

Colombia REDI: Recent Economic  
Developments in Infrastructure  
Balancing social and productive needs for infrastructure

Background Papers

Colombia: Mobilizing Private Capital for  
Infrastructure<sup>1</sup>

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## Summary of Main Messages

- After a fairly successful start in the early 1990s, interest in private participation in infrastructure (PPI) in Colombia has fallen substantially. This includes both domestic and international investors. Some existing private participants continue to have difficulties in being profitable. Domestic private investors seem to be doing better than international private investors. The government, however, is keen on trying to bring back private investment into infrastructure in a big way and has identified projects of about US\$ 6.5 billion for potential PPI.
- Sectoral issues are the dominant reasons for decline in interest in PPI. Each sub-sector has specific issues that need to be addressed. Investors' perceive Colombia to be currently significantly less friendly to private infrastructure investment than in the past or in comparison to other countries.
- Macro issues such as a weak investment climate, uncertain legal framework, security (outside of the large cities), worries stemming from the recent economic crisis, as well as loss of investment grade credit rating add to investor concerns. PPI, which began mostly as project finance, is now almost entirely corporate finance – making it a less attractive option for established global players.
- On balance, investors are more concerned about sectoral issues. In order to attract PPI therefore, sectoral reforms would be a priority. These are also a pre-condition for the creation of sound infrastructure projects, that in turn can be financed by both domestic and international investors.
- Credit enhancements and guarantees provided by the Government to sponsors of private infrastructure projects have already cost the Government over US\$ 1 billion and estimates are that it will cost another US\$3.5 billion (in nominal terms) by 2010. Many of these liabilities were incurred at least in part because the Government took on risks that it should not have or because projects were not adequately prepared before PPI was invited in.
- The Government has substantially modified its regime for taking on contingent liabilities with the objective of lowering fiscal costs. However, it is important to keep in mind that just as too much credit enhancement is expensive in terms of fiscal costs, too little can also be expensive in terms of infrastructure that is not provided. The Government therefore needs to develop a sound policy on contingent liabilities and guarantees keeping in mind that it has to be a balance between incurring contingent liabilities and attracting investment. Better identification and allocation of risks between government and private players is key.
- Long-term domestic resources are increasingly available in Colombia – especially as pension funds continue to grow strongly. These can potentially be tapped to finance infrastructure. Regulatory reforms to pension funds to permit them to invest in infrastructure are important to create the supply side of funds – but should go hand-in-hand with sector reforms that strengthen the soundness of the demand side for funds.
- The government is thinking through issues in setting up an infrastructure fund to be financed by pension funds. The infrastructure fund will, in turn, finance infrastructure projects. International experience with such funds needs to be

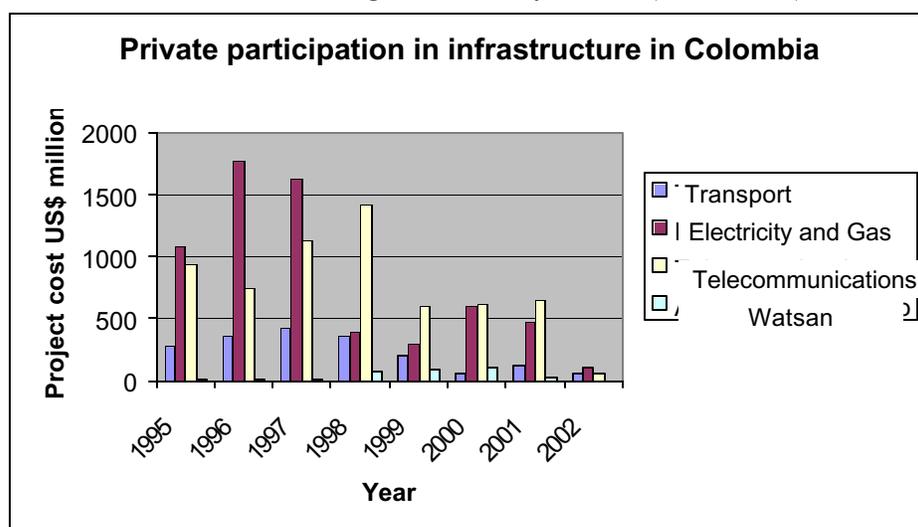
brought to bear on its design to maximize chances for its success. The primary determinant of success of such funds is a sound sectoral environment for private investment. Funds financed with domestic resources, having sound professional management, assured arms-length relationship with government, and those that are able to invest across a variety of sub-sectors of infrastructure have been more successful.

# 1. PRIVATE INFRASTRUCTURE IN COLOMBIA – PAST EXPERIENCE, FUTURE PLANS

## PAST EXPERIENCE

1.1 Colombia began attracting private participation into its infrastructure sectors in the early 1990s beginning with sea ports. Since then Colombia has attracted nearly US\$ 14.7 billion of investment in projects with private participation (Tables 1 and 2 at the end of the paper provide details as of December 2002). The energy sectors – electricity and gas – as well as the telecommunication sector each accounted for around 40 per cent of the total investment in projects with PPI, while the transport sector – including toll roads – accounted for most of the rest. PPI peaked in 1997 and has fallen off significantly since then – in line with global trends (Figure 1).

Figure 1: PPI by Sector (1995-2002)



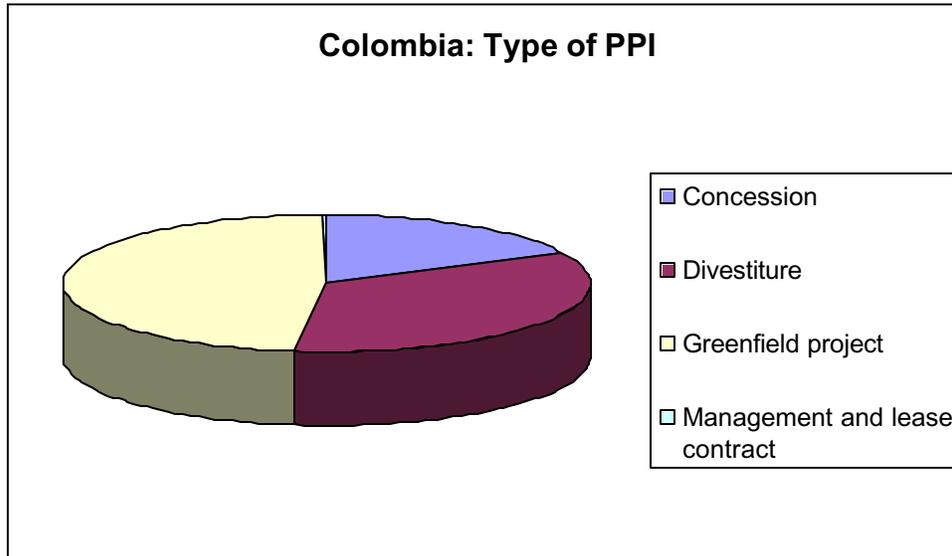
Source: Departamento Nacional de Planeacion.

1.2 Colombia’s initial strategy toward attracting PPI has been termed a “gradualist” approach by observers (Gray, 1997)<sup>2</sup>. PPI was largely welcomed in new facilities, while

<sup>2</sup> Reference: Gray, Philip (1997). “Colombia’s Gradualist Approach to Private Participation in Infrastructure”. Public Policy for the Private Sector Note No. 113, The World Bank.

existing assets were left largely in state hands. Part of the reason for this approach was, with the exception of energy sector, the effectiveness with which existing state enterprises and their trade unions resisted privatization<sup>3</sup>. All divestitures in Colombia were in the energy sector. Another reason was that much of the country's infrastructure was legally owned by its municipal governments and not the central government.

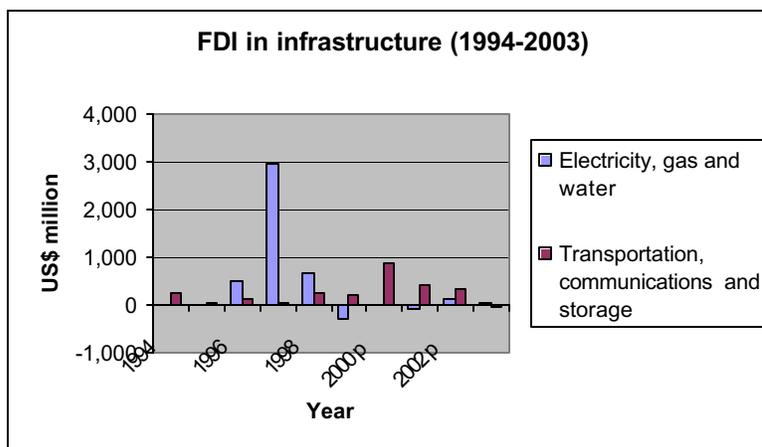
Figure 2: PPI by type (1990-2002)



Source: PPI database, World Bank.

1.3 About \$6.5 billion – about 45 per cent - of the total investment in PPI came in the form of foreign direct investment (Figure 3). Two-thirds of the FDI went into the energy, gas, and water sectors, while the rest went into the other infrastructure sub-sectors.

Figure 3: Foreign direct investment in infrastructure (1994-2003)



Source: Banco de la República.

<sup>3</sup> An attempt was made to privatize the state owned telecommunications company led to week long strike, as a result of which the government backed off from its attempts. Market observers estimate that the firm would have been worth about US\$ 4 billion in 1992. Subsequently the company essentially was bankrupt.

1.4 There is a clear pattern to PPI as well as foreign investments in the sectors since the inception of PPI in the early 1990s. For many years, Colombia had one of the most stable economies in Latin America with consistent high growth and benign inflation. Amongst emerging markets, Colombia was widely regarded for its good quality of governance and macroeconomic management. All these factors combined to provide an investment credit rating to Colombia for a long time. Once the country opened up infrastructure investments to the private sector in 1993, it had substantial success in attracting private investors – particularly through project finance. The growth in private interest in infrastructure projects as well as foreign investment in private infrastructure is seen from the charts above. In 1998, the country began facing economic/political difficulties that led to a crisis in 1999 – with GDP contracting nearly 5 per cent. This immediately led to a decline in private interest in infrastructure as well as a dramatic fall in foreign investment overall in infrastructure. PPI investments across all infrastructure sectors peaked at almost US\$ 3.2 billion in 1997 (Figure 1). By 1999, they had fallen to about US\$ 1.2 billion – a level broadly maintained for the next three years largely due to significant cellular telecommunications investments. By 2002, PPI investments had dropped to just over US\$200 million.

#### **FUTURE PLANS FOR PPI**

1.5 Since the decline of the past few years, there is now a high degree of renewed interest on the part of the government (Dirección Nacional de Planeación, DNP) to see private sector back into infrastructure provision in Colombia. The Government's objectives in attracting PPI are increasing efficiencies in construction and operation, higher service quality, better allocation of risks, and opening up fiscal space for social investments. A number of potential projects have been identified – some of which are existing concessions that are proposed to be “re-packaged”, some of which would be new concessions, and some at earlier stages of the thinking regarding modes of private participation. DNP has identified projects totaling US\$ 6.5 billion as potentially of interest to private participants (Table 3). The flagship offerings are the proposed Bogota-Girardot toll road (US\$ 150 million proposed cost) as well as mass transit systems in several cities – Barranquilla, Pereira, and Cali.

