Overview

1 Overview

The coverage and quality of a country's infrastructure play a vital part in economic growth, with direct and indirect effects in reducing poverty. From the 1950s until the 1990s most developing countries relied on public sector monopolies to deliver electricity, telecommunications, transport infrastructure, and water and sewerage services. Progress in expanding service coverage has been slow. An estimated 1.2 billion people in the developing world have no access to electricity, more than 1 billion lack access to clean water, and nearly 1.2 billion lack adequate sanitation.[1] Moreover, inefficiency has been high. Technical inefficiencies in roads, railways, power, and water alone caused losses estimated at $55 billion a year in the early 1990s—equivalent to 1% of the GDP of all developing countries, a quarter of their annual investment in infrastructure, and twice the annual development finance for infrastructure in the developing world.[2]

Disenchantment with past approaches to providing infrastructure services, coupled with tightening budget constraints, led governments to explore how best to harness the benefits of private participation. In doing so, governments also reexamined their own role and are seeking to transform it—moving away from being the exclusive financiers, managers, and operators of infrastructure to being facilitators and regulators of services provided by private firms.

All this launched a trend of liberalizing and privatizing infrastructure, beginning in a few countries in the 1980s. According to the World Bank's Private Participation in Infrastructure (PPI) Project Database, 26 developing countries awarded 72 infrastructure projects with private participation in 1984–89, attracting almost $19 billion in investment commitments.[3] In the 1990s the trend turned into a wave that swept the developing world, with 132 low- and middle-income countries pursuing private participation in infrastructure—57 of them in three of the sectors covered here or in all four (transport, energy, telecommunications, and water and sewerage). In 1990–2001 developing countries transferred to the private sector the operating risk for almost 2,500 infrastructure projects, attracting investment commitments of more than $750 billion. (Actual investment may have been somewhat lower; for example, the figures for 1990–2001 include some canceled projects. See boxes 1.1 and 1.2.) Those projects were implemented under schemes ranging from management contracts to divestitures to greenfield facilities under build-operate-own (BOO) contracts, build-operate-transfer (BOT) contracts, or merchant facilities.

This book provides an overview of trends in private participation in infrastructure in developing countries in 1990–2001.[4] It draws on the World Bank's PPI Project Database, which tracks infrastructure projects newly owned or managed by private companies in developing economies. While counting projects with private participation and investment is challenging for many reasons, the analysis reveals clear trends:

- Investment commitments for infrastructure projects with private participation grew rapidly from 1990 to 1997, after which they declined.
- Telecommunications and electricity were the leading sectors.
- Latin America and East Asia were the leading regions.
- Greenfield projects and divestitures were the leading types of private participation, whether measured by value of investment commitments or by number of projects.
- Upper-middle-income countries accounted for the most private activity in infrastructure, measured by value.
- Almost all developing countries had some private activity in infrastructure by 2001.

Growth and Decline of Private Activity in Infrastructure

Annual investment commitments for infrastructure projects with private participation grew strongly in 1990–97, surging from $18 billion to a record $128 billion (figure 1.1).[5] The investment levels in 1996 and 1997 were driven mainly by divestitures of infrastructure companies in Latin America and greenfield power plants and mobile telecommunications companies in Asia. The number of projects with private participation also increased rapidly, from just over 65 in 1990 to a peak of 361 in 1997 (figure 1.2).

Investment commitments for infrastructure declined in the wake of the East Asian financial crisis and subsequent crises in the developing world, starting in September 1997, and by 2001 they had returned to a level similar to that in 1995. The number of new infrastructure projects with private participation fell by about half. In 1998 private activity was sustained mainly by Brazil, which accounted for 46% of investment that year. Most of that went to the privatizations of the Telebras system and electricity distribution companies. After 1998 Brazil's share fell but was still significant at around 20% of annual investment. The decline in investment commitments was driven mainly by a reduction in investments directed to acquiring government assets (state-owned enterprises and licenses or concessions to provide infrastructure services). This type of investment fell by almost 80% between 1997 and 2001, while investment directed to sector expansion dropped by around 40% (figure 1.3). The trends in private participation in developing countries were similar to those in privatizations in industrial countries: the value of completed European privatizations grew rapidly in the 1990s, peaked in 1998, and has declined since then.[6]

Telecommunications and electricity had both the biggest growth and the biggest declines in private activity in 1990–2001 (figure 1.4). Annual investment commitments for telecommunications grew from $6 billion in 1990 to $57 billion in 1998, then dropped to $32 billion in 2001, 55% of the peak in 1998. Annual investment in electricity projects rose from around $1 billion in 1990 to $49 billion in 1997, then fell to about $11 billion in 2001, the lowest level since 1992.

Among the developing regions, Latin America and East Asia accounted for most of the boom and decline in private activity. In Latin America annual investment grew from $15 billion in 1990 to $76 billion in 1998, then fell to $23 billion in 2001, the lowest level since 1995 (figure 1.5). In East Asia annual investment rose from $3 billion in 1990 to $41 billion in 1997, then dropped to $17 billion in 2001, only 40% of the peak in 1997.

Although private activity in infrastructure has declined considerably in the past few years, it is still significant. In 2001 around 150 new infrastructure projects with private participation reached financial closure, and investment commitments in that year amounted to $58 billion, only 10% below the average for 1990–2001 and considerably higher than the level at the beginning of the decade. Private participation has accounted for a significant share of the total investment in infrastructure—around 25% (box 1.3).

Regional Trends

Among developing regions, Latin America and the Caribbean led the growth in private activity in 1990–2001, accounting for 48% of the cumulative investment (figure 1.6). In this region private participation in infrastructure has been part of broader sectoral reforms aimed at enhancing performance through private operation and competition and generating

the financial resources needed to improve service coverage and quality through tariff adjustments. The reforms were also designed to improve public sector finances. Under this approach divestitures and concessions of existing assets predominated, accounting for 75% of the cumulative investment in private infrastructure projects in Latin America during the period (figure 1.7).

As other developing regions have opened infrastructure to private participation, Latin America's dominance of investment in private infrastructure projects has diminished. Its share in annual investment fell from 80% in 1990 to 40% in 2001.

East Asia and Pacific had the second most private activity in infrastructure. This region focused on creating new assets through greenfield projects that served or complemented investments by public sector providers, devoting less attention to deeper or broader sectoral reforms. Greenfield projects accounted for 61% of the investment in East Asia in 1990–2001. The 1997 financial crisis in East Asia highlighted the limitations of this approach (unresolved sector inefficiencies and demand risk left with the government through take-or-pay agreements or traffic guarantees), leading most governments to consider deeper reforms. The region's share in annual investment in private infrastructure projects grew from 15% in 1990 to 40% in 1996. But at the peak of the financial crisis in 1998 it declined to 11% before recovering to 28% in 2001.

