7.03 Tax Evasion in the Formal Sector
Importance of tax evasion in the formal sector (from 1="widespread tax evasion" to 4="little tax evasion")
Source: CEPII, *Institutional Profiles 2006*. Available at www.cepii.fr

7.04 Size of the Informal Market
How much business activity in your country would you estimate to be unofficial or unregistered? (from 1="more than 50% of economic activity is unrecorded" to 7="none, all business is registered")
Source: World Economic Forum, Executive Opinion Survey 2006

7.05 Prevalence of Subsidies
In your country, government subsidies and tax breaks seriously distort competition by favouring specific companies, activities, regions and industries (from 1="strongly agree" to 7="strongly disagree")
Source: World Economic Forum, Executive Opinion Survey 2006

Note: Variables 8.01 to 8.04 are based on the results of a survey of local practitioners and legal experts conducted by the World Economic Forum between March and April 2007. Each of the four variables aggregates the results to several questions covering one aspect of the government's readiness for private investment.

8.01 PPP Regulatory Framework and Development
This variable was constructed based on the results to several questions dealing with the state of legislation related to private provision of public services, measures to promote and attract private investment in infrastructure, and to the track record of private promotion agencies.

8.02 Efficiency of the License Granting Process
This variable is based on the results to questions regarding the independence and efficiency of the agency in charge of attributing permits and licenses in the context of large infrastructure projects.

8.03 Environmental Licenses
This variable is based on questions regarding the efficiency of the environmental agency in granting environmental licenses.

8.04 Land Purchase and Rights of Passage
This variable is based on questions regarding the ease of purchasing land and obtaining rights of passage.

8.05 Government's Consistency and Continuity in Economic Matters
Consistency and continuity of government action in economic matters (from 1="low levels of consistency" to 4="high levels of consistency")
Source: CEPII, *Institutional Profiles 2006*. Available at www.cepii.fr

8.06 Transparency of Privatization Procedures
Transparency of privatization procedures (from 0="no transparency" to 4="high transparency")
Source: CEPII, *Institutional Profiles 2006*. Available at www.cepii.fr

8.07 Openness of Public Services to Private Capital
Openness of public services to local or foreign private capital (BOT, concessions, etc) (from 1="little openness" to 4="very considerable openness")
Source: CEPII, *Institutional Profiles 2006*. Available at www.cepii.fr

8.08 Municipal/Other Local Authorities' Autonomy in Tax Matters
Degree of municipal authorities' (1/2 weight) and other local authorities' (1/2 weight) autonomy in tax matters (0=no autonomy; if autonomy exists, from 1="little autonomy" to 4="all local resources raised locally")
Source: CEPII, *Institutional Profiles 2006*. Available at www.cepii.fr

The following variables enter the calculation of the IQGI.

1.01 Perceived Overall Infrastructure Quality
General infrastructure in your country is (from 1="underdeveloped" to 7="as extensive and efficient as the world's best")
Source: World Economic Forum, Executive Opinion Survey 2006

1.02 Quality of National Transport Network
Does your country's national transport network (domestic flights, buses, trains, taxis, etc.) offer efficient, accessible transportation to a wide range of travellers to key business centres and tourist attractions within your country? (from 1="no, not al all" to 7="yes, it is equal to the best in the world")
Source: World Economic Forum, Executive Opinion Survey 2006

1.03 Quality of Road Infrastructure
Roads in your country are (from 1="underdeveloped" to 7="as extensive and efficient as the world's best")
World Economic Forum, Executive Opinion Survey 2006

1.04 Paved Roads
Paved roads as a percentage of total roadways, various years
Source: CIA, *The World Factbook Online Edition* (February 2007)

1.05 Quality of Port Infrastructure Quality
Port facilities and inland waterways in your country are (from 1="underdeveloped" to 7="as extensive and efficient as the world's best")
Source: World Economic Forum, Executive Opinion Survey 2006