Table 3  
Projects proposed for private participation by Government  
(2004 onwards)

	<b>(US\$ Bill)</b>	<b>%</b>
Transport	0.9	15
SITMs	1.7	26
Airports	0.9	14
Ports	0.1	1
Telecommunications	0.5	8
Energy and Gas	2.0	31
Water and Sanitation	0.0	1
Others	0.2	4
<b>TOTAL</b>	<b>6.5</b>	<b>100</b>

Source: www.dnp.gov.co

Further details of individual projects identified by the Government are given Table 4.

#### **MAIN ISSUES FACING PRIVATE INVESTORS IN INFRASTRUCTURE IN COLOMBIA**

1.6 There have been several reasons for the drop in PPI in Colombia since it peaked in 1997. The global withdrawal of foreign investors from developing countries due to the risks exposed by the East Asian and Latin American crises of the late 1990s are undoubtedly part of the reason. Colombia's economic crisis of the late 1990s and its loss of investment grade rating was another factor. In addition, regulatory and legal issues also pose challenges to private investors in infrastructure in Colombia. One of the main issues is the lack of clarity regarding the public sector's role in regulation, operation, and investment. This issue dominates investor concerns today. Regulatory commissions that were never fully independent even at establishment continue to be seen as unpredictable and arbitrary in setting and changing the rules of the game. The dominance of state owned enterprises in many sectors leads to the perception of the lack of a level playing field for private operators. In order to continue to attract private investment into the generation sector in Colombia, investors' expectations from the government include a stable set of transparent, clear, and cost-based tariff rules. They expect the regulator to be fair and objective to all segments of the market. They expect a level playing field for both state owned and private entities and support at the highest levels for a commercial market-based generation industry over the long-term. The government on its part, views some of the early PPI projects – eg: its “first generation” toll road concessions and electricity projects - to have been excessively generous to the private sector. It has experienced significant adverse budgetary impacts as a result of the credit enhancements and guarantees provided to some of these projects. As a result, it has scaled back its willingness to provide credit enhancements in future to these projects. All of these factors help explain the evolution of PPI investments in Colombia.

1.7 The *power sector* in Colombia has undergone a major transformation - from almost 100% public ownership in 1990 to around 60% private participation in electricity generation (measured in MW installed) and over 43% participation in supply to final consumers. Colombia was a pioneer in introducing structural and regulatory reforms in the sector, with the result that the supply of power now takes place through a well functioning wholesale electricity market, based on the British model, which has been successful in bringing about improvements in efficiency, costs and quality of service. Recent experience of private generators indicates, however, that there is considerable uncertainty about the way rules and regulations of the market will evolve going forward. More than eighty regulations are issued each year by CREG – the regulatory authority since the electricity market was created. These rules often involve fundamental changes in market rules, changes in the way various charges are calculated, changes in the way supply of electricity is regulated and restrictions on price caps are imposed. The large number of changes create substantial unpredictability in the ability of private operators to forecast their financial performance and consequently adversely affect their profitability. Such actions also convey the message that the government does not intend to comply with its own rules and regulations established at the time the private investors came in. Once investments are locked in, private investors are concerned that the rules of the game will change dramatically. There are also concerns amongst the private players regarding the degree of independence of CREG as well as regarding the technical capacity of staff of CREG. The assumptions on which electricity consumption is forecast – which in turn send signals regarding the expansion requirements of generation capacity – are considered to be too optimistic. The government is viewed as still considering electricity tariffs as an instrument of social policy and hence tariffs not being set on fully commercial considerations. The fact that nearly half the generation capacity is still controlled by the state, in addition to its role as a regulator leads to conflicts of interest which private participants see as leading to decisions that are often to their detriment.

1.8 Colombia was also a pioneer in promoting the participation of the private sector in development of *ports*, which handled the bulk of the country's exports, and airports. The country's general cargo port terminals were privatized over a three year period, 1991-93, during which time legal reforms were put into place, due diligence conducted and separate concessions offered for each port. The government kept a 30% share of the ownership structure of the concessions, retaining ownership of the port infrastructure. The concessions, which turned out to be fairly successful have resulted in significant improvements in port productivity.

1.9 As regards *airports*, in 1993, the government corporatized its Civil Aviation Authority, and undertook development of a second runway at El Dorado international airport in Bogota, under a 20-year BOT concession. Three hub airports and the second terminal at El Dorado airport in Bogota were similarly given out under concession contracts. The Government is looking to attract further PPI into airport concessions – especially in upgrading overall facilities at Bogota airport and is also considering giving out concession to airports outside of the capital.

1.10 Private participation was also sought to be introduced in the roads and highways sector, through use of *toll road* concessions. About 15 concessions for toll roads were given out during 1993-2000. In the early projects awarded in this sector, the Government attracted private investors through providing guarantees against a whole host of risks – including minimum profitability, cost over-runs, etc. While there was significant interest, traffic estimates proved to be highly optimistic and resulted in the government having to pay out on its guarantees. Inherent environmental and geological risks added to project complexity and inadequate project preparation in these areas was highlighted. The Government began to restructure its guarantees under new laws in 1998 and 2001, effectively passing on greater risks to private investors. Since then, investor interest has been low although it is difficult to distinguish between the impacts of overall decline in interest in PPI and decline due to reduction of coverage offered by the government. Security considerations at various times in certain parts of the country may also have adversely affected PPI as well as traffic volumes.

1.11 The *telecommunications* sector lagged behind this progress, having seen relatively limited progress in terms of private sector participation. Currently, only 3.4% of telephone lines in Colombia are in the hands of private companies, compared to an average of 85% for Latin America as a whole. Part of the constraint has been the fragmentation of regulatory institutions in the sub-sector and the relatively low telephone tariffs set (in some cases well below the cost of providing service), which has acted as a major disincentive to private companies considering entry. In addition, the dominant role of national and local telephone enterprises as well as the “artificial” distinction between public and non-public services with correspondent regulatory problems have also played a major role in constraining PPI. Colombia also has a very low level of internet penetration – only 0.54 internet hosts per 1,000 inhabitants, well below other countries of comparable GDP per capita, such as Brazil and Mexico.

1.12 Beyond sector specific issues, private infrastructure investors have also been concerned about uncertainties in the *legal environment* in Colombia. These issues are not unique to infrastructure investors and adversely affect the investment climate more generally. Investors feel that even relatively simple civil court cases typically take several years to resolve – effectively making the judicial system a part of the problem and not that of the solution. In the particular case of bankruptcy law – a key issue for bond holders - the legal process is also assessed by investors to be weak and inefficient, thereby effectively diminishing the rights of bond holders. This continues to be the case despite reform of the bankruptcy law (550/1999) in 1999 that replaced the previous law (222/1995) and legalized agreements reached mutually between creditors and debtors – without the need for a court approval of the same. The World Bank estimates (Doing Business 2004) that resolving a payment dispute in Colombia involves 37 procedures and takes an average of 527 days while closing a business in Colombia takes an average of 3 years. In relatively terms, Colombia is in the bottom half globally on these indicators. For infrastructure investors – given the very nature of their projects – these procedures tend to get more complex, time consuming, and, often politicized. Another area of concern to

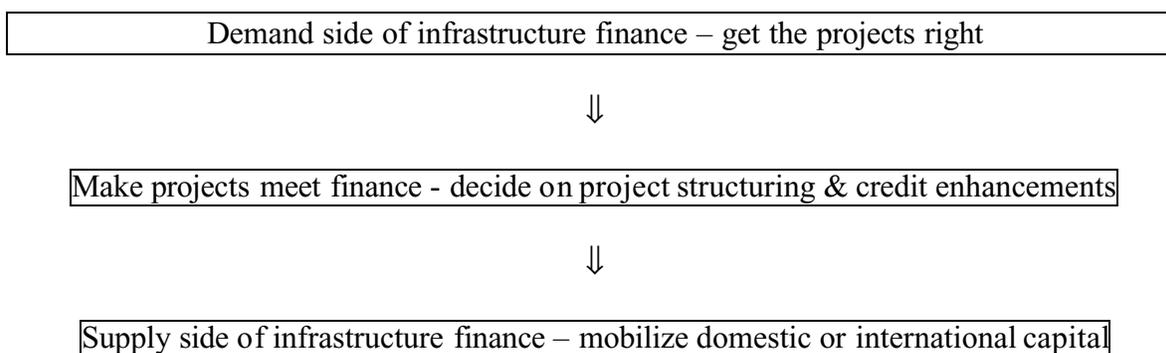
investors is that in Colombia, the legal system is geared more towards dealing with banks or other similar large creditors individually rather than with atomistic bond holders as a group. Bond holders are recognized as individual creditors to a debtor, but no legal recognition is provided to their ability to approach the justice system as a group – or have a trustee approach the system on their behalf. Given that bond holders are often widely dispersed, enabling a representative to approach the legal system would strengthen the rights of the bond holders. Finally, several investors expressed concern about the ease with which frivolous law suits can be brought against firms in Colombia (the “tutelas”). The cost of dealing with these law suits further adds to the cost of doing business and detracts from a positive investment environment.

## 2. MAKING FINANCE MEET PROJECTS: CREDIT ENHANCEMENTS – PAST EXPERIENCE, FUTURE OPTIONS

### A FRAMEWORK FOR THINKING ABOUT INFRASTRUCTURE FINANCE

2.1 A simple way to think about attracting private investment into infrastructure is to begin with getting the projects right, which essentially implies that projects need to operate within a sound sectoral framework wherein their intrinsic viability can be ensured. Once a project is fundamentally viable, different financing structures can be brought to bear on it in line with the risk characteristics of the project. Well structured projects are key to attracting private investment – whether domestic or international – into infrastructure. Financial engineering usually does not compensate for sectoral weaknesses in the creation of soundly structured projects. Therefore, the first step in attracting private investors into infrastructure needs to focus on reforms that are necessary in the sectors.

**Figure 4**  
**A simple framework for infrastructure finance**



2.2 Once the right regulatory and legal environment for infrastructure projects has been established, the next step that governments need to think about is how to structure the projects so that they can attract private financing for these projects. The basic rationale for sound structuring of projects arises from the nature of infrastructure projects – high initial capital costs, long-gestation periods, significant risks in construction and operation, low technical and (often) market risks, but high regulatory risks, and revenues

largely denominated in local currencies. Given these characteristics, long-term financing – domestic or international - is essential for privately-owned infrastructure projects to be financially viable. This is especially the case, since even though many foreign corporate sponsors of projects have sufficient financial strength to fund project costs on the basis of the strength of their balance sheets, they almost never do so. The capital intensive nature of infrastructure projects and their fundamental importance to economic development in many countries makes them natural candidates for high levels of leverage. Therefore projects are almost always financed on a project finance basis – where the income to repay project creditors comes almost entirely from the revenues generated by the project. Creditors have little or no recourse to sponsors and therefore creditors look to soundly structured projects to assure them that they will get repaid. The key issue in structuring is the appropriate sharing of project risks between various stake holders – with the fundamental principle being that those who are best able to manage the risks should bear them. Given their long term nature, infrastructure projects are exposed to several risks – political including expropriation, macroeconomic, pre-construction, land acquisition, construction, force majeure, tort liability, demand and revenue, exchange rate and convertibility, and financial risk. Depending on the country and the nature of project, these risks are shared between the Government and project sponsors. The Government usually needs to take on political and macroeconomic risks – which are beyond the ability of the sponsor to manage, while a suitable structure for sharing the other risks needs to be designed. The contractual manifestation of this risk sharing – from the Government’s point of view - is the contingent liabilities that the Government takes on and the credit enhancements that it provides to sponsors.