Europe and Central Asia was the third most active developing region. Most countries in this region introduced private participation in infrastructure as part of deeper sectoral reforms aimed at redefining the role of the state, putting infrastructure operations on a more commercial footing, and in some cases complying with the requirements for accession to the European Union. This approach was reflected in an emphasis on divestitures and concessions of existing business, accounting for 55% of the cumulative investment in private infrastructure projects in the region.

South Asia and the Middle East and North Africa followed an approach similar to that in East Asia and Pacific. Greenfield projects accounted for nearly 90% of cumulative investment in South Asia, and for 50% in the Middle East and North Africa.

In Sub-Saharan Africa countries focused primarily on opening the telecommunications sector by divesting incumbent state-owned operators and issuing greenfield mobile licenses. Although the region captured only 3% of the cumulative investment in 1990–2001, its share in annual investment grew from 2% in 1996 to 8% in 2001 and it accounted for 7% of infrastructure projects with private participation over the 12-year period (table 1.1).

Sectoral Trends

Telecommunications led the growth of private infrastructure activity in developing countries, accounting for 44% of the cumulative investment in 1990–2001 (figure 1.8; table 1.2). Facilitating this strong growth have been technological changes that have reduced entry costs, allowed major reforms in market structure, and spurred competition. All this helped lead to a telecommunications boom in the 1990s, reflected in the growing share of this sector in private infrastructure business. The sector's share in annual investment in private infrastructure projects rose from 35% in the early 1990s to 56% in 1999 and has remained above 50% since then.

In all developing regions investment in private telecommunications projects has been driven mainly by the diffusion of new services such as mobile telecommunications. In Latin America and in some countries in Europe and Central Asia and Sub-Saharan Africa investment has also been fueled by the privatization of incumbent public operators.

Energy, which includes electricity and the transmission and distribution of natural gas, attracted the second largest share of investment. Electricity was by far the more dynamic subsector, accounting for 28% of the cumulative investment in private infrastructure projects in 1990–2001. Private activity in electricity has been propelled by new technological developments that have reduced the minimum size of efficient power plants. Most of the investment in electricity occurred in 1994–97, during the boom in greenfield projects for independent power producers implemented through BOO or BOT contracts. That boom helped raise electricity's share in annual investment in infrastructure projects with private participation from less than 10% in 1990 to 38% in 1997, though it then declined to less than 20% by 2001.

Private participation in electricity varied across regions. In Latin America and Europe and Central Asia it was directed mainly to privatizing existing electricity companies. By contrast, in Asia and to some degree in the Middle East and North Africa and Sub-Saharan Africa the focus was on expanding generation capacity through greenfield projects.

Natural gas transmission and distribution attracted much less investment than electricity mainly because of its early stage of development in most developing countries. The PPI Project Database includes only private activity in transport capacity through pipelines. Natural gas production and exploration are excluded.

Private activity has lagged in transport and water and sewerage, where technological change has been less pronounced, political barriers to reform can be strong, and subnational governments often play a major role. Transport accounted for 18% of the cumulative investment in 1990–2001, and much of this share went to toll roads, the subsector receiving much of the public investment in transport. Countries introducing private participation in transport have focused on transferring existing assets through concessions and constructing toll roads through greenfield projects.

In introducing private participation in water and sewerage, most governments have focused on transferring vertically integrated water utilities through concessions. Most of the activity has occurred in countries that had already introduced private activity in other infrastructure businesses, such as electricity and telecommunications. Although private participation has also been used to expand bulk capacity for water treatment through BOO and BOT contracts, such contracts represented only a small share of private activity in the sector.

Trends by Type of Private Activity

Greenfield projects were the most common type of private participation in infrastructure in developing countries and also attracted the most investment in 1990–2001 (table 1.3). Annual investment commitments for greenfield projects rose from $8 billion in 1990 to $46 billion in 1997, then declined to $28 billion in 2001 (figure 1.9). The investment was driven mainly by greenfield projects for independent power producers and mobile telecommunications operators and, among the regions, by East Asia and Pacific.

Divestitures were the second most common type of private participation, attracting about the same amount of investment as greenfield projects. Annual investment commitments for divestitures grew from $6 billion in 1990 to $53 billion in 1998 and have dropped since then. By 2001 annual investment had fallen to $23 billion, the lowest level since 1995. This sharp decline had been expected to some extent, because the large privatizations in electricity and telecommunications in Brazil in 1997 and 1998 would have been difficult to sustain. The investment in divestitures was directed mainly to telecommunications and electricity in Latin America and the Caribbean.

Concessions of existing assets accounted for the rest of the investment in infrastructure projects with private participation (a 16% share). Annual investment commitments for infrastructure concessions peaked in 1997, when large concessions were granted—such as those for the electricity and water utility in Casablanca, Morocco; for the water utility in Manila, Philippines; and for transport in Brazil. Concessions were used primarily in transport and water and sewerage and, among regions, Latin America and East Asia.

Management and lease contracts have been used to introduce private participation in infrastructure without requiring the private sector to assume investment risks—and often without undertaking major tariff reforms. Such contracts were involved in 100 projects, 4% of the total. They were used primarily in water and sewerage (41 projects) and transport (44). Among regions, they were most common in Europe and Central Asia (30 projects) and Sub-Saharan Africa (25).

Trends by Country Income Group

Countries in the upper-middle-income group attracted the most private activity in infrastructure, capturing 59% of the cumulative investment in 1990–2001 (see the inside front cover for a list of countries by income group). Annual investment in these countries peaked in 1997–98, when Brazil privatized its electricity distribution and telecommunications companies (figure 1.10). Of the 38 upper-middle-income countries, 29 had private activity in infrastructure, mainly in telecommunications (figure 1.11).

Lower-middle-income countries also attracted a large share of private activity in infrastructure, with 30% of the cumulative investment. Annual investment peaked in 1997, driven by private activity in China, Colombia, Morocco, and the Philippines. In this income group 47 of 55 countries had private activity, with a large share of it in electricity and telecommunications (figure 1.12).

Private participation in infrastructure has also grown among low-income countries. These countries accounted for the remaining 11% of the cumulative investment, much of it in India and Indonesia. Annual investment fluctuated between $6 billion and $8 billion in 1998–2001, showing more resilience than that in the other income groups. Of the 64 low-income countries, 57 had private activity in infrastructure, most of it in electricity and telecommunications (figure 1.13). Private activity in low-income countries is larger than the numbers suggest. The data do not include small-scale private providers in the informal sector, which often play a major role in these countries—such as small power suppliers in Cambodia and the Republic of Yemen and private water vendors in most developing countries (see appendix 1 for the criteria for projects included in the PPI Project Database).