1.06 Customs Clearance
Median customs clearance time (days), 2002
Custom clearance time corresponds to the median number of days to clear customs, based on surveys conducted by the World Bank to importers in each country. The specific question is "If you import, how long does it typically take from the time your goods arrive at their port of entry until the time you can claim them from customs?"
Source: Clark, X., David Dollar, Alejandro Micco, *Maritime Transport Costs and Port Efficiency* (February 2002), Policy Research Working Paper n°2781, World Bank

1.07 Quality of Air Transport Infrastructure
Passenger air transport in your country is (from 1="Infrequent, limited and inefficient" to 7="as frequent, extensive and efficient as the world's best")
Source: World Economic Forum, Executive Opinion Survey 2006

1.08 Departures Per 1,000 Population
Number of aircraft departures per 1,000 population, 2005
Aircraft departures are the number of domestic and international take-offs of air carriers registered in the country. Source for departures and population is the CIA's *World Fact Book*.
Source: Booz Allen Hamilton Inc.

1.09 Quality of Electricity Supply
The quality of electricity supply in your country (lack of interruptions and lack of voltage fluctuations) is (from 1="worse than in most other countries" to 7="meets the highest standards in the world")
Source: World Economic Forum, Executive Opinion Survey 2006

1.10 Electricity Consumption
Electric power consumption (kWh per capita), 2003
Source: World Bank, *World Development Indicators*

1.11 Electricity Production
Electric power production (kWh per capita), 2003
Source: World Bank, *World Development Indicators 2006*

1.12 Power Disruptions
Electric power transmission and distribution losses (% of output), 2003
Source: World Bank, *World Development Indicators 2006*

Table 3 presents country ranks and scores in all the indicators of the IPIAI and the IQGI.
Scores in the table were normalized on a 1 to 7 scale.

Table 3: Country Ranks and Scores in Indicators of the Infrastructure Private Investment Attractiveness Index and Infrastructure Quality Gap Index