2.3 The final step in the process is to take well structured infrastructure projects operating in a sound regulatory and legal environment to market and mobilize finance from domestic or international markets.

#### **THE IMPORTANCE OF CREDIT RATING IN INFRASTRUCTURE FINANCE**

2.4 A key determinant of the kinds and degree of credit enhancements to be offered is the credit rating of the country in which projects are being undertaken as well as the credit rating of the bonds issued by the particular project. Although in theory, credit rating of a particular issue of bonds by a particular project can be higher than that of the country – through the use of financial engineering – this has rarely been the case in the past developing countries. Most projects in developing countries are constrained by the country ceiling i.e. the highest credit rating that bonds from an infrastructure project are likely to get is the credit rating of the country itself. Since a country credit rating differs in local and international markets – this implies that local and international bonds issued by a project are usually constrained by different ratings – depending on the currency in which bonds are issued.

2.5 Conceptually, long-term financing of developing country infrastructure projects can be placed in one of four categories in Figure 5 below, depending on the rating of the project bonds and the sovereign rating of the country in which the project is located.

**Figure 5**  
**Credit rating and infrastructure finance**

		Project Rating	
		Investment Grade	Below Investment Grade
Country Rating	Investment Grade	Type A	Type B
	Below Investment Grade	Type D	Type C

During the 1990s, the majority of the projects that were privately financed (in international markets) belonged to categories A, B, or C.

**Type A:** Chile, Colombia, and Indonesia each had a (low) investment grade rating for much of the 1990s and privately financed infrastructure projects in these countries issued bonds with similar investment grade ratings.

**Type B:** China and Trinidad & Tobago had investment grade ratings, but many infrastructure projects in these countries issued securities that were below investment grade.

**Type C:** Several infrastructure projects in Argentina, Mexico, and the Philippines were below investment grade and at the time, these countries were also below investment grade.

2.6 Historically, local currency financing for infrastructure private projects has been limited in developing countries, and therefore most of these projects raised financing through bonds offered in international markets. Crises in East Asia and Latin America in the late 1990s and early 2000s have made international investors wary of developing country risk generally and infrastructure projects in particular. Structures that helped developing countries obtain access to investment grade financing – for example through using US-dollar denominated or US-dollar-indexed power tariffs – were proven to be unsustainable as governments renegotiated such contracts with sponsors after crises. In addition, even if projects were not renegotiated, the credit rating of the bonds moved along with that of the countries itself – and therefore if a country – such as Colombia was

downgraded – its infrastructure bonds were downgraded also, thereby exposing investors to losses. These experiences highlighted the critical importance of country risk to project sponsors. In addition, international emphasis has shifted towards trying to structure Type D projects – one where even though the country itself may be below investment grade, the securities issues by the project can be structured to be investment grade – thereby providing investors a greater degree of assurance regarding repayment (see discussion below). The question now is what sorts of credit enhancements can governments offer within the context of the lower risk tolerance of international investors in order to attract private financing for infrastructure?

2.7 Within the above conceptual framework, the rest of this section explores Colombia's past experience with credit enhancements, the estimated costs of these enhancements, a conceptual discussion of the kinds of enhancements that might be offered in the future and what risks they would mitigate, and finally a discussion of what the Government of Colombia might do in the short-medium term to try to get back private capital into infrastructure.

### **COLOMBIA'S PAST EXPERIENCE WITH CREDIT ENHANCEMENTS**

2.8 Colombia's experience with credit enhancements and guarantees has evolved over the years. In its "first generation" of infrastructure projects, Colombia offered a fairly wide ranging set of guarantees to investors. The guarantees generally covered risks relating to demand or traffic, tariff changes, revenue shortfalls, cost overruns, regulatory framework changes, inflation, and exchange rates<sup>4</sup>. These guarantees also covered a range of sectors – roads, water supply and sewerage, electricity generation, airports, and telecommunications. Significant contingent liabilities in Colombia result from private sector concessions in infrastructure. The state has transformed its role from that of direct service provider to guarantor of minimum sales to private sector service provider. Initially, contracts involved fixed terms within which the government guaranteed a level of profitability. After some adjustment, current contracts are flexible in length, which allows low profitability to be compensated over time. Both types of government guarantees, however, involve uncertainty over whether, when and how much public financing will be required in the future.

2.9 A good example of the evolution in Government's thinking about credit enhancement and guarantees is provided by the transport. During 1994-03, Colombia offered 11 toll road concessions under the so-called "First Generation" of projects, 2 under the so-called Second Generation and proposes to offer all new toll roads under the Third Generation. Each generation of projects is characterized by a different pattern of risk sharing between the government and the sponsor (See Table 5 below). In the first

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<sup>4</sup> Presentation at the Inter-American Development Bank by Director General, Hacienda, Colombia.

generation of toll road projects, the Government assumed – either in whole or in part – construction, traffic, tariff, and environmental risks. It provided minimum traffic guarantees on the basis of what turned out to be highly optimistic traffic forecasts and this has cost the government substantially in terms of payouts to project sponsors (see discussion below). It also took on the responsibility of paying for construction works that exceeded (on average) 30% of the initial estimated costs; these overruns were usually associated with environmental or geological risks. In the subsequent “generations” of projects, the government has decided not to offer minimum traffic guarantees, but still offers guarantees for certain risks such as for foreign exchange, environmental risks, geological risks, and non-insurable force majeure events. Along with the changes in coverage of the types of risks, the Government has also modified the structure of concession contracts in order to try to make the concessions more attractive. Unlike the first generation projects, where the concession term was fixed a priori, the second and third generation projects have flexible concession terms, providing the investors with a greater time to recoup investments if realized traffic falls below forecasts. The roads are to be transferred to the Government after the investor has obtained a pre-specified rate of return. The latter generations of projects also call for greater emphasis on project preparation – so that many of the risks such as environmental and geological risks – can be identified and incorporated better into project design. A key feature of the third generation of projects is the creation of a liquidity facility that is funded ex-ante with the expected value of the contingent liabilities, thereby providing investors with a greater assurance that the state will be in a position to meet its obligations as they have been (at least partially) pre-funded.

**Table 5**  
**Guarantees offered in toll roads in Colombia**

Risk	First generation		Second Generation		Third Generation	
	Concessionaire	Invias	Concessionaire	Invias	Concessionaire	Invias
Construction	X	X	X		X	
Traffic		X	X		X	
Tarriff		X		X		X
Predios		X		X	Gestión	X
Environmental		X		X	Gestión	X
Tributario	X		X		X	
Foreign exchange	X	X	X		X	X
Force Majeure(insurable)	X		X		X	
Force Majeure (non-insurable)		X		X		X
Financing	X		X		X	

Source: Hacienda.

2.10 Clearly, many of the risks that the Government did take on in the first generation projects could have been addressed through better project preparation and through more realistic demand forecasts – as is the intention with the latter generations of projects.

This said, however, there remains a role for the government to provide credit enhancements in areas where the government is best able to manage risks, in order to attract PPI. The revision in the government's thinking on credit enhancement to be offered for toll roads has both costs and benefits. The benefits essentially are that as it takes on fewer risks, its contingent liabilities are reduced and therefore future demands on fiscal resources are also reduced. However, the costs are that private sector interest in toll roads in Colombia has declined significantly, especially when combined with the loss of investment grade rating – which makes raising private resources in future a challenge. In addition, consecutive generations of toll road projects have made project structures more complex – for example through variable length of concessions. As Colombia competes with other developing countries for PPI, the relative complexity of projects could be a deterrent to PPI. Thus far, the experience with second and third generation project structures has not been satisfactory – although it is difficult to say whether the revised terms were the only reason – as these structures were put in place in a period in which private capital was withdrawing from developing country infrastructure investments and in which Colombia faced an economic crisis and lost its investment grade rating. Two projects were offered under the second generation scheme – both of which have not been implemented. No projects have yet been financed under the scheme of the third generation, although the Government has identified several projects for which it intends to seek private financing in the near future.

#### **FISCAL COSTS OF PAST CREDIT ENHANCEMENTS**

2.11 In 1997, Colombia began identifying and quantifying its contingent liabilities. As part of a comprehensive exercise that spanned an analysis of several areas such as pension liabilities, natural disasters, and the peace process, an analysis of government's fiscal exposure due to contingent liabilities extended to privately sponsored infrastructure projects was also undertaken. Across the guarantees that had been issued until 2002, the net present value of contingent liabilities in the infrastructure sector was estimated at about 6 per cent of GDP<sup>5</sup> (Echeverry et. al. 2002).

2.12 The calculated net present value of the contingent liability associated with traffic volume is 0.1 percent of GDP in the toll road sector. A large guarantee was issued on the second runway at Bogota's El Dorado International Airport. In addition to the requirement to maintain both runways, the guarantee also covers minimum income conditions. The net present value of this contingency for the duration of the airport project (20 years) was estimated to be about 0.7 percent. In the energy sector, the government has had to assume the difference between the actual market price and the price agreed on with investors. The net present value of this contingency was estimated to be about 0.5 percent of GDP. In the telecommunications sector, the government has

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<sup>5</sup> While this is no doubt significant, in Colombia it pales in comparison to NPV of future pension benefits promised by the state – about 160 per cent of GDP. But infrastructure exposure is three to five times the estimated fiscal cost of the financial sector crisis – 1.2 to 1.7 per cent of GDP.

provided minimum income guarantees (contained in four-year joint venture contracts), covering a certain number of conversation minutes. The net present value of these guarantees is about 0.2 percent of GDP. Other contingent liabilities are expected to emerge from the construction of the Bogota Metro. Here the contingency is related to the probability of liabilities being larger than predicted, and is partly a consequence of regulatory ambiguities. The law that authorized the construction of the Bogota Metro states that if excess costs imputable to the public sector are generated, the national government is obliged to cover 70 percent of excess costs. In addition, the government covers currency risks related to external financing as well as the cost of construction delays and of required public services (such as laying pipes for the waterworks).

2.13 The Government has paid out about over US\$ 1 billion towards claims on the guarantees/credit enhancements that it had provided to various sectors as of December 2003. In future, until 2010, estimates are that it expects to pay out another US\$ 3.6 billion (in nominal terms). The single largest entity to which payouts have been made and expected to continue to be made is Corelca against the PPAs that had been entered into in the energy sector.