Country Concentrations

Although private activity in infrastructure spread rapidly among developing countries, a few countries accounted for most of the investment. The 10 countries attracting the most investment in projects with private participation captured 68% of the cumulative investment in 1990–2001 and accounted for 47% of the projects. The largest Latin American economies, such as Brazil, Argentina, and Mexico, all made the group of top 10, as did the main Asian economies, such as China, Malaysia, the Republic of Korea, the Philippines, and India (table 1.4).

Measuring investment in per capita terms, however, brings Hungary, Panama, Chile, Estonia, and Belize into the group of top 10 (table 1.5). And when investment is expressed as a percentage of GDP, Bolivia, Panama, the Lao People's Democratic Republic, and Cape Verde become the top 4 countries (table 1.6). But regardless of how investment is measured, Argentina and Malaysia are among the most active countries, appearing in all three groups of top 10.

Although private participation in infrastructure was spread among a large number of sponsors, the top sponsors accounted for a significant share of the total investment commitments (box 1.4).

Notes

1. World Bank, *World Development Report 1994* (New York: Oxford University Press, 1994), p. 1.
2. World Bank, *World Development Report 1994* (New York: Oxford University Press, 1994), p. 11.
3. All dollar amounts are in 2001 U.S. dollars. Nominal figures have been deflated using the U.S. consumer price index.
4. Although the PPI Project Database tracks private participation in infrastructure in developing economies from 1984 on, this analysis focuses on 1990–2001, when most of the private activity took place. Before 1990 only Chile engaged in large privatization programs, while other countries awarded just a few projects.
5. The PPI Project Database attempts to track private investment in infrastructure projects in developing economies. But private financing is difficult to calculate for projects developed through partnerships between the private and public sectors. For this type of project the database records total investment rather than private investment alone (see box 1.1 and appendix 1 for further explanation).
6. *The Economist*, "Coming Home to Roost," 27 June 2002, pp. 63–65.

Box 1.1

Private Participation in Infrastructure Project Database

The World Bank's Private Participation in Infrastructure (PPI) Project Database covers infrastructure projects that have reached financial closure and are owned or managed by private companies in developing (low- and middle-income) economies (see inside front cover for a list of the economies). The database includes projects in transport, energy (electricity and natural gas transport), telecommunications, and water and sewerage. Very small projects are not included because information on them is rarely available. Investments in infrastructure projects with private participation are expressed in billions of U.S. dollars in most of the tables. An entry of 0.0 indicates that investment was less than $50 million. Data in tables may not sum to totals because of multicountry projects or rounding.

The database classifies infrastructure projects with private participation in four categories:

- ***Management and lease contracts.*** A private entity takes over the management of a state-owned enterprise for a given period. The facility is owned by the public sector, and investment decisions and financial responsibilities also remain with the public sector.
- ***Concessions*** (or management and operation contracts with major private capital expenditure). A private entity takes over the management of a state-owned enterprise for a given period during which it also assumes significant investment risk.
- ***Greenfield projects.*** A private entity or a public-private joint venture builds and operates a new facility for the period specified in the project contract. The facility may return to the public sector at the end of the concession period.
- ***Divestitures.*** A private entity buys an equity stake in a state-owned enterprise through an asset sale, public offering, or mass privatization program.

The boundaries between these categories are not always clear, and some projects have features of more than one category. In these cases projects have been classified in the category that better reflects the risk borne by the private sector.

The database records total investment in infrastructure projects with private participation, not private investment alone. The data on investment in such projects therefore overstate private investment. Investments in infrastructure projects are classified as one of two types: investments in expanding and modernizing facilities and expenditures on acquiring government assets such as state-owned enterprises or rights to provide services in a specific area or to use radio spectrum. Funds for acquiring government assets are usually paid through divestiture revenues, license fees, or canon payments.

Investments in infrastructure projects have generally been recorded on a commitment basis in the year of financial closure (for which data are typically available). Actual disbursements are not tracked. Where divestitures are phased or where investment requirements are defined by commitments on service coverage and quality and data are available (such as for large privatized electricity and telecommunications companies), the investments are recorded in the years in which the transactions take place. Where investments in acquiring government assets are due over the period of a concession, an estimate of their present value is recorded in the year of financial closure.

For more information on the criteria and terminology of the PPI Project Database, see appendix 1.

Box 1.2

Canceled Infrastructure Projects with Private Participation

Private participation in infrastructure in developing countries has not been free of difficulties. By one estimate more than 40% of the contracts for infrastructure projects (excluding those in telecommunications) have been or are being renegotiated.[1] Renegotiation can mean simply fine-tuning the terms and conditions of a contract in response to changing circumstances, or it may be more serious. Even so, only 46 projects reaching financial closure in 1990–2001 had been canceled by 2001.[2] These 46 projects represented only 2% of the roughly 2,500 infrastructure projects with private participation in the developing world during that period—and less than 3% of the investment commitments in those projects (tables 1 and 2).

Many of the contracts canceled were for toll road projects in Mexico, Indonesia, Thailand, and Hungary. Several projects for independent power producers in Indonesia were also canceled. Among the largest infrastructure projects canceled by 2001 were the Dhabol liquefied natural gas power plants (phases I and II) in India, the Indah urban sewerage project in Malaysia, and the Azurix provincial water concession in Buenos Aires, Argentina.[3]

Table 1

Canceled Infrastructure Projects with Private Participation by Sector, Developing Countries, 1990–2001

	Canceled projects		Investment in canceled projects	
Sector	Number	As a share of total (%)	2001 US$ billions	As a share of total (%)
Electricity	9	1	5.2	2
Natural gas transmission and distribution	1	1	0.7	2
Telecommunications	7	1	1.3	0
Transport	22	3	9.9	7
Water and sewerage	7	3	4.5	11
Total	46	2	21.6	3

Note: The table shows projects that both reached financial closure and were canceled between 1990 and 2001.
Source: World Bank, PPI Project Database.

Table 2

Canceled Infrastructure Projects with Private Participation by Region, Developing Countries, 1990–2001

	Canceled projects		Investment in canceled projects	
Region	Number	As a share of total (%)	2001 US$ billions	As a share of total (%)
East Asia and Pacific	10	2	6.2	3
Europe and Central Asia	5	1	1.9	2
Latin America and the Caribbean	18	2	9.3	3
Middle East and North Africa	2	4	0.4	2
South Asia	5	3	3.7	9
Sub-Saharan Africa	6	3	0.1	0
Total	46	2	21.6	3

Note: The table shows projects that both reached financial closure and were canceled between 1990 and 2001.
Source: World Bank, PPI Project Database.

1. J. Luis Guasch, "Concessions and Regulatory Design: Determinants of Performance—Fifteen Years of Evidence" (World Bank, Washington, D.C.; and University of California, San Diego, 2001).
2. In addition, two projects that reached financial closure in 1989 were canceled by 2001.
3. For further discussion of canceled projects, see Clive Harris, John Hodges, Michael Schur, and Padmesh Shukla, "Infrastructure Projects: A Review of Canceled Private Projects," Viewpoint 252 (World Bank, Private Sector and Infrastructure Network, Washington, D.C., 2003).