Infrastructure Investment Private Attractiveness Index	Argentina		Bolivia		Brazil		Chile		Colombia		Dominican Republic		El Salvador		Guatemala		Mexico		Peru		Uruguay		Venezuela	
	score	rank	score	rank	score	rank	score	rank	score	rank	score	rank	score	rank	score	rank	score	rank	score	rank	score	rank	score	rank
Pillar 1: Macro environment																								
1.01 Recession expectation	5.1	1	3.8	12	4.6	10	5.0	2	4.8	5	4.6	9	4.6	8	4.9	4	4.2	11	4.8	6	4.7	7	5.0	3
1.02 Long Term Foreign Currency Sovereign Debt	1.0	12	1.5	11	3.5	6	7.0	1	3.5	6	2.0	10	4.0	3	4.0	3	6.0	2	4.0	3	2.5	9	3.0	8
1.03 Long Term Local Currency Sovereign Debt	2.0	10	1.5	12	3.5	7	7.0	1	4.5	3	2.0	10	4.0	5	4.0	5	6.5	2	4.5	3	3.0	8	3.0	8
1.04 GDP volatility	2.0	11	6.5	3	6.4	4	5.9	5	5.5	8	4.9	9	7.0	1	6.9	2	5.9	6	5.5	7	2.6	10	1.0	12
1.05 Government debt	2.5	11	2.9	10	3.3	9	7.0	1	3.7	8	3.8	6	3.7	7	5.4	3	5.7	2	4.8	5	1.0	12	5.3	4
1.06 Budget balance	4.8	2	1.9	11	1.0	12	7.0	1	3.1	6	3.0	7	2.6	9	2.3	10	3.4	4	3.2	5	2.9	8	4.7	3
1.07 Exchange rate volatility	1.0	12	6.9	2	3.0	9	5.8	6	5.6	7	1.9	10	7.0	1	6.7	4	5.9	5	6.8	3	3.7	8	1.2	11
1.08 Inflation	1.0	12	6.0	4	5.7	6	6.3	2	5.6	7	3.3	10	6.0	4	4.3	9	6.3	2	7.0	1	4.9	8	1.1	11
1.09 Soundness of banks	3.8	12	4.6	9	6.1	2	6.5	1	5.5	6	4.6	10	6.0	3	5.3	7	5.5	5	5.7	4	4.5	11	4.8	8
1.10 GDP growth	4.5	5	2.8	7	1.5	9	7.0	2	4.3	6	6.7	3	1.0	12	2.4	8	1.1	11	7.0	1	1.3	10	4.7	4
1.11 Real effective exchange rate	7.0	1	4.3	3	2.4	9	2.8	6	2.2	10	1.1	11	2.6	7	1.0	12	2.4	8	2.9	5	4.0	4	4.5	2
1.12 Gross domestic product	7.0	3	2.0	12	7.0	1	5.1	6	5.3	5	2.6	8	2.2	10	2.5	9	7.0	2	4.0	7	2.2	11	5.6	4
1.13 Prevalence of trade barriers	3.3	12	3.3	11	4.1	7	5.6	1	3.9	8	3.6	10	4.5	3	4.3	5	4.7	2	4.1	6	4.4	4	3.9	9
1.14 Ease to hire foreign labour	5.1	6	5.0	7	4.6	11	5.4	4	5.0	8	5.7	2	5.7	1	4.8	10	4.9	9	5.5	3	5.4	5	4.2	12
1.15 Availability of scientists and engineers	4.4	6	3.2	12	4.5	4	5.1	1	4.5	3	3.5	11	3.7	10	3.9	9	4.0	8	4.3	7	4.7	2	4.5	5
1.16 Quality of the educational system	2.8	6	2.1	11	2.5	9	3.2	4	3.7	1	2.3	10	3.4	2	2.6	7	3.1	5	2.0	12	3.2	3	2.6	8
Pillar 2: Legal framework																								
2.01 Effectiveness of law-making bodies	1.9	10	2.0	9	2.2	7	3.9	1	3.0	2	2.2	6	2.4	5	2.1	8	2.4	4	1.8	11	2.9	3	1.7	12
2.02 Property rights	2.9	11	3.1	10	4.6	5	5.5	1	4.7	3	4.2	8	4.5	6	4.2	7	4.6	4	3.5	9	4.8	2	2.4	12
2.03 Foreign ownership restrictions	5.1	8	4.1	12	4.6	10	6.1	1	5.1	9	5.7	2	5.2	5	5.1	7	5.6	3	5.3	4	5.2	6	4.3	11