**Table 6**  
**Payouts on guarantees/credit enhancements (US\$ million)**

Year	Energy	Toll roads	Telecom JVs	Electrolima	Ecogas	Corelca	Total
1996	n.a.	12	n.a.	n.a.	n.a.	n.a.	
1997	n.a.	12	n.a.	n.a.	n.a.	n.a.	
1998	n.a.	12	n.a.	n.a.	n.a.	n.a.	
1999	64	15	n.a.	n.a.	n.a.	n.a.	
2000	95	16	n.a.	n.a.	n.a.	n.a.	
2001	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
2002	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
2003	n.a.	n.a.	321	19	30	487	
<b>Total paid</b>	<b>158</b>	<b>68</b>	<b>321</b>	<b>19</b>	<b>30</b>	<b>487</b>	<b>1,084</b>
2004	99	22	236	n.a.	33	442	
2005	87	21	54	n.a.	37	427	
2006	75	20	n.a.	n.a.	42	417	
2007	66	18	n.a.	n.a.	47	393	
2008	60	16	n.a.	n.a.	53	370	
2009	30	12	n.a.	n.a.	59	224	
2010	28	11	n.a.	n.a.	66	173	
Tot. expected fut. payouts	446	120	290	-	337	2,446	3,639
<b>Grand Total</b>							<b>4,723</b>

Source: Subdirección de Seguimiento Programación y Seguimiento Presupuestal del Sector Descentralizado, SPSD-DNP, INVIAS.

## TYPES OF CREDIT ENHANCEMENTS OFFERED INTERNATIONALLY <sup>6</sup>

2.14 In order to attract private financing for infrastructure projects, successful countries have first established a system for protecting private investment; second, they have created mechanisms for parties to bind themselves through contracts, including the granting of collateral to secure obligations (whether by pledge, assignment, mortgage, power of attorney, trust, sale-leaseback, title retention or otherwise); and finally, provided for enforcement of agreements reached.

2.15 As this overall environment is being put in place and as investors comfort and confidence with this framework, international experience suggests that Government would be required to play a significant role – often in terms of providing some form of credit support to lenders – at least in the early stages of evolution of domestic market investment in infrastructure. Most forms of Government credit support imply contingent liabilities for the public sector. Clearly, therefore, Governments need to be selective in the form and extent of support that they wish to provide. However, it is important to keep in mind that too little Government support, especially at early stages of market development, could be as detrimental as too much support. Too little government support would – most likely – curtail access to domestic markets and thereby reduce the amount of private financing available with its implications for slower development of the sector. Too much support, on the hand, exposes Governments to excessive and unnecessary risks. In addition, as the market matures and investors become more experienced in evaluating risk-return trade-offs in infrastructure projects, the extent of Government would naturally decline.

2.16 Therefore, in order to increase the attractiveness of debt issues for infrastructure, the government can take a pro-active role by instituting mechanisms for credit enhancement, such as different types of targeted guarantees, partial subsidies or direct participations. In general, government supports through credit enhancement should be provided only if such support: (i) serves to tap private funding which otherwise would not be available; (ii) is based on a rigorous cost-benefit analysis comparing scenarios with and without government support; (iii) can be limited in scope without exposing the government to risks that private investors are already willing to assume; (iv) does not subordinate government participation to that of equity holders; and (v) is offered under commercial terms and conditions. The rest of this section provides further details on the kinds of credit enhancements that can be considered by the Government of Colombia.

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<sup>6</sup> This section draws extensively from Kumar et. al. “Mobilizing Domestic Capital Markets for Infrastructure Financing”, World Discussion paper No. 37, 1997.

## Policy Guarantees

2.17 A policy guarantee is a structure wherein the government undertakes to compensate lenders in the event of certain risks such as currency inconvertibility, payment defaults by SOEs, and change of law or regulatory framework. These guarantees are especially relevant in a situation where the overall policy framework for private infrastructure established by the country is still being tested and interpreted by the courts and regulatory authorities or if the country is recovering from a period of crisis where lenders need to regain confidence – as is arguably the case in Colombia. These guarantees could also be “backed up,” i.e., credit-enhanced by multilateral or bilateral guarantees or contingent lines of credit. As these latter institutions are mostly “AAA” rated, projects supported by them may obtain a credit rating equal to, or even higher, than that of the country. In order to assure the transitional character of this instrument, reduction and cancellation provisions should be built in. Moreover, guarantees should be structured to achieve the maximum leverage (for example, by compensating for only part of the outstanding commitments of the project) in order to keep the level of contingent liabilities of the government to a minimum. Other key issues to be addressed include budgetary exposure management, minimization of the impact on the government borrowing capacity, and clarity of guarantee provisions.

## Refinancing and Maturity Extension Guarantees

2.18 In order to improve lenders’ assets/liabilities match and assure investors the required maturities for project debt, the government could at the time of financial closing provide a guarantee to *refinance* the project debt at a given point after construction and at a pre-defined interest rate. This commitment could be enhanced by multilateral or bilateral guarantees or contingent lines of credit. It should be designed to provide liquidity support should market disruptions occur at the time of a scheduled refinancing (e.g., bond redemption), but not to refinance a project with unsatisfactory performance.

2.19 *Maturity extension guarantees* assure payment of debt service to lenders over the later maturities, thus addressing long-term credit risk concerns. Refinancing guarantees help lenders better manage their balance sheets and funding operations and therefore aim at facilitating the participation of both local and international commercial debt providers, while maturity extension guarantees are specifically targeted to institutional investors which can already provide extended maturities, but may not be willing to do so in specific projects.

2.20 In order to insulate the government from undue commercial risks, these guarantees should only be callable if the project’s performance is satisfactory, e.g., if a minimum debt service coverage ratio is achieved and the concession agreement fully complied with. Provisions to allow for renegotiation of the maturity covered could

introduce flexibility when risk perceptions improve. Moreover, the guarantees can be tailored to meet project-specific needs, for instance, through covering of a balloon payment at the end of the maturity to lower debt service and thus tariffs in the earlier years.

### **Performance-Based Grants**

2.21 In those cases where: (i) the project's social benefits in the form of economic development, health or environmental protection exceed public willingness to pay tariffs which cover costs and meet investor return requirements; (ii) marginal cost is below average costs (e.g., a hydro-electric facility or an uncongested toll-road); or (iii) it is politically not feasible to raise tariffs to cost recovery levels over the short term, the government could agree to provide performance-based grants in the form of supplements to the unit tariff paid by the end-user. These grant payments could be reduced over time as tariffs are brought up to cost recovery level.

2.22 The subsidy could be structured to minimize the government's exposure to commercial risks if it is paid only when the project is in compliance with the concession and permitting arrangements. A grant reduction clause should be introduced from the beginning for the case when actual profits are in excess of base case projections. Some type of cancellation, profit sharing, or tax arrangement might be considered for this case.

### **Contingent Lines of Credit (LOC)**

2.23 Access to construction funding, in the past mostly provided by commercial banks, can be quite difficult for many infrastructure projects, as (i) it is a local business that requires great familiarity with the institutions, laws and regulations and actors specific to the project being financed, and (ii) it is contingent on a good understanding of limited-recourse project financing concepts. Commercial banks, and more so institutional investors, have thus only rarely assumed the full construction risk and generally require comprehensive completion guarantees by sponsors and construction companies. For this reason, private funding for infrastructure projects with major construction works and long construction periods is relatively scarce. In transport projects the financing issues are aggravated by the uncertainties regarding traffic levels and growth.

2.24 Under such circumstances, the government may look to mitigate these risks through certain contingent credit support mechanisms. However this support should be considered as an option only if it: (i) serves to tap private funding which otherwise would not be available; (ii) is based on a rigorous cost-benefit analysis comparing scenarios with and without government support; (iii) can be precisely limited in scope without

exposing the government to other risks that private investors are already willing to assume; (iv) does not subordinate government participation to that of equity holders; and (v) is offered under commercial terms and conditions. The LOC could also serve to enhance debt service and operating contingency reserves required by the commercial lenders to cover possible cash flow deficiencies during the operating period.

2.25 Recognizing that this instrument does potentially expose the government to certain specified commercial risks, it would be important to include *disincentives* regarding availability and use. For example, absorption of initial losses by private participants, penalty points for bids which seek access to these funds, commercial fees and interest rates, cancellation provisions, amortization before allowing dividend payments to the equity holders, and certain conversion features allowing the government to share the project's upside potential.

### **Partially Subordinated Debt**

2.26 Given risk considerations of foreign lenders and limitations of local capital markets, availability of debt financing for infrastructure may be insufficient over the short and medium term. Under these conditions, project sponsors may approach the government seeking direct equity or subordinated debt funding for the projects in question. However, as the government would thus, in principle, expose itself to all project risks, this should be the last-resort option. Nevertheless, it would still be possible to achieve some protection against certain commercial, in particular equity-type, risks. If, for example, loss to the project's debt financiers results from failure to comply with the concession arrangement, the government could be treated on a *pari-passu* basis with other senior lenders. Moreover, disincentives similar to those listed for LOCs could be built in as well as a clear definition of exit mechanisms for government financial participation.

### **Policy Considerations**

2.27 The following issues need to be addressed when the support mechanisms outlined above are designed and implemented: (i) treatment of support mechanisms in bidding documents; (ii) appropriate pricing to allow for an adequate allocation of risks among project participants; (iii) funding mechanisms (capital markets, bank debt, government budget resources, borrowing from multilateral or bilateral sources); (iv) possible conflicts of interest if one area of the government is required to negotiate policy guarantees with other governmental entities involved in the project; and (v) procurement, environmental and other related matters.

2.28 Several other structures for credit enhancement exist and these need to be tailored to the specific project and the environment in which resources are sought to be mobilized. The Government could also consider establishing an infrastructure development fund that

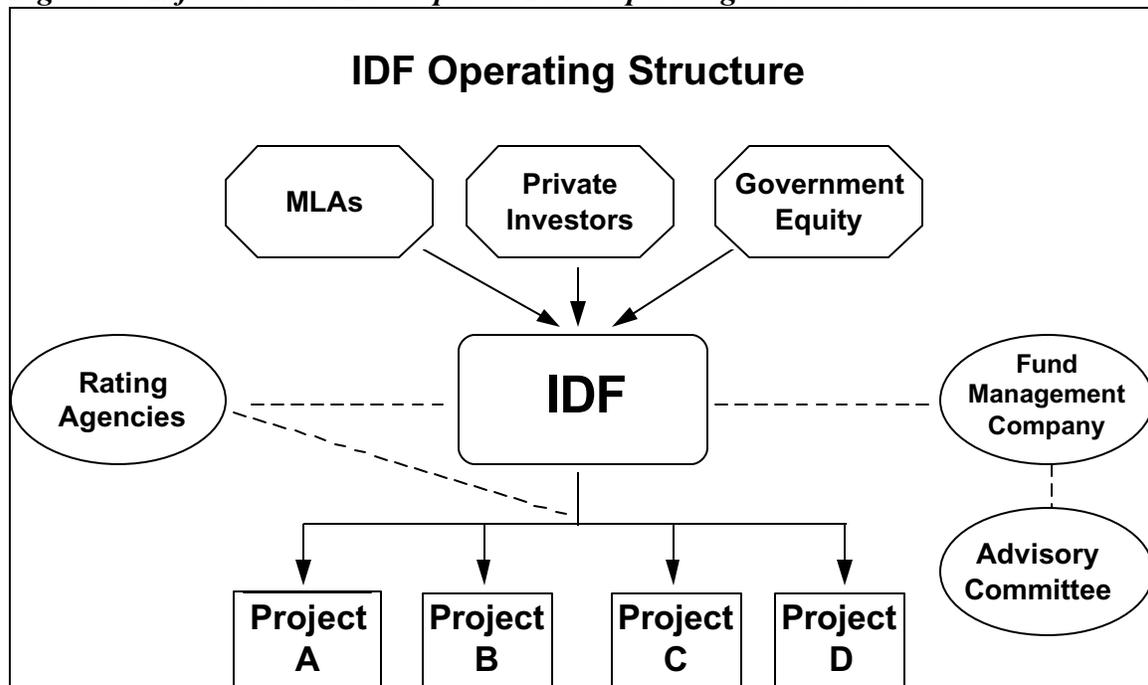
could pool the funding and credit supports for multiple projects into one vehicle, thereby reducing the risks for the pool as a whole, and subsequently obtaining better funding terms than for each project.