Box 1.3

Private Sector Share of Total Investment in Infrastructure

What share of the total investment in infrastructure in developing countries does the private sector contribute? Answering this question precisely is not easy, because there are no aggregate data on total or public investment in infrastructure.

Although some estimates can be made based on the World Bank's Private Participation in Infrastructure (PPI) Project Database, such estimates are subject to several caveats. First, the data recorded by the PPI Project Database overestimate investment in infrastructure projects with private participation. The reason is that the database includes not only investments in new assets but also government proceeds from divestitures, license fees, and canon payments. While investments in new assets represent additional investments in the sector, government proceeds do not.

Second, the share of private financing in infrastructure projects with private participation varies significantly across countries and sectors:

- In telecommunications by the late 1990s, the private sector accounted for most if not all the investment in many of the largest Latin American economies (Argentina, Brazil, Chile, Mexico, Peru, and República Bolivariana de Venezuela). By contrast, in most East Asian countries, particularly China, state-owned enterprises accounted for a large share of the investment.
- In electricity the private sector accounted for most of the investment in just a few countries (such as Argentina, Chile, El Salvador, and Guatemala). In other countries (such as Brazil, China, India, and Mexico) the public sector is still the source of a large share of the investment.
- In natural gas transport the private sector was the source of most of the investment in a few countries (Argentina, Chile, Hungary, and Kazakhstan). In other countries (such as Colombia and Mexico) the private sector took over or developed main sector assets. In the rest of the countries with a natural gas transport industry the public sector still plays a dominant role.
- In transport private participation also varied significantly. In the airport subsector private firms were responsible for investing in major assets in some countries (Argentina, Bolivia, Madagascar, Mexico, Peru, and the Philippines)—while in others private investment was limited to minor assets (India) or was nonexistent (Brazil). In the toll road subsector just a few countries (Argentina, Chile, and China) transferred main assets to the private sector, while the rest of the countries limited private investment to minor assets.
- Similarly, in water and sewerage just a few countries (such as Argentina and Chile) transferred investment responsibilities for a significant share of main assets to the private sector. Most countries limited private investment to a few key assets (Indonesia, Morocco, and the Philippines) or minor sector assets (India, Mexico, and Peru).

For all infrastructure projects with private participation in developing countries, the private sector accounted for 85–90% of total investment.

Finally, because of the lack of aggregate data on public investment in infrastructure, it is unclear what impact private investment has on total investment. Data from Latin America show that trends in total investment in infrastructure differed across countries in the 1990s. According to one estimate, in Argentina, Brazil, and Mexico total investment in infrastructure declined in the 1990s because the growth in private investment failed to compensate for the decline in public investment.[1] By contrast, in Chile and Peru total investment in the 1990s remained at levels similar to those in the 1980s because the increase in private investment made up for the decline in public investment. And in Colombia total investment grew in the 1990s because private investment was added to stable public investment.

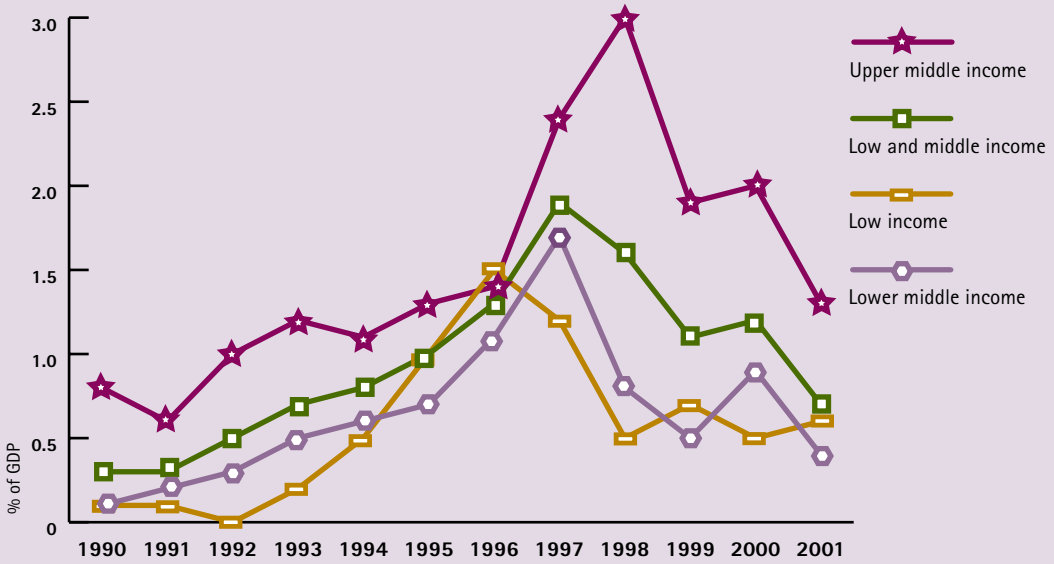
Box 1.3 (continued)

Private Sector Share of Total Investment in Infrastructure

With those caveats in mind, the private sector's share of the total investment in infrastructure can be estimated. Investment commitments for infrastructure projects with private participation amounted to around 1% of the GDP of all developing countries in 1990–2001, according to the World Bank's PPI Project Database and World Development Indicators Database. If it is assumed that developing countries invest on average 4% of their GDP in infrastructure—as estimated in the World Bank's *World Development Report 1994*—the private sector accounted for roughly 25% of all investment in infrastructure in developing countries in 1990–2001.

Although investment in infrastructure projects with private participation averaged around 1% of GDP in 1990–2001, that share varied among country income groups, amounting to 0.6% in low-income countries, 0.7% in lower-middle-income countries, and 1.5% in upper-middle-income countries. It also varied over time, reaching peak levels in 1997–98 (see figure).

Annual Investment in Infrastructure Projects with Private Participation as a Share of GDP by Income Group, Developing Countries, 1990–2001



Source: World Bank, PPI Project Database and World Development Indicators Database.

1. Cesár Calderón, William Easterly, and Luis Servén, "Latin America's Infrastructure in the Era of Macroeconomic Crises," in William Easterly and Luis Servén, eds., *The Macroeconomics of Infrastructure in Latin America* (Washington, D.C.: World Bank, 2003).

Box 1.4

Top Sponsors of Infrastructure Projects with Private Participation in Developing Countries

The top 10 sponsors of infrastructure projects with private participation in developing countries accounted for 12% of the projects in 1990–2001—and their projects for almost 30% of the investment (see table). Half the top 10 sponsors were telecommunications operators, reflecting that sector's dominance in private activity in infrastructure during the period. Three other companies (AES Corporation, Enron Corporation, and Electricité de France) were global electricity operators, and the remaining two (SUEZ and Andrade Gutierrez) were multisectoral operators. Three sponsors (Telefónica, Carso Global Telecom, and Andrade Gutierrez) specialized in one region (Latin America), while others operated across most developing regions.