2.04 Strength of auditing and accounting standards	4.3	7	3.4	11	4.8	3	5.5	1	4.6	6	3.3	12	4.7	5	3.7	10	4.7	4	4.9	2	4.0	9	4.2	8
2.05 Burden of government regulation	2.5	9	2.5	8	1.9	11	3.8	1	2.6	7	3.1	4	3.3	3	3.3	2	2.6	6	2.3	10	3.1	5	1.8	12
2.06 Public trust in financial honesty of politicians	1.5	8	1.3	12	1.4	10	3.8	1	2.0	5	1.6	7	2.6	3	2.0	4	2.0	6	1.4	9	3.5	2	1.4	11
2.07 Favoritism in decision of public officials	2.2	9	2.1	10	2.7	8	4.0	2	2.9	6	1.9	11	3.8	3	3.3	4	2.7	7	3.0	5	4.0	1	1.7	12
2.08 Diversion of public funds	2.5	10	2.6	8	2.1	11	5.1	1	2.8	7	2.6	9	4.3	3	3.2	6	3.2	5	3.2	4	4.8	2	1.5	12
2.09 Irregular payments in public contracts	3.1	11	3.3	10	4.3	5	5.5	1	4.2	7	3.5	9	4.8	3	4.0	8	4.3	6	4.7	4	5.0	2	3.0	12
2.10 Independence of the judiciary	2.2	10	2.5	9	2.8	8	3.9	2	3.7	3	3.5	5	2.8	7	3.3	6	3.6	4	2.0	11	4.9	1	1.2	12
2.11 Efficiency of legal framework for settling disputes	2.6	9	2.5	11	3.1	7	4.6	1	3.8	3	3.3	6	3.0	8	3.3	5	3.3	4	2.5	10	4.3	2	1.6	12
2.12 Ease of shareholder suits	4.6	6	5.2	3	3.4	11	4.0	9	6.4	1	5.2	3	4.6	6	4.6	6	4.0	9	5.2	3	5.8	2	2.2	12
2.13 Degree of application and speed of rulings	3.0	1	1.0	6	1.0	6	3.0	1	3.0	1	1.0	6	n/a	n/a	3.0	1	1.0	6	3.0	1	n/a	n/a	1.0	6
Pillar 3: Political risk																								
3.01 War risk	6.0	4	4.0	10	7.0	1	7.0	1	3.0	12	6.0	4	6.0	4	5.0	8	6.0	4	5.0	8	7.0	1	4.0	10
3.02 Risk of expropriation	5.0	6	2.0	11	6.0	3	7.0	1	5.0	6	6.0	3	5.0	6	5.0	6	7.0	1	5.0	6	6.0	3	2.0	11
3.03 Transfer risk	2.0	11	2.0	11	4.0	4	6.0	1	4.0	4	3.0	7	5.0	3	3.0	7	6.0	1	4.0	4	3.0	7	3.0	7
3.04 Compensation in the event of expropriation	4.0	6	3.0	7	5.0	3	7.0	1	7.0	1	5.0	3	n/a	n/a	3.0	7	3.0	7	5.0	3	n/a	n/a	3.0	7
Pillar 4: Ease of access to information																								
4.01 Availability of online services	3.8	10	3.7	11	5.1	2	5.6	1	3.6	12	4.0	7	4.4	3	4.0	8	4.4	4	4.0	6	3.9	9	4.1	5
4.02 E-government readiness	4.6	4	3.4	11	4.6	3	5.2	1	4.1	6	3.4	10	3.5	9	3.3	12	4.6	2	4.1	8	4.2	5	4.1	7
4.03 Clear information in changes in policies	2.9	10	2.8	11	3.4	9	5.0	1	4.4	2	3.5	8	4.4	3	3.7	7	4.1	4	3.9	6	3.9	5	2.7	12
4.04 Transparency of statistics publications	5.5	6	7.0	1	7.0	1	7.0	1	7.0	1	5.5	6	n/a	n/a	5.5	6	5.5	6	7.0	1	n/a	n/a	4.0	10
4.05 Openness to public of dialogue and decision making process	5.0	2	5.0	2	7.0	1	5.0	2	5.0	2	5.0	2	n/a	n/a	3.0	8	5.0	2	1.0	10	n/a	n/a	3.0	8
4.06 Consistency, continuity and predictability of privatization	1.0	7	1.0	7	5.5	1	1.0	7	5.5	1	2.5	6	n/a	n/a	4.0	5	5.5	1	5.5	1	n/a	n/a	1.0	7