### INFRASTRUCTURE FUNDS AND STRUCTURES FOR POOLING PROJECTS

2.29 The Government of Colombia is currently considering possibilities of establishing an infrastructure development fund as well as exploring options for securitizing its existing infrastructure investments as means to attract private investment into infrastructure. This section discusses key issues to considered in this process based on international experience.

2.30 Funding of more than one transaction at a time (securitization) has entailed significant benefits in terms of enhanced credit ratings and market liquidity for infrastructure projects. One vehicle for capturing these benefits is an Infrastructure Development Fund (IDF), which bundle securities (debt and equity) issued by a pool of infrastructure projects. The credit support for these offerings would consist of the combined projects' assets and operative arrangements (construction, offtake, concession, insurance, etc.), guarantees, contingency reserves and combined cash flows generated by the portfolio of projects.

*Figure 7: Infrastructure Development Fund Operating Structure*



MLAs: Multilateral agencies, IDF: Infrastructure development fund.[UN1]

2.31 On the basis of the composition of fund investors, markets targeted, type of funding products offered, fund manager qualifications, government involvement, possible credit enhancement through multilateral or bilateral institutions, and overall investment strategy, the IDF could seek a credit rating. To the extent that the IDF can achieve a rating in the investment grade end of the market, this would: (i) significantly increase the investor base to which it has access; (ii) reduce its all-in borrowing costs; (iii) open up new investor markets; (iv) provide for stable access to capital; and (v) provide for greater flexibility with respect to market timing.

2.32 There are a number of options for the design of IDFs. The chosen strategy will ultimately depend on the government's sectoral and financial objectives, the degree of development of the regulatory environment, characteristics of the pipeline of available projects and the degree and form of government support.

2.33 Under "Discrete Pool" structure, the IDF would, before financial closing, identify a defined pool of projects for which it would provide financing. The fund manager function under this structure would be very limited. As investors would conduct their own due diligence and the IDF would be established just for a single financial offering, a trustee/agent bank would be required to administer the project's cash flow and oversee compliance with the project's operative and financial agreements. Discrete pools do not lend themselves easily to greenfield projects, as institutional investors are, for the most part, uncomfortable with construction risk. However, over time, an increasing share of greenfield projects may be feasible for each pool when investors become more familiar with the structures and risks involved.

2.34 An alternative is a "Blind-Pool" or a "quasi-blind pool" structure that would effectively represent the creation of an infrastructure bank or operating company. The IDF would be formed as a public-private partnership between the government (which may or may not contribute cash) and strategic sponsors, such as developers, contractors and equipment providers, local investors (who will be the primary managers of the IDF) and small shareholders. The IDF's ability to access capital will be based on a diversified corporate portfolio rather than on an individual project or specific pool of projects. The management and operating expertise of the strategic sponsors would thus be crucial for the performance and access to re-financing of the IDF. An initial package of projects could be identified upon establishing the IDF (*Phase I*) and subsequently expanded (*Phase II*). The IDF could then seek to securitize a portion of its portfolio by issuing debt and/or equity offerings which would be backed by the cash flow generated from these projects (*Phase III*). "Sales proceeds" received from these offerings could be (i) invested in new projects and/or (ii) paid to IDF investors as capital gains. Advantages of the model center upon increased flexibility to changing market conditions and investment opportunities, as well as reduced transaction costs. However, given the added risk to investors, market liquidity may be limited and cost of funding higher than in the discrete pool model. Depending on market conditions, a private-sector quasi-blind model may prove to be more viable once a positive track record of private investment as developed

via discrete pool financing or through a series of individual undertakings has been established.

2.35 A third option is for the Government to create a construction revolving fund that could provide construction financing or guarantees for greenfield projects. Once these projects have established an operating track record they could be refinanced on a stand-alone basis in the private markets or the IDF guarantee could fall away. Depending on the pipeline of projects, the respective timing for entering into commercial operation, and governmental budgetary considerations, refinancings of IDF loans could take place on a pooled or individual basis. The refinancing proceeds received could then be subsequently reinvested in new greenfield projects. Special attention would be required regarding the IDF's exposure to effectively all commercial risks during the construction phase, as well as the possible negative effects on the growth of private sector funding options.

2.36 Yet another option is to structure the Infrastructure Fund not as a financier but as an insurer of risks. A government-sponsored IDF, possibly backed up by multilateral or bilateral support, could provide credit insurance for debt issued by infrastructure projects. If the IDF could achieve an investment grade rating and provide coverage for the full array of project, policy and country risks, the bonds issued by the private projects should achieve a rating equal to that of the IDF. This would substantially increase market liquidity. If risks are manageable, the IDF's gearing ratio can be high, its premiums low and the net reduction in interest costs substantial for the project. Bond insurance companies in the US have gearing ratios of 100 to 150:1 and offer very low premiums; this allows the issuer to capture the 0.75% to 1.5% interest rate difference typically prevailing between AAA and BBB-rated bonds. Close review of the government's exposure to commercial risks would be required. Over time, as the sector and IDF operating track record is developed, direct private shareholding in the IDF could be sought.

2.37 The IDF, potentially for all the proposed structures, could pool either some or all of its projects and issue securities in amounts sufficient to pay off existing debt and provide investors with their required return. These securities could be backed by a dedicated portion or all cash flow generated by the IDF's portfolio of investments, as well as the capital contribution of its investors. Similarly, the IDF could seek a listing on the local or regional stock exchanges. Many closed-end equity infrastructure funds have been set up to allow for possible listings after an initial time period (typically around 5 years), sufficient to allow for preliminary returns on investments as well as to allow the overall portfolio of investments to develop the required track record that many stock exchanges and investors require.

## **Implementation issues for infrastructure funds**

2.38 The design of an IDF would require careful definition of a number of key implementation features including (i) review of project pipeline; (ii) general operating framework, policy guidelines and risk management strategy; (iii) core investor base, specifically the government and/or multilateral agency's participation and shareholder's agreement; (iv) legal and regulatory framework, (v) promotional measures and incentives; (vi) type of fund and development role; (vii) investment criteria; (viii) fund management; and (ix) choice of financial products.

2.39 If the IDF is developed under the blind-pool model in conjunction with private investors, it will need to be managed by an independent fund manager with experience in analyzing project loans. The fund manager must be viewed by the investment community as being free from outside influence. For credit rating purposes, initially the discretion of the fund manager may need to be limited to those projects outlined in the prospectus.

2.40 The management and supervisory structure would include (i) the *Board of Directors*, responsible for reviewing and supervising the fund manager's activities; (ii) the *Credit Committee*, responsible for all credit commitment decisions; (iii) the *Advisory Committee*, which could provide on a periodic, project-specific, or as-requested basis recommendations, information, or technical assistance; (iv) the *Audit Committee*, responsible for reviewing financing and accounting matters; and (v) a *Facility Administrator*, responsible for maintaining the IDF's books and records, preparing and filing reports with respect to reporting requirements and performing other accounting and general administrative services.

2.41 The impact of credit enhancements and implementation of IDF operations for domestic capital market infrastructure financing can be expected in several important areas: (i) improved access of projects to capital markets; (ii) reduced transaction costs; (iii) introduction of innovative, tailor-made financial products, e.g., standardized securities and high-quality non-government bonds; (iv) enhanced market liquidity; (v) fostering of local credit rating mechanisms and agencies; (vi) initiation of limited-recourse credit assessments; and (vii) extension of maturities.

## **Mixed past experience with infrastructure funds**

2.42 International experience with infrastructure funds has been mixed – and care should be taken to ensure that relevant lessons learned from earlier experiences are incorporated. These facilities have often fallen short of their intended objectives mainly for two sets of reasons: (i) a lack of a conducive environment for private participation in infrastructure—poor sector policies, unstable political environment, a poor macro-

framework and inadequate financial sector policies—and (ii) faulty design of the facility itself—inconsistent objectives, instruments, and pricing of instruments, sectors targeted. It is critical that these issues be adequately addressed in order to ensure success of infrastructure development facilities<sup>7</sup>. The first issue has been discussed at length earlier in this report and alternatives for the latter have been presented. Infrastructure funds that have performed relatively well have generally tended to invest in broad range of infrastructure sectors, raise significant domestic resources for investment, and have some form of Government and/or multilateral support.

## **OTHER SOURCES OF CREDIT ENHANCEMENTS AND RISK MITIGATION**

2.43 As discussed above, Colombia now faces a situation where it needs to attract private investment into infrastructure when it is no longer has an investment grade credit rating in international markets. Given investors' reluctance to accept non-investment grade risks, the focus is therefore on trying to structure projects that are of Type D in Figure 5 above. While the options below lay out the general characteristics by which projects can be structured to achieve investment grade ratings, it is important to keep in mind that many of these options have not yet been extensively tried for infrastructure projects – they have largely been used for sovereign debt issues or for corporate debt issues. Domestic capital market financing represents the best possible option for infrastructure projects, but in many countries, including Colombia, this option remains underutilized. Two types of structures can be considered here. (i) Structures that breach the “sovereign ceiling”; and (ii) structures that maximize use of domestic capital markets so that financing is provided in the same currency in which the project earns its revenues.

### **Structures to breach the “sovereign ceiling”**

2.44 This option usually utilizes the products offered by multilateral agencies (of relevance to Colombia are the World Bank, IDB, IFC, and CAF). One option is the A loan/B loan structure, wherein the multilateral agency serves as the “lender of record” with the A loan being directly from the agency itself, while the B loan is syndicated to commercial lenders. The feasibility of this structure depends on the “preferred creditor” status of the multilateral. Commercial lenders perceive that creditors are unwilling to let projects with multilateral participation to go into default and thereby gain confidence that there is specific protection against convertibility and currency transfer risk in addition to more general protection against regulatory risks. The applicability of this structure depends on the willingness of multilateral lenders to consider lending to the project. In addition, this structure has largely been used thus far in the commercial bank market and not as much in the capital markets. A second option is to obtain “Partial credit guarantees” from multilaterals that guarantee payment of a certain portion of the principal and interest due. In the past, some of these transactions were executed on a “rolling

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<sup>7</sup> For further details on international experience with infrastructure funds, see Klingebiel and Ruster . “Why Infrastructure Facilities Often Fail to Achieve Their Objectives”. World Bank Working Paper.

basis” implying that there was a multilateral guarantee in place for the subsequent installment of principal and interest due if the previous installment had been serviced. Recent experience with this structure in some Latin American countries may make this product more difficult to obtain in future. A third option is to obtain “Political Risk Insurance” either from a bilateral such as Overseas Private Investment Corp. (OPIC) or a multilateral such as MIGA or a private insurer. These guarantees usually cover risks such as restrictions on transfer and convertibility of currency, expropriation of project assets, and damage to assets as a result of political violence. Investors’ perceptions on the value of these guarantee differ depending in the extent of the coverage and the source from the coverage has been obtained.