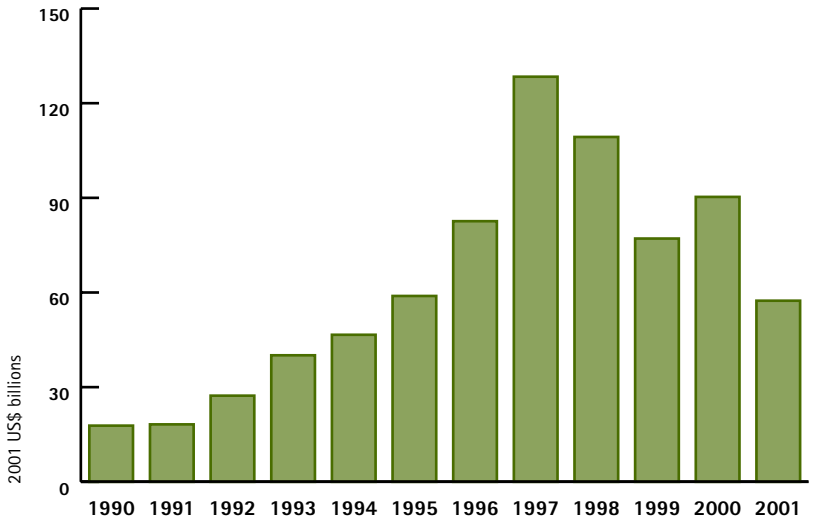
Top 10 Sponsors of Infrastructure Projects with Private Participation, Developing Countries, 1990–2001

			Projects by region					
Sponsor	Investment[a] (2001 US$ billions)	Projects	East Asia and Pacific	Europe and Central Asia	Latin America and the Caribbean	Middle East and North Africa	South Asia	Sub-Saharan Africa
Telefónica	35.2	12	0	0	11	1	0	0
Carso Global Telecom	34.8	5	0	0	5	0	0	0
SUEZ	32.6	79	26	18	24	4	1	6
Telecom Italia	30.7	16	0	3	13	0	0	0
France Télécom	26.6	26	2	6	5	4	0	9
AES Corporation	21.6	58	9	12	25	1	7	4
Deutsche Telekom	18.4	18	3	13	0	0	0	2
Enron Corporation	16.9	48	13	3	29	1	2	0
Electricité de France	15.5	28	2	6	9	4	0	7
Andrade Gutierrez	14.7	9	0	0	9	0	0	0
Total[b]	227.5	293	55	61	126	14	10	27

a. Investment from all sources in projects in which sponsor had an equity participation of 15% or more.
b. Data may not sum to totals because projects can be associated with more than one sponsor.
Source: World Bank, PPI Project Database.

Figure 1.1

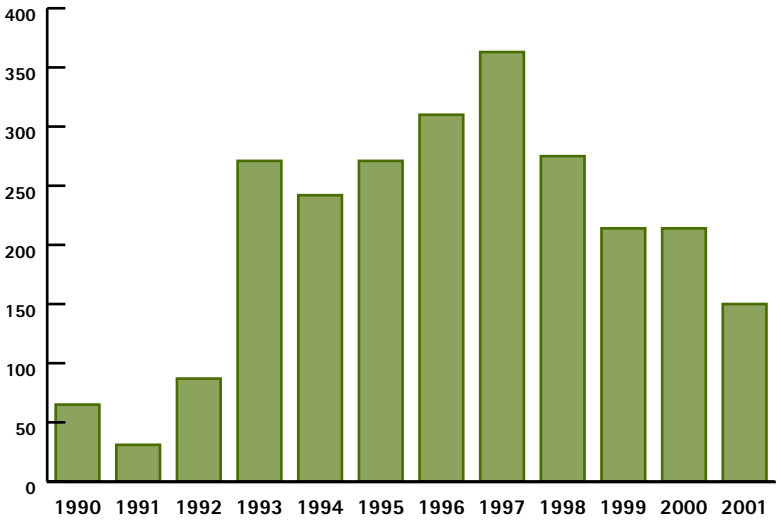
Annual Investment in Infrastructure Projects with Private Participation, Developing Countries, 1990–2001



Source: World Bank, PPI Project Database.

Figure 1.2

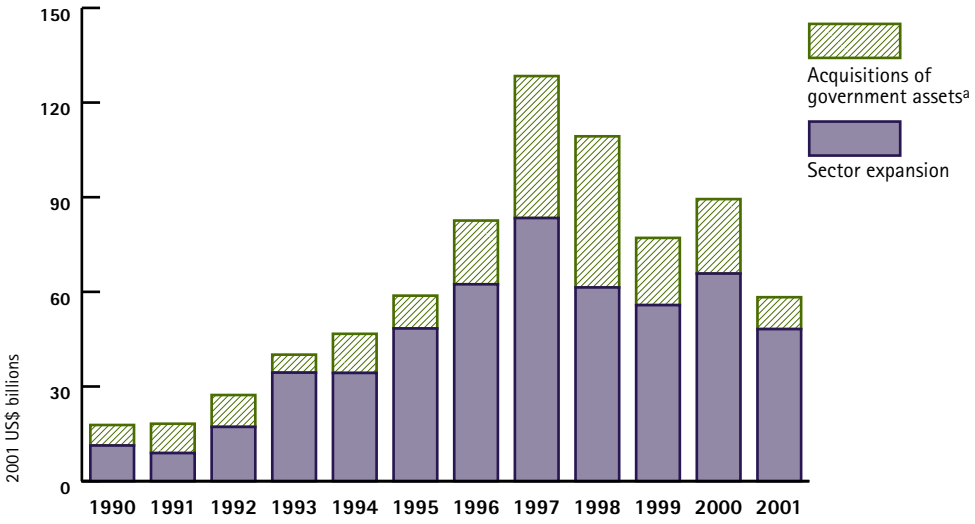
Infrastructure Projects with Private Participation by Year of Financial Closure, Developing Countries, 1990–2001



Source: World Bank, PPI Project Database.