Table 3: (continued)

Infrastructure Investment Attractiveness Index	Argentina		Bolivia		Brazil		Chile		Colombia		Dominican Republic		El Salvador		Guatemala		Mexico		Peru		Uruguay		Venezuela	
	score	rank	score	rank	score	rank	score	rank	score	rank	score	rank	score	rank	score	rank	score	rank	score	rank	score	rank	score	rank
Pillar 5: Financial markets enablers																								
5.01 Equity market development index	3.4	5	2.3	8	4.3	2	4.9	1	3.3	7	1.0	12	3.4	5	1.3	11	3.5	4	3.9	3	2.3	8	2.3	8
5.02 Bond Market Development Index	4.6	2	2.1	11	5.1	1	3.9	5	4.5	4	2.1	11	3.0	8	2.7	9	4.6	2	3.7	6	2.7	9	3.7	6
5.03 Lending rate	6.5	1	2.4	9	1.0	12	6.3	2	3.2	7	1.0	11	6.0	3	3.8	5	5.1	4	3.0	8	3.6	6	2.3	10
5.04 Development of pension funds	4.5	5	4.3	7	4.9	3	7.0	1	4.0	8	1.0	11	5.0	2	2.8	10	3.6	9	4.4	6	4.5	4	n/a	n/a
5.05 Pension funds' portfolio allocation	2.4	6	2.1	7	6.4	1	3.6	3	2.9	5	3.1	4	1.4	9	1.3	11	1.8	8	4.6	2	1.4	10	n/a	n/a
5.06 Availability of long term credit	2.3	8	1.0	11	2.5	7	4.2	1	3.0	4	1.2	10	4.0	2	2.6	6	3.2	3	2.9	5	1.0	11	1.5	9
Pillar 6: Track record of private investments in infrastructure																								
6.01 Private investment in infrastructure projects	2.3	5	7.0	1	2.9	3	3.2	2	1.6	9	2.1	7	2.2	6	1.8	8	1.2	10	2.7	4	1.0	11	1.0	12
6.02 Prevalence of project finance	1.6	9	3.5	5	5.8	3	5.9	2	1.0	10	n/a	n/a	1.6	8	1.9	7	2.2	6	5.0	4	n/a	n/a	7.0	1
6.03 Projects cancelled or distressed	1.1	11	2.9	10	4.9	6	5.3	4	5.3	4	1.0	12	7.0	1	7.0	1	3.5	9	4.5	8	4.9	6	5.9	3
6.04 Contract termination by the Government	3.0	7	3.0	7	5.0	4	7.0	1	5.0	4	3.0	7	n/a	n/a	7.0	1	3.0	7	7.0	1	n/a	n/a	4.0	6
Pillar 7: Government and society (willingness to pay)																								
7.01 Satisfaction with privatization of public companies	1.9	11	2.6	10	6.9	2	5.7	5	5.9	4	3.6	8	1.0	12	2.7	9	4.7	6	3.8	7	6.5	3	7.0	1
7.02 Satisfaction with level of privatization of public services	5.5	2	3.1	8	5.3	4	3.4	7	4.9	5	3.0	9	1.0	11	2.9	10	5.3	3	4.4	6	n/a	n/a	7.0	1
7.03 Tax evasion in the formal sector	3.0	4	3.0	4	3.0	4	7.0	1	5.0	2	3.0	4	n/a	n/a	3.0	4	3.0	4	1.0	10	n/a	n/a	5.0	2
7.04 Informal sector	2.9	6	1.8	12	2.9	7	5.3	1	3.4	3	2.9	5	3.2	4	2.3	9	2.6	8	2.3	10	3.8	2	2.1	11
7.05 Prevalence of subsidies	3.0	10	3.3	9	4.3	2	5.2	1	4.1	6	2.9	11	4.2	3	4.1	5	3.7	7	3.3	8	4.2	4	2.2	12
Pillar 8: Government readiness for private investments																								
8.01 PPP regulatory framework & development	5.0	4	4.8	5	3.9	9	5.9	3	6.4	1	4.4	7	3.5	10	3.1	12	3.3	11	6.1	2	4.6	6	4.3	8
8.02 Efficiency of the license granting process	1.0	12	5.0	1	5.0	1	5.0	1	5.0	1	4.0	7	3.0	8	5.0	1	2.0	10	5.0	1	3.0	8	2.0	10
8.03 Environmental licenses	2.8	12	5.8	4	4.6	8	6.4	2	5.2	5	4.6	8	7.0	1	5.2	5	5.2	5	6.4	2	4.6	8	4.6	8
8.04 Land purchase and right of passage	3.0	10	5.0	6	5.0	6	7.0	1	7.0	1	7.0	1	5.0	6	1.0	12	5.0	6	7.0	1	7.0	1	3.0	10
8.05 Government's consistency and continuity in economic matters	3.0	7	1.0	10	7.0	1	7.0	1	5.0	4	3.0	7	n/a	n/a	3.0	7	5.0	4	7.0	1	n/a	n/a	5.0	4
8.06 Transparency of privatization procedures	1.0	7	1.0	7	5.5	1	1.0	7	5.5	1	2.5	6	n/a	n/a	4.0	5	5.5	1	5.5	1	n/a	n/a	1.0	7
8.07 Openness of public services to private capital	5.0	4	7.0	1	1.0	9	7.0	1	7.0	1	3.0	7	n/a	n/a	5.0	4	3.0	7	5.0	4	n/a	n/a	1.0	9