### **Structures to maximize domestic currency financing of infrastructure projects**

2.45 Given that the vast majority of infrastructure projects have revenues in domestic currency, it is logical that domestic currency funding is the most natural source of mobilizing finance for these projects. (A more detailed discussion of the Colombian situation in this regard is provided in the next section). The key to domestic currency financing is that it needs to be a long enough tenor to match the project’s needs. Such financing can usually be mobilized from pension funds and institutional investors in an environment where the macroeconomic conditions are stable and where the inflation and exchange rate regimes do not create an unduly large risk premium over international rates. The difficulty though is that such long maturity domestic financing is still relatively rare in many developing countries. One option here is for the Government (or a multilateral agency) to offer a refinancing facility to investors so that even though investors initially buy a long-dated instrument, they have the option (from a creditworthy third party) to convert it to a shorter maturity instrument if macroeconomic fundamentals or the credit risk of the project deteriorate. Such a structure is useful – especially in the initial periods – when domestic capital markets are still in their infancy as regards long-term infrastructure financing.

### **3. THE SUPPLY SIDE OF INFRASTRUCTURE FINANCE – MOBILIZING DOMESTIC AND INTERNATIONAL CAPITAL**

3.1 Domestic as well as international sources of capital can be tapped to finance infrastructure. In the past, many developing countries have raised private capital for infrastructure from international markets. Key issues to be addressed when structuring projects for financing by international investors have already been discussed in Section 2 above.

3.2 Over the years, problems have emerged from the experience of several developing countries whose infrastructure programs have depended heavily on foreign financing sources. Many infrastructure projects derive revenues denominated only or primarily in local currency. Where obligations to suppliers or providers of debt and equity are denominated in foreign currency, the project is exposed to convertibility, transfer and exchange rate risks. Since foreign investors are generally unwilling to bear these risks, risks are often shifted to the government or to consumers. For instance, project tariffs and debt are often indexed to and payable in foreign exchange by a purchasing state enterprise<sup>8</sup>. Moreover, negative movements in the exchange rate can lead to asset-liability mismatch leading to liquidity problems for project financing. Exposure to such conditions can force governments to bail out projects that are deemed too important to fail<sup>9</sup>. In addition, foreign ownership and financing of infrastructure may sometimes be politically unacceptable. Involving local investors through domestic financing for critical infrastructure can help reduce the political sensitivity of such projects.

3.3 If long-term domestic resources could be mobilized to fund infrastructure projects, multiple developmental objectives would be simultaneously served. First, on the demand side for funds, infrastructure projects could be funded in local currency, thereby reducing several sources of project risk. In private infrastructure projects, sponsors would need less risks to be covered and therefore would look to the Government for a lower level of public support, thereby reducing any contingent liabilities or other fiscal exposure that it may have to take on. Second, on the supply side of funds, long-term institutional investors (such as pension funds and insurance firms) would find a broader

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<sup>8</sup> This was the case, for example, in the PPA between National Power Corporation of the Philippines and the Subic Bay Corporation, which left the government with substantial exposure to exchange rate risk over the project's life.

<sup>9</sup> For example, the toll roads in Mexico subsequent to the 1994 crisis.

range of financial instruments to invest in (with, potentially attractive risk-reward characteristics). Consequently, they would be able to improve the diversification of their investment portfolio. Lastly, in order to ensure that the supply of such funds to finance demands from infrastructure is available on an on-going basis and in a sustainable manner, institutional frameworks and capacity – both in infrastructure sectors and in capital markets – would need to improve, which would strengthen these sectors. Overall, therefore, attracting long term domestic resources into infrastructure is clearly a highly desirable objective.

3.4 What are the usual sources of domestic finance for infrastructure investments? The banking system and the capital markets (the latter including institutional investors) are the two major sources of domestic financing. Financing through bank loans is an option, but banks often face difficulties in financing infrastructure in a big way. It may be difficult for most commercial banks to provide very long term loans, as for prudential reasons they are advised to maintain a match between the duration of their assets and liabilities. Commercial bank deposits in most countries are usually of not of sufficiently long maturities to provide such financing. The large volume of loans required for such investments makes them highly risky, and commercial banks are often unwilling to lend in such situations without guarantees from some state entity. Finally, commercial banks are usually not able to finely price risk, through interest rate variations across different types of risks.

3.5 Capital markets represent a major potential source of financing. Capital market instruments help to allocate resources to their most profitable uses, and provide a mechanism for the pricing of risk in situations where this may be important and potentially difficult. Many advanced countries have made use of capital markets for the financing of their infrastructure requirements, through both bond and equity issues. In recent years, a growing number of developing countries have also developed the securities markets and long-term savings institutions which have allowed them to tap domestic markets for infrastructure finance. The largest sources of long-term domestic capital are usually pension funds and insurance companies- which have a natural hedge in that they have long-term liabilities and so would be looking for long-term assets in which to invest.

3.6 This section discusses the financial sector in Colombia, the role that it has played in financing Colombia's infrastructure, options for the future, and issues that need to be addressed in the financial sector in order to make them a sustainable source of long-term domestic capital that could be helpful in financing infrastructure.

## **AN OVERVIEW OF COLOMBIA'S FINANCIAL SECTOR**

3.7 Total assets in the Colombian financial system are about US\$ 65 billion – or about 80 per cent of GDP (Table 7). Commercial banks account for just under half the system with assets of \$30 billion. Trust companies – which are subject to the same legislation as banks – are another major player in the Colombian financial system controlling assets of about 22 per cent of GDP. Trust companies essentially invest funds as trustees for third parties, manage mutual and pension funds, and undertake certain fee-based businesses. Pension funds are the third largest group of financial institutions with assets of over \$8.3 billion at the end of 2002.

**Table 7**  
**Columbia – Structure of the Financial Sector**  
 (Assets as of December 31, 2002 in US\$ millions)

	Banks and Deposit Institutions	Corporate Financing Co's	Ordinary Finance Companies	Finance Leasing Companies	Pension Funds	Insurance Industry	Trust Co's	Total
Local	18,989	2,669	427	846	4,675	1,687	8,933	38,225
Foreign	5,684	--	241	32	3,659	1,214	4,298	15,128
State	5,977	690	194	42	--	382	4,177	11,461
Total	30,650	3,359	862	920	8,333	3,282	17,408	64,815
As % of GDP	39%	4%	1%	1%	10%	4%	22%	82%

Source : Superintendency of Banks

Note : Total asset figures may be overestimated as financial institutions may hold as assets reflecting the liabilities of other institutions.

3.8 Historically, the banking sector has been the major source of domestic financing for infrastructure. (Table 8). Since 1999, banks' exposure to infrastructure has fallen in line with reduction in private activity in the sector. Banks has a portfolio of loans of infrastructure of about US\$1.25 billion in 1999 and about US\$950 million in 2003 – a level between 7 – 10 per cent of their total loan portfolios. Electricity, transport, and telecommunications sector received the most loans from the banks. Much of this funding has been on a corporate finance basis to the infrastructure firms concerned, but little has been in terms of project finance for greenfield projects.

**Table 8**  
**Commercial bank lending to infrastructure**  
**(US\$ million, total loans outstanding as of March each year)**

<b>Subsector</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>
Suministro de Electricidad, Gas, Vapor y Agua Caliente	252	326	452	223	429
Captación, Depuración y Distribución de Agua	21	23	21	24	25
Transporte por vía Terrestre, Transporte por Tuberías	168	139	134	170	157
Transporte por vía Acuática	17	6	0	4	4
Transporte por vía Aérea	52	43	24	26	28
Actividades complementarias y auxiliares al Transporte y de Agencias de Viaje	74	64	60	67	61
Correo y Telecomunicaciones	661	630	506	338	242
Total Infraestructura	1,245	1,231	1,198	852	946
Total general privado	11,468	9,453	8,903	8,228	8,222
Total lending	16,793	13,602	12,535	11,930	n.a.
Infraestructure/total lending	7%	9%	10%	7%	

Source: Banco de la Republica.

### PENSION FUNDS IN COLOMBIA

3.9 Colombia introduced a defined contribution pension system and permitted private pension fund managers to manage assets in 1994. Since then, the system has been rapidly growing – despite some basic issues in the design of the overall system for old age pensions in Colombia. From a base of assets under \$500 million in 1994, pension funds now control nearly \$9 billion of assets – compounded growth rate of 38 per cent annually (Table 9). This rapid growth in pension funds in Colombia provides an opportunity to explore whether these funds can be usefully deployed in infrastructure projects. Pension funds are a natural source of long-term finance and would have an interest in investing in long-term assets such as bonds issued by infrastructure projects.

**Table 9**  
**Growth of pension system assets in Colombia**

	US\$ million	Yoy growth rate
Dec-94	494	
Dec-95	871	76%
Dec-96	1520	74%
Dec-97	2497	64%
Dec-98	3475	39%
Dec-99	4445	28%
Dec-00	5366	21%
Dec-01	6666	24%
Dec-02	8222	23%
Dec-03	8964	9%

Compound annual growth rate: 38%

Source: Superbancaria

3.10 Present annual inflows into mandatory pension funds are estimated at about US\$ 900 million per year (US\$ 75 million per month). Looking ahead, pension funds in Colombia are likely to continue to grow rapidly for the medium term for several reasons. First, total number affiliates in the private pension system about 5.1 million and about 5.6 million are still in publicly managed defined benefit system (as of November 2003). As people continue to move from the public system to the private system, the year-on-year growth rates of the total number of affiliates in the private system has averaged about 10 per cent per year over the last 3-4 years. There is no reason to believe that this movement will slow down in the medium term and this implies that the base of contributors to the private pension fund system will continue to grow by about 10 per cent year as new people join the system. In addition to new people joining the system, Colombia also has a high rate of “inactivos” in its private system – people who join the system but do not contribute on a regular basis. Out of the 5.1 million participants, only 2.5 million - less than half – were “active” in the month. While there are several reasons why workers may be inactive - structural causes and workers dropping out of the formal workforce may be part of the picture – there is an incentive for the private pension funds to try to attract the inactive workers back into the system, since such workers accounts’ are expensive for pension funds to maintain. This implies that further growth in contributors is possible from this source as well. In addition, Colombia’s is still a relatively young pension system. More than three-fourths of the participants in the system are less than 40 years of age and nearly 60 per cent are less than 35 years of age. Only about 13,000 people were receiving pension from the system as of November 2003 – as compared to total affiliates of five million. Therefore, pension payouts are not likely to increase dramatically in the medium term. As economic growth resumes, it is reasonable to expect that growth in pension contributions will pick up further as wages grow and the value of pensions savings rises as asset values rise. For all these reasons, it is reasonable to expect that pension system will continue to grow for the medium term. Even if the high rates of the past are not maintained, more recent growth rates of around 10 per cent should continue for the medium term.

Colombian pension funds have also been constrained by a lack of a wide array of investment options (Table 10). Over 90 per cent of pension fund assets are invested in fixed income instruments, with nearly half in government bonds – the maximum permitted by the regulator. Pension fund holdings of securities issued by banks and non bank financial institutions (NBFIs) are largely in the form of bank deposits and bonds issued by these entities; these resources are in turn often invested in government securities by banks and NBFIs. There is therefore a clear need to the pension fund sector of alternative instruments in which they can invest.

Table 10  
Asset allocation of Colombian Pension Funds  
(November 2003)

	%
Government bonds	48
Banks	17
Non-banks	16
Foreign inv.	5
Other fixed income	5
Equities and mutual funds	8
Derivatives	1

Source: Superbancaria

3.11 The maturity profile of the fixed income holdings of the pension funds is shown in Table 11. Although half the portfolio is in assets with maturities of less than five years, Colombia's relatively well developed bond markets provide the possibility for the balance of pension fund assets to be invested in medium term securities – up to ten years in maturity. There is clearly, however, the possibility that if longer maturity assets of a quality acceptable to pension funds were available, the funds would be interested in buying them – as their liabilities are of much longer duration.

Table 11  
Maturity profile of fixed income holdings of Colombian pension funds  
(Nov. 2003)

Days to Maturity	Investment Portfolio	Trading Portfolio	Total	Cumulative
0 – 180	0%	4%	4%	4%
181 – 360	0%	3%	3%	7%
361 – 720	1%	8%	9%	16%
721 – 1080	1%	11%	12%	28%
1081 - 1440	1%	4%	5%	33%
1441 - 1800	6%	6%	11%	44%
1801 - 2160	2%	7%	9%	54%

2161 - 2880	6%	10%	16%	70%
2881 - 3600	6%	17%	22%	92%
> 3600	3%	5%	8%	100%

Source: Superbancaria

3.12 While pension funds have resources that would in principle, interest them in infrastructure investments, some key constraints prevent them from doing so at present. First, there simply has not been a supply of infrastructure bonds that would be of interest to the pension funds. Interest in attracting pension funds to invest in infrastructure is a relatively new phenomenon in Colombia. The major growth in pension fund assets in Colombia has occurred since 1997 – a period in which private investments in infrastructure have fallen. In addition, in line with many countries in the region – notably Chile – pension funds began their activities by investing largely (or even entirely) in government bonds. The rationale for such investment was the perceived safety of these instruments and the importance of exposing the new pension systems to as little risk as possible. Establishing the new institutions was a higher priority than maximizing returns to investors. However, once pension funds became large enough, they needed to go beyond purely investing in government securities. Colombian pension funds are therefore only now beginning to explore alternate investment possibilities. Therefore, simply providing a supply of investment options – that would meet the requirements of Colombian pension funds - would begin the process of attracting pension funds into this segment of the market.

3.13 Second, Colombian pension fund regulation currently requires that the funds invest only in bonds that are rated A- (A minus) or higher by a recognized rating agency. Many infrastructure bonds would be unable to satisfy this rating criteria unless either the government (or multilateral agencies) provides project guarantees or other forms of credit enhancements (or financial structuring is used to create instruments of different seniority so that some portion of the overall financing can obtain a high enough rating). Securitizing existing infrastructure assets or structuring an infrastructure fund that could issue securities of different seniority with the most senior going to pension funds are options whereby the risk can be controlled at the pension funds while still attracting pension fund resources into infrastructure. Relaxing this constraint is an option – but one that the Government should be extremely cautious in using. Opening up mandatory pension funds to lower quality investments exposes them to potential risks that the Government needs to recognize and be in a position to face. The fund management industry also needs to have a high level of expertise in management of low-credit quality assets – a skill that is not yet well developed in Colombia. Prudent management by pension funds has to be ensured within an overall sound regulatory framework with effective enforcement. Moving away from strict instrument-based regulation towards more freedom for investment decisions by pension fund managers calls for more effective regulatory oversight.

3.14 Third, another regulatory requirement in Colombia is that pension funds provide minimum returns to investors within a band around the average return of industry and the

asymmetric structure of costs and benefits to pension fund managers of not meeting this criteria militates against pension fund investments in infrastructure bonds. Current regulation states that if the return provided by a particular pension fund is less than the minimum as required by the band around the average rate of return of the industry, then difference would have to be made up the pension fund manager from its capital. However, if the rate of return is above the maximum of the band, all the excess return accrues to investors and none to the fund manager. This asymmetric structure creates disincentives to fund managers to actively explore alternate investment instruments. In addition, it creates strong incentives to “follow the leader” or “herd” around the asset allocation of the large players in the industry – since the average industry return is determined by the returns of the largest players. This regulation is not unique to Colombia and similar regulations exist in many countries in the region. However, policies to relax this constraint are necessary if pension funds are to be innovative in their investments.

3.15 Alternative models for relaxing the above two regulatory constraints exist. One option – that has been tried in Chile - is to permit pension funds to offer different “funds” to different investors and let the investors decide which funds they would like to invest in based on their risk profile. In this manner, only those would like to take on greater risks (and correspondingly the opportunity to have a higher return) would choose to invest in funds that may invest in infrastructure bonds – which carry a higher risk profile. Another option, within the existing regulatory structure – is to permit pension fund investments in a limited amount of infrastructure securities – subject to rating criteria – which may be different from that at present. The key observation here is that while mobilizing resources from pension funds for infrastructure is an important policy objective, this needs to be tied in with policies ensuring that the pension fund industry is not subjected to undue risks as a result. Diversification is an important beneficial strategy, but excessive risk with mandatory pension contribution can saddle the government with liabilities in future.

3.16 In addition to regulatory constraints, there are institutional issues that also need to be addressed as pension funds consider investing in infrastructure. Strong credit rating agencies with the capacity of rating infrastructure bonds and providing credible ratings assessments are an important element of the overall capital market infrastructure. Pension funds have expressed their view that this capacity is currently weak in Colombia. Another issue is the structure of the investment units within many of the pension funds at present. The largest pension funds in Colombia are all owned by commercial banks and both the pension funds and the banks share risk assessment and investment technologies and staff – with pension funds being relatively thinly staffed in this area. Pension funds and commercial banks need to analyze different characteristics of risk and commercial bank credit assessment skills are not always sufficient for pension fund investment decision making. Thus far pension funds have not required to substantially invest in these skills as most investments have been in government bonds or highly rated securities. Once pension funds start examining a wider array of investment options, it would be useful if they could develop investment skills in house. This would also permit a minimization of the possible conflicts that are likely when a commercial bank does most of the risk

analysis for its own pension fund. One option to get this started in the short run is to mandate this requirement. This will obviously have cost implications on the industry and these need to be examined. Another issue that will need to be undertaken in concert with trying to get pension funds to invest in infrastructure investments is to educate the investors – pension fund contributors – on the risks and returns of infrastructure investments as well more broadly about the risks and rewards of a more diversified pension fund investment regime.

3.17 How much resources can reasonably be raised from pension funds into infrastructure in Colombia? Assuming that securities in which the pension funds would be interested in and able to invest are available in sufficient quantity, a simplistic way to respond would be to establish a maximum limit on the investment by pension funds in this sector. At present for example, a limit of a maximum of 30 per cent has been established for investment in equities and a limit of 20 per cent on securitized bonds. Infrastructure investments by pension funds could be included under either of these categories (in keeping with their risk profile) and a smaller limit – of say 10-15 per cent – could be established initially. Clearly, it will take time for the pension funds to get acquainted with infrastructure securities and as they gain experience, the regulator could consider increasing the limit. At the current level of assets of about \$9 billion, such a structure would imply that about US\$ 900 - \$1.3 billion million would be available for infrastructure investments as a stock and about US\$ 100 million per year thereafter, growing at 10 per cent year (assuming pension funds grow at about 10 per cent per year).

3.18 While this seems relatively small compared to the Government's projected PPI needs of about US\$ 6.5 billion, it is important to keep in mind that these resources are of the same magnitude as the entire infrastructure loan portfolio of the commercial banks. In essence therefore, even at this relatively conservative level, domestic resources available for infrastructure are being doubled. In addition, if these investments turn out to be successful, a larger market for infrastructure securities is likely to be generated as the trust fund and mutual fund industry (which represents 25 per cent of the financial system) steps in to invest in such securities.

#### **INTERNATIONAL EXPERIENCE WITH ATTRACTING DOMESTIC INVESTORS INTO INFRASTRUCTURE**

3.19 A number of countries have been able to successfully tap domestic capital markets to finance infrastructure projects. While several mature market economies have a fairly long history of domestic infrastructure finance, an increasing number of developing countries as well are developing the institutions and the instruments needed to take advantage of local capital market financing for infrastructure.

## **Developed countries**

3.20 Domestic capital markets have been used as a source of financing by several developed countries – such as Canada, France, the U.K., and the U.S. - for a considerable period to finance infrastructure development. As infrastructure has been privatized in many of these countries, private parties have naturally turned more toward capital markets for financing. But what is even more interesting is that even when the public sector was largely responsible for construction of infrastructure, private capital markets were used to finance projects, largely on a corporate finance basis. For example, Canada financed much of its hydro-electric project development through domestic bond issues. Other countries undertaking domestic bond financing for infrastructure projects include the United Kingdom, France, and the United States. Bonds issued in these countries are typically of long maturity – 20-40 years – in line with the long gestational and operational life of many infrastructure projects. Explicit guarantees provided on bond issues, by the local or central government, could either take the form of General Obligation guarantees, or Revenue guarantees. In the former case, repayment and debt servicing is guaranteed by the full tax raising and revenue earning powers of the government concerned. In the second case, repayment is explicitly tied to a given revenue stream, usually, but not always, related to the project or entity concerned.

## **Developing countries**

3.21 Developing countries are also attempting to meet the growing need for expanded infrastructure services by turning to the private sector to finance and operate new investments in these sectors. A number of these countries have been able to tap domestic markets to help fund these projects. While many East Asian countries accessed domestic markets in the mid-1990s to finance infrastructure projects, the financial crisis of 1997/98 put a hold on such activity. It is only slowly beginning to revive. In some other countries – for eg. Chile – there has been continued growth in infrastructure financed by domestic capital markets. The experience of two countries – Chile and Malaysia – is especially relevant for Colombia.

### ***Chile***

3.22 Chile has actively encouraged private participation in its infrastructure sectors and has focused on mobilizing domestic resources to finance its infrastructure requirements. The objectives of the Chilean Government in trying to attract private investment into its infrastructure sector were aimed at attempting to increase the service levels and efficiencies in infrastructure service delivery through involving the private sector and to release public resources from infrastructure investments into social programs. In thinking through the sources of financing for its infrastructure, Chile

attempted to find financing that would address the following issues: (i) long maturity; (ii) customized amortization schedules depending on project revenues; (iii) local currency to avoid exposure to foreign exchange risks; and (iv) fixed interest rate to reduce impact of interest rate volatility. It zeroed in on raising financing from its private pension funds and life insurance companies – both institutional investors with long term liabilities who were naturally looking for long-term assets as well as from domestic capital markets.

3.23 Chile privatized its pension system in 1981 and the its pension funds – known as the Administradoras de Fondos de Pensiones (AFP), now control over \$35 billion in assets. Chilean life insurance companies control about US\$ 12 billion in assets. Pension funds have invested in infrastructure assets through investments in equities, bonds, and “fondos de inversion” (mutual funds), which have been active participants in infrastructure projects<sup>10</sup>. “Bonos sin historia” (bonds without history) were the principal financial instrument for allowing pension funds (AFPs) to invest in *greenfield* infrastructure projects<sup>11</sup>. AFPs could invest up to 3% of their asset value in such bonds for a particular project and up to 20% of a particular bond issue, whichever is less. Chile also mobilized resources from domestic capital markets directly through its infrastructure divestiture program of 1985-90, which included enterprises in telecommunications (CTC and ENTEL), electricity (Chilectra and Endesa), and water and sewage services.

3.24 Local currency bond financing on a project finance basis has also been popular. Focusing on toll-roads, in 1998, Chile raised \$200 million equivalent in local currency with 10-year maturity for the Talca-Chillan section of Ruta 5 (the main-North-South highway in Chile). During 2000-2002, several other toll road concessions also raised domestic resources eg: the Collipuli-Temuco and Chillan-Collipuli sections of Ruta 5 and Rutas del Pacifico (which links the capital Santiago to the country’s main port – Valparaiso). The maturity of bonds has gradually gone up to 20 years.

3.25 Many of these projects were structured so that domestic institutional investors could invest in their securities. Chile’s experience demonstrates that governments face two options when attempting to develop an infrastructure project finance bond market domestically. They either have to relax regulations on ratings of securities that can be purchased by institutional investors or structure infrastructure projects in such a way that they support securities with a high rating. Chile has taken the option of structuring strong infrastructure projects that allow domestic capital to be mobilized from capital markets. This has meant that the Government has had to provide appropriate levels of support (credit enhancement) to private infrastructure projects to ensure a good rating for their securities, which in turn could be bought by domestic institutional investors. Chile’s pension funds, therefore, continue to have stringent requirements as far as the ratings of the securities in which they can invest is concerned.

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<sup>10</sup> Examples of investments include Camino de la Madera toll road and Infrastructure 2000 – an infrastructure development consortium.

<sup>11</sup> Examples of investments include El Melon tunnel, the Camino de la Madera, Transportes Pacific, Santiago-San Antonio toll road and the Iquique Airport

## *Malaysia*

3.26 Malaysia has also actively encouraged the participation its state-run provident fund – the Employees Provident Fund (EPF) – in its infrastructure development. As of December 2002, EPF controlled total assets of RM 208 billion. Malaysia’s local market investors, and in particular EPF, have been very active in infrastructure projects, especially since the early 1980s the government decided to allow private participation in infrastructure, and launched a divestiture program to reduce budgetary and management obligations and promote competition.

3.27 The US\$8.0 billion Kuala Lumpur International Airport, sold \$2.2 billion in Islamic bonds. Bonds for this project, and for the Shah Alam expressway (US\$510 million) were placed mainly with local institutional investors. The YTL power project was the first IPP contract awarded in Malaysia<sup>12</sup>. The YTL project was financed in its entirety in the local markets. The company borrowed RM 3.1 billion (US\$967 million) in two tranches: (i) A RM 1.5 billion fixed rate 10% 10-year bond subscribed by EPF (which purchased the bond issue in its entirety). The bonds were rated AA3 by the Rating Agency of Malaysia, based on the project’s contractual arrangements and feasibility. (ii) RM 1.6 billion floating rate term loan underwritten by Bank Bumiputra and United Malaysian Banking Corp. Project equity, which was financed 100% by YTL during the construction period, was then partially sold off to a number of local investors, including Tenaga. Other major projects that raised significant resources from local sources include the include the Lumut Power project and the North-South Expressway. EPF has also invested in the Sikap Power project, Kuala Lumpur City Centre Twin Tower, and the Light Rail Transit. In 2000, Malaysia raised almost \$2.6 billion in domestic bonds for project finance. Similar amounts are estimated to have been raised annually since.

3.28 The essential features of many of these projects were that the Government continued to play a large role in the project despite private participation and mobilizing private financing. These efforts were not without criticisms. For eg: the drawback of the YTL transaction was that EPF purchased all of the bonds and declined to trade them, thereby preventing the deal from setting a much needed benchmark for Malaysian corporate debt and fostering development of a secondary market. In an attempt to attract new capital the government provided generous incentives for new floatations. It lowered investment risk by remaining an important shareholder in all privatized enterprises. Furthermore it only floated companies with bright future prospects. In addition, it insisted on introducing new shares at an extremely low price. As a consequence, all floatations were several times oversubscribed, although this implied a cost to the government. For

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<sup>12</sup> The combined capacity of the two plants, Pasir Gudang and Paka, is approximately 1,350 MWs. This build-own-operate project features a 21-year take or pay arrangement with Tenaga Nasional, the national power utility, a binding fuel supply agreement with the state-run energy company, Petronas, and a construction and operations and maintenance agreement with Siemens of Germany.

greenfield efforts, the government has provided significant supplementary support, exposing itself to commercial risk. In the North-South Highway project, for instance, in addition to transferring at no cost that portion of the project already in operation, the state was a direct equity and debt participant and provided standby contingent support for shortfalls in revenue should traffic fall below expected levels. Also, the award process was criticized as lacking transparency and that the firm awarded the concession was largely owned by officials of the Malaysian government. Additionally, the firm did not have a proven track record in operating an expressway, nor did it have a particularly strong financial standing. Others question the efficacy of the expressway and felt that the project is a poor utilization of financial resources.

3.29 The Government also worked on creating the enabling environment for financial institutions to undertake investments in infrastructure. It created a liquidity facility – Cagamas Berhad – in 1986 that allowed financial institutions to dispose of their housing loan portfolios and raise liquidity, a part of which, in turn was invested in infrastructure. It initiated a process of issuing long-dated government debt securities through regular auctions, thereby enabling the creation of benchmarks for pricing. The Rating Agency of Malaysia (RAM) was also established and regulations on issuance of securitized debt offerings required obtaining acceptable ratings.

3.30 While the government, and in particular, the Central Bank, assumed a very proactive role in the development of the Malaysian bond market, local market growth has also been greatly fostered by the strong economic growth which necessitated a tight monetary policy. Consequent higher interest rates result in an urgency to seek investment funds from non-traditional banking sources, which are not only cheaper but offer investors greater flexibility in managing their cashflow, and hence stimulates the development of securities issues.

**Table 1**  
**Private Participation in Infrastructure in Colombia**  
**List of projects with private participation - since inception to 2002**  
**Source: World Bank PPI Database**

<b>Financial Closure</b>						<b>Investment</b>	<b>Total *</b>
<b>Year</b>	<b>Project Name</b>	<b>Sector</b>	<b>Segment</b>	<b>Type of PPI</b>	<b>Subtype of PPI</b>	<b>Years</b>	<b>(US\$ millions)</b>
	1996 Betania Hydro-Electric	Energy	Electricity generation	Divestiture	Full	1996-1996	302
	1996 Chivor SA	Energy	Electricity generation	Divestiture	Full	1996-1996	644
	1997 Comercializadora y Distribuidora de Energia SA	Energy	Electricity distribution	Divestiture	Partial	1997-1997	1226
	1998 Corelca Distribution	Energy	Electricity distribution	Divestiture	Partial	1998-2000	558
	1997 Empresa de Energia del Pacifico SA	Energy	Electricity distribution and generation	Divestiture	Partial	1997-2000	575
	1997 Empresa Generadora de Energia	Energy	Electricity generation	Divestiture	Partial	1997-1997	951
	2000 Interconexion Electrica S.A. (ISA)	Energy	Electricity transmission	Divestiture	Partial	2000-2000	46
	2000 Interconexion Electrica S.A. (ISA)	Energy	Long distance	Divestiture	Partial	2000-2000	46
	1993 Mamonal Gas-Fired Power Plant	Energy	Electricity generation	Greenfield project	Merchant	1993-1993	130
	1996 Merilectrica	Energy	Electricity generation	Greenfield project	Merchant	1996-1996	71
	Sociedad Productora de Energia de San Andres y						
	1996 Providencia (SOPESA) SA	Energy	Electricity generation	Greenfield project	Build, own, and transfer	1996-1996	..
	1997 Termo Santander Opon	Energy	Electricity generation	Greenfield project	Merchant	1997-1997	200
	1995 Termobarranquilla SA	Energy	Electricity generation	Greenfield project	Build, own, and operate	1995-1995	756
	1999 TermoCandelaria	Energy	Electricity generation	Greenfield project	Merchant	1999-1999	175
	1996 Termocartagena	Energy	Electricity generation	Divestiture	Full	1996-1996	27
	1996 Termodorada Power Plant	Energy	Electricity generation	Greenfield project	Build, own, and transfer	1996-1996	42
	1997 TermoEmcali Power Plant	Energy	Electricity generation	Greenfield project	Build, own, and transfer	1997-1997	230
	1993 Termoflores	Energy	Electricity generation	Greenfield project	Build, own, and operate	1993-1996	258
	1995 Termopaipa IV Power Plant	Energy	Electricity generation	Greenfield project	Build, own, and operate	1995-1995	200
	1996 Termotasajero	Energy	Electricity generation	Divestiture	Partial	1996-1996	19
	1996 Termovalle Power Plant	Energy	Electricity generation	Greenfield project	Build, own, and operate	1996-1996	147
	<b>Total</b>						<b>6603</b>
<b>Natural Gas</b>							
	1994 Centragas	Energy	Natural gas transmission	Greenfield project	Build, own, and transfer	1994-1994	210

1998 Cundinamarca Boyaca Gas Natural	Energy	Natural gas distribution	Divestiture	Full	1998-1998	11
1997 Gas Natural del Centro	Energy	Natural gas distribution	Greenfield project	Build, own, and operate	1997-1997	9
1997 Gas Natural ESP	Energy	Natural gas distribution	Divestiture	Partial	1997-2000	186
1999 Gases de Boyaca y Santander	Energy	Natural gas transmission	Greenfield project	Build, own, and transfer	1999-1999	55
1997 Gases de Risaralda	Energy	Natural gas distribution	Greenfield project	Build, own, and operate	1997-1997	9
1997 Gases del Norte del Valle	Energy	Natural gas distribution	Greenfield project	Build, own, and operate	1997-1997	8
1997 Gases del Quindio	Energy	Natural gas distribution	Greenfield project	Build, own, and operate	1997-1997	5
1996 Promigas	Energy	Natural gas transmission	Divestiture	Full	1996-1996	158
1995 TransGas de Occidente SA	Energy	Natural gas transmission	Greenfield project	Build, own, and transfer