Figure 1.3

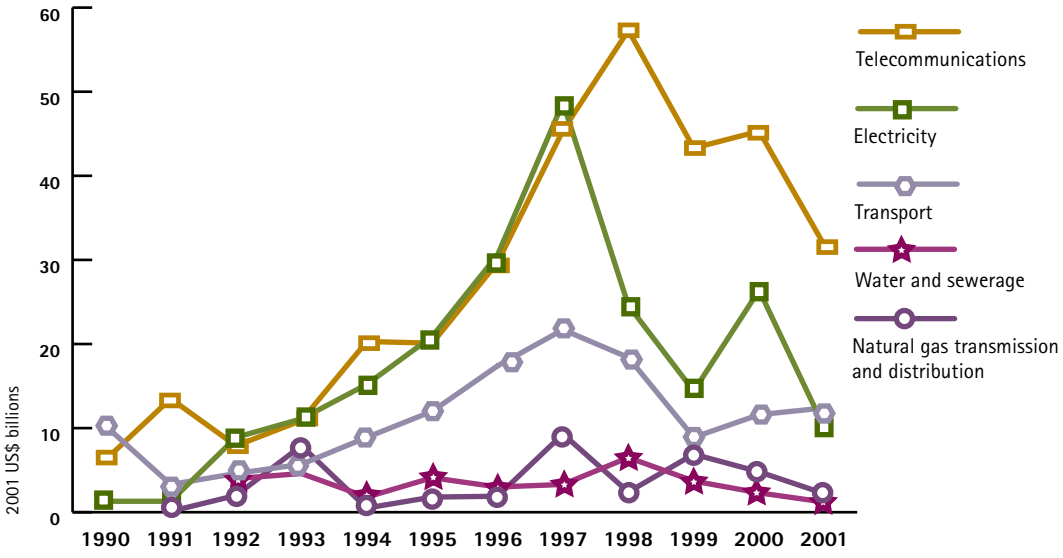
Annual Investment in Infrastructure Projects with Private Participation by Destination, Developing Countries, 1990–2001



a. Divestiture revenues, license fees, and canon payments.
Source: World Bank, PPI Project Database.

Figure 1.4

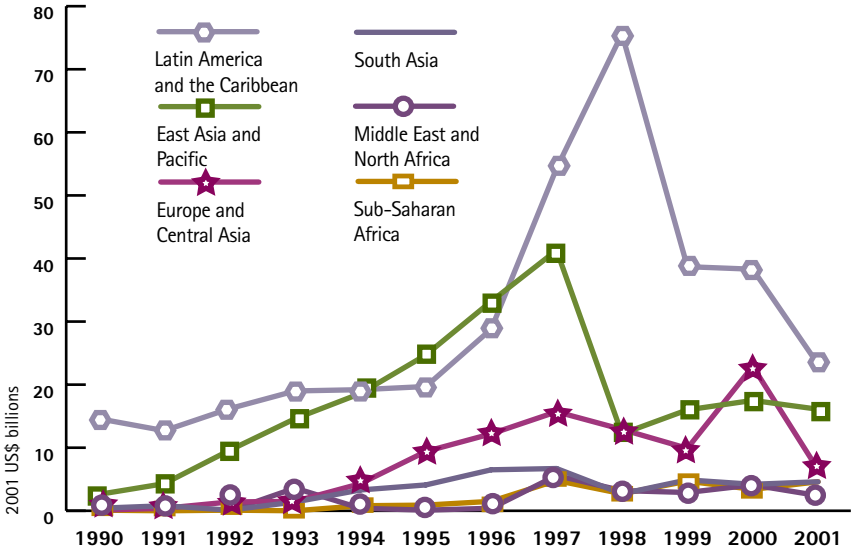
Annual Investment in Infrastructure Projects with Private Participation by Sector or Subsector, Developing Countries, 1990–2001



Source: World Bank, PPI Project Database.

Figure 1.5

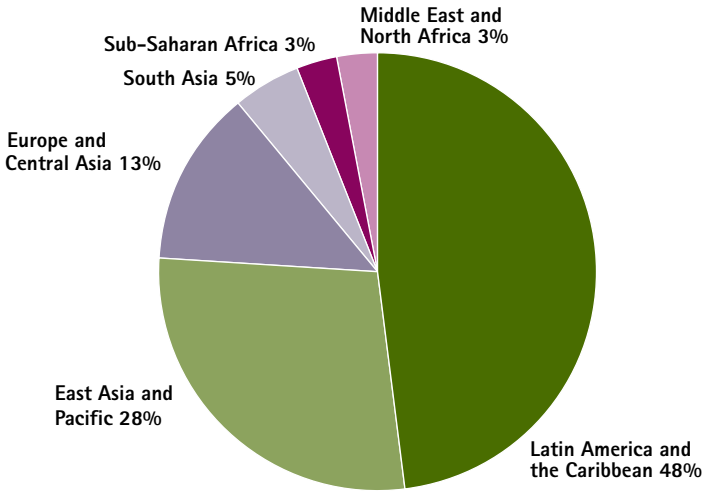
Annual Investment in Infrastructure Projects with Private Participation by Region, Developing Countries, 1990–2001



Source: World Bank, PPI Project Database.

Figure 1.6

Cumulative Investment in Infrastructure Projects with Private Participation by Region, Developing Countries, 1990–2001

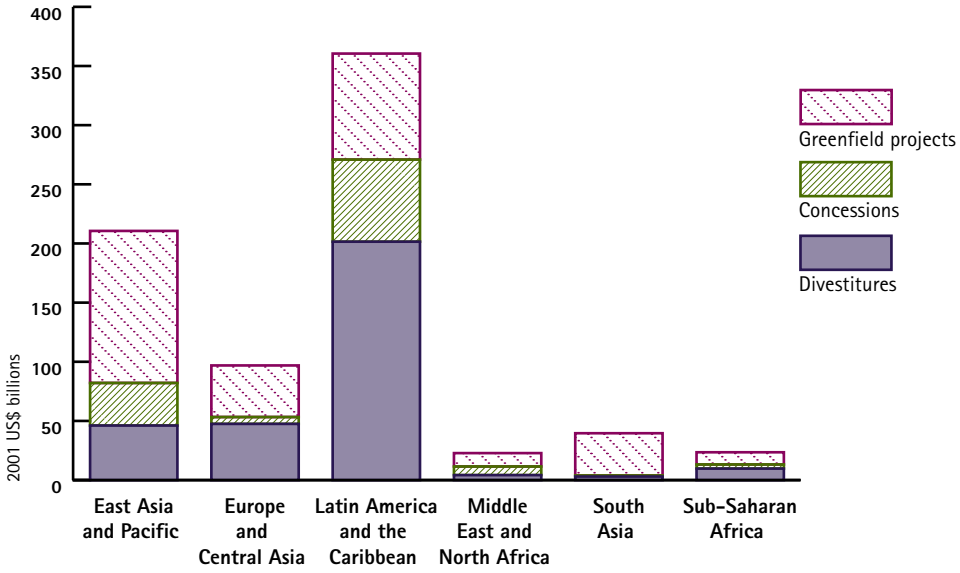


Source: World Bank, PPI Project Database.

Total $754 billion

Figure 1.7

Cumulative Investment in Infrastructure Projects with Private Participation by Region and Type, Developing Countries, 1990–2001



Source: World Bank, PPI Project Database.

Table 1.1

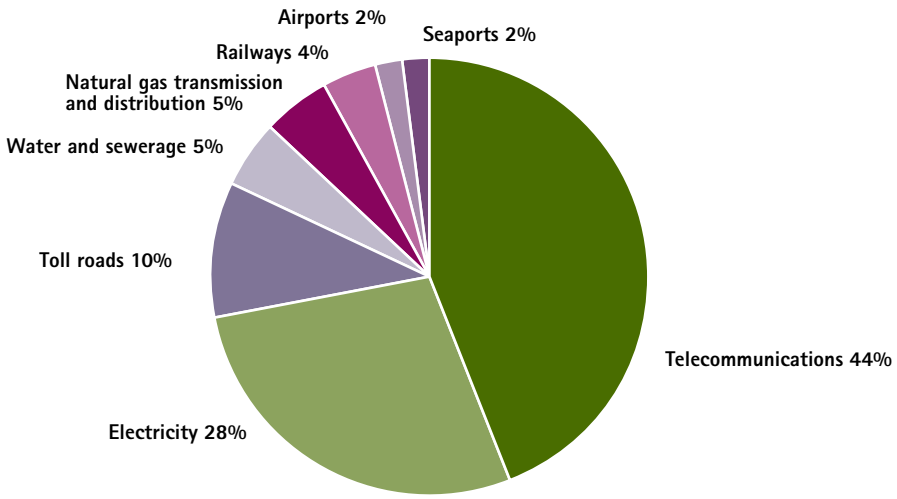
Private Participation in Infrastructure by Region, Developing Countries, 1990–2001

Region	Countries	Projects	Investment (2001 US$ billions)
East Asia and Pacific	17	611	210.6
Europe and Central Asia	25	568	97.1
Latin America and the Caribbean	28	887	360.6
Middle East and North Africa	12	55	22.8
South Asia	5	187	39.6
Sub-Saharan Africa	45	186	23.4
Total	132	2,494	754.1

Source: World Bank, PPI Project Database.

Figure 1.8

Cumulative Investment in Infrastructure Projects with Private Participation by Sector or Subsector, Developing Countries, 1990–2001



Source: World Bank, PPI Project Database.

Total $754 billion

Table 1.2

Private Participation in Infrastructure by Sector, Developing Countries, 1990–2001

Sector	Countries	Projects	Investment (2001 US$ billions)
Energy	89	978	247.6
Electricity	83	832	213.2
Natural gas transmission and distribution	33	146	34.5
Telecommunications	115	651	331.4
Transport	66	662	135.3
Airports	35	82	12.5
Railways	27	76	28.8
Seaports	41	177	18.0
Toll roads	28	327	76.0
Water and sewerage	43	203	39.8
Total	132	2,494	754.1

Source: World Bank, PPI Project Database.

Table 1.3

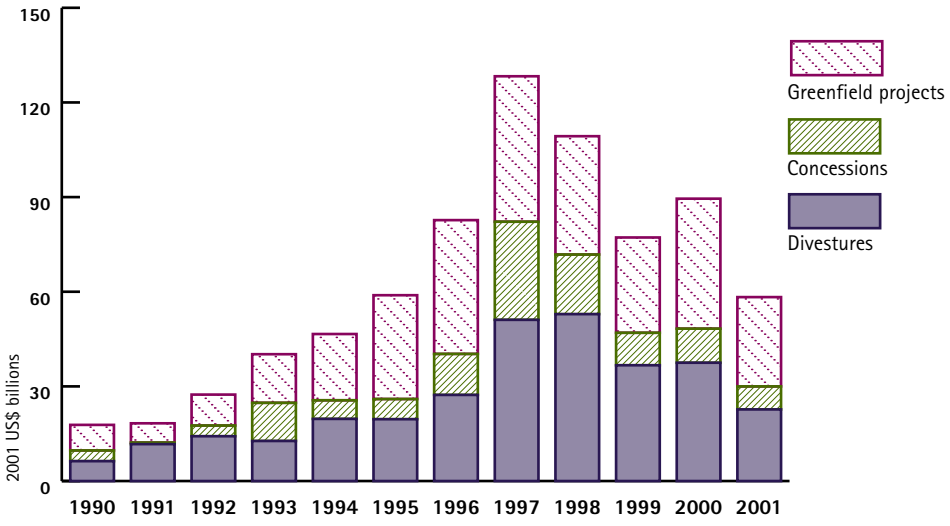
Private Participation in Infrastructure by Type, Developing Countries, 1990–2001

Type of private participation	Projects	Investment (2001 US$ billions)
Concessions	520	122.9
Divestitures	641	312.2
Greenfield projects	1,233	318.9
Management and lease contracts	100	0.2
Total	2,494	754.1

Source: World Bank, PPI Project Database.

Figure 1.9

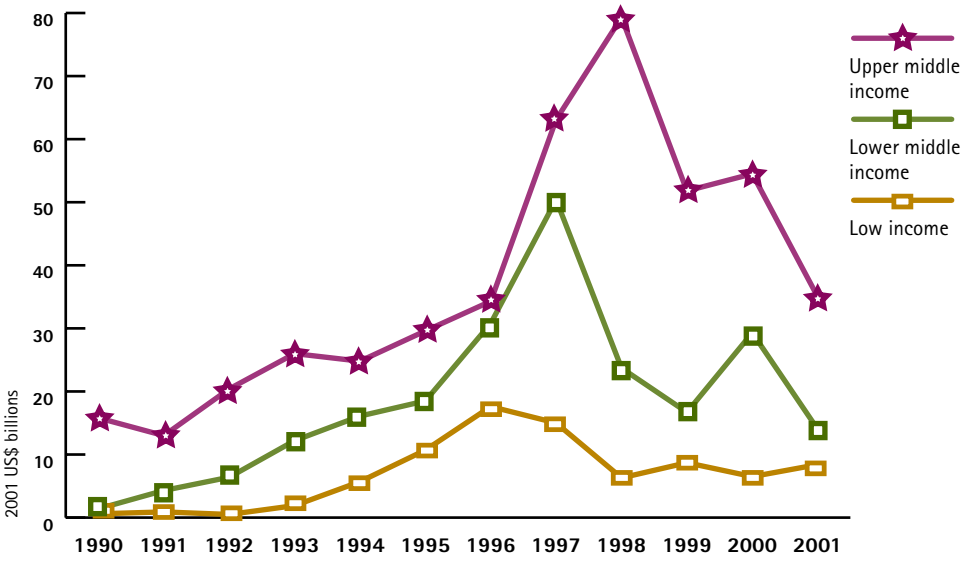
Annual Investment in Infrastructure Projects with Private Participation by Type, Developing Countries, 1990–2001



Source: World Bank, PPI Project Database.

Figure 1.10

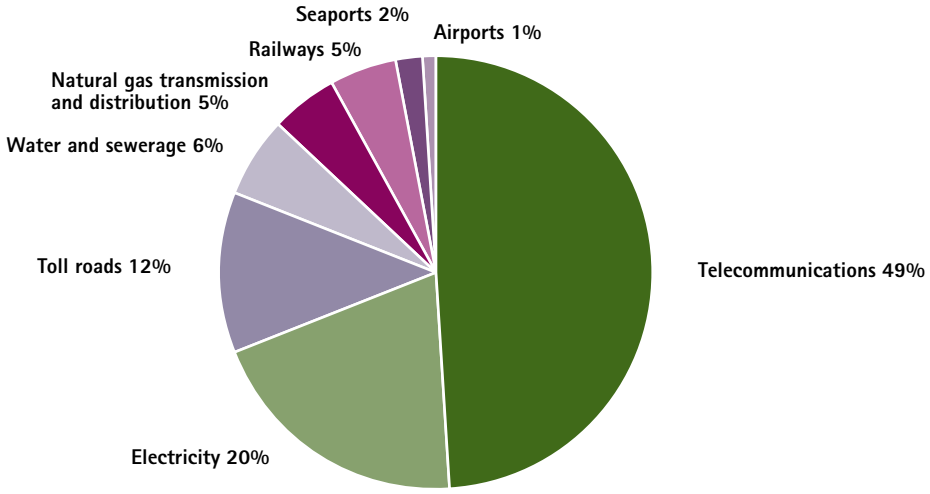
Annual Investment in Infrastructure Projects with Private Participation by Income Group, Developing Countries, 1990–2001



Source: World Bank, PPI Project Database.

Figure 1.11

Cumulative Investment in Infrastructure Projects with Private Participation by Sector or Subsector, Upper-Middle-Income Countries, 1990–2001

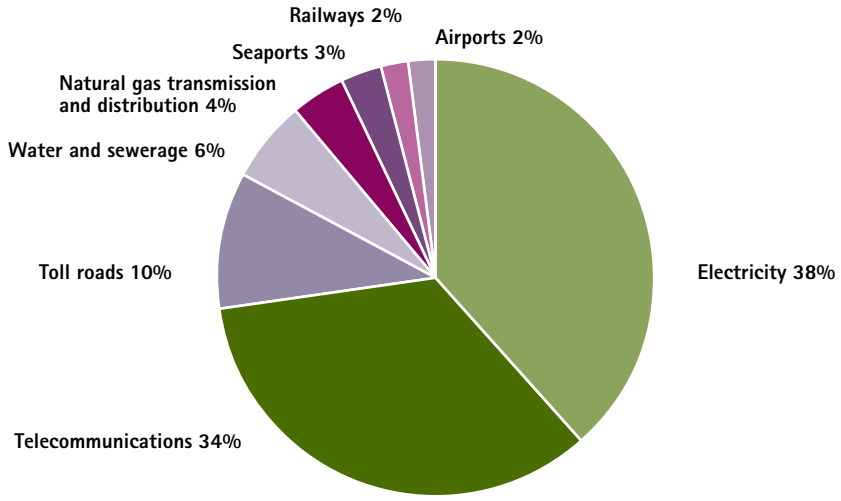


Source: World Bank, PPI Project Database.

Total $448 billion

Figure 1.12

Cumulative Investment in Infrastructure Projects with Private Participation by Sector or Subsector, Lower-Middle-Income Countries, 1990–2001

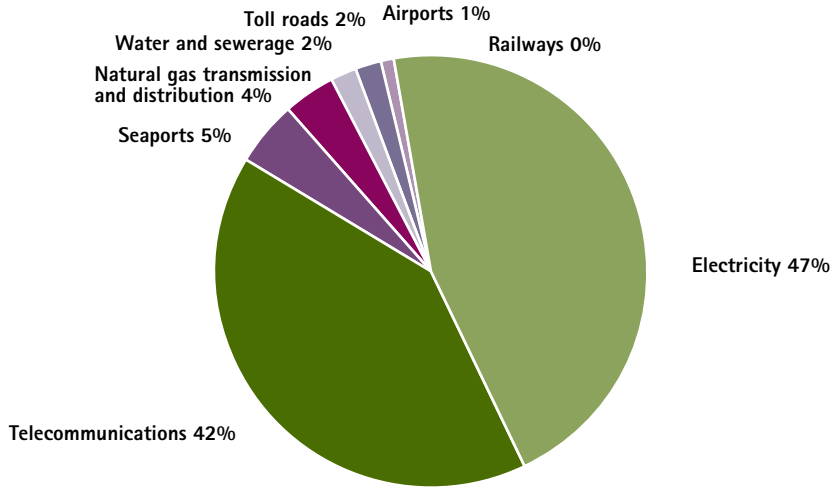


Source: World Bank, PPI Project Database.

Total $224 billion

Figure 1.13

Cumulative Investment in Infrastructure Projects with Private Participation by Sector or Subsector, Low-Income Countries, 1990–2001



Source: World Bank, PPI Project Database.

Total $83 billion

Table 1.4

Top 10 Developing Countries by Cumulative Investment in Infrastructure Projects with Private Participation, 1990–2001

Country	Investment (2001 US$ billions)	Projects
Brazil	135.4	203
Argentina	82.6	165
Mexico	60.0	130
China	53.8	283
Malaysia	36.6	63
Korea, Rep. of	33.2	26
Philippines	32.1	67
Indonesia	28.9	62
India	27.7	122
Thailand	23.9	73
Total for top 10	513.1	1,188
Total for all developing countries	754.1	2,494

Source: World Bank, PPI Project Database.

Table 1.5

Top 10 Developing Countries by Per Capita Cumulative Investment in Infrastructure Projects with Private Participation, 1990–2001

Country	Per capita investment (2001 US$)	Total investment (2001 US$ billions)
Argentina	2,203	82.6
Hungary	1,607	16.0
Malaysia	1,535	36.6
Panama	1,417	4.1
Chile	1,361	21.0
Czech Republic	1,094	11.2
Estonia	991	1.3
Belize	928	0.2
Brazil	784	135.4
Korea, Rep. of	696	33.2

Source: World Bank, PPI Project Database.

Table 1.6

Top 10 Developing Countries by Cumulative Investment in Infrastructure Projects with Private Participation as a Share of GDP, 1990–2001

Country	Investment as a share of GDP (percent)	Investment (2001 US$ billions)
Bolivia	6.0	4.9
Panama	4.3	4.1
Lao PDR	3.6	0.8
Cape Verde	3.6	0.2
Philippines	3.5	32.1
Malaysia	3.5	36.6
Morocco	3.0	13.0
Hungary	2.8	16.0
Chile	2.7	21.0
Argentina	2.6	82.6

Source: World Bank, PPI Project Database.