Infrastructure Investment Opportunity Index	Argentina		Bolivia		Brazil		Chile		Colombia		Dominican Republic		El Salvador		Guatemala		Mexico		Peru		Uruguay		Venezuela	
	score	rank	score	rank	score	rank	score	rank	score	rank	score	rank	score	rank	score	rank	score	rank	score	rank	score	rank	score	rank
1.01 Perceived overall infrastructure quality	3.4	7	2.1	12	2.9	8	5.1	1	2.8	9	3.6	6	4.7	2	3.7	4	3.6	5	2.6	10	3.8	3	2.5	11
1.02 Quality of national transport network	5.2	7	3.2	12	5.3	6	6.3	1	5.3	5	6.0	2	6.0	3	5.1	8	5.7	4	5.0	9	4.2	11	4.8	10
1.03 Road infrastructure development	3.3	7	2.0	12	2.4	11	5.3	1	2.6	9	3.7	5	4.9	2	3.7	6	3.8	4	2.6	8	4.0	3	2.4	10
1.04 Paved roads	2.6	5	1.0	11	1.0	12	1.9	6	1.6	8	3.8	2	1.9	7	2.8	3	3.8	1	1.6	9	1.3	10	2.8	4
1.05 Port infrastructure quality	3.4	6	1.3	12	2.7	10	4.9	1	2.9	8	3.7	3	3.6	4	3.5	5	3.4	7	2.2	11	4.3	2	2.7	9
1.06 Customs clearance	4.0	5	2.1	10	1.8	11	7.0	1	4.0	5	4.0	5	6.3	2	4.0	5	6.3	2	4.0	5	5.5	4	1.0	12
1.07 Perceived air transport infrastructure quality	3.8	9	2.9	12	4.6	6	5.6	2	4.9	4	5.5	3	5.7	1	4.4	7	4.7	5	3.3	10	3.2	11	3.9	8
1.08 Departures per 1,000 population	3.1	5	2.3	8	3.5	4	5.2	2	4.4	3	0.0	11	6.6	1	0.5	10	2.7	7	1.1	9	2.8	6	n/a	n/a
1.09 Quality of electricity supply	4.0	10	3.9	11	5.0	4	5.6	1	4.7	6	1.4	12	5.1	3	4.6	7	4.1	9	4.8	5	5.4	2	4.2	8
1.10 Electricity consumption	2.7	3	1.0	11	2.4	4	3.3	1	1.4	8	1.6	7	1.2	10	1.0	12	2.3	5	1.3	9	2.3	6	3.1	2
1.11 Electricity production	2.7	4	1.0	12	2.4	6	3.3	2	1.5	8	2.0	7	1.1	10	1.1	11	2.5	5	1.3	9	2.8	3	3.8	1
1.12 Power disruptions	4.7	5	5.3	4	4.4	7	6.8	1	3.9	8	1.0	12	5.3	3	3.4	10	4.7	6	5.9	2	3.5	9	2.5	11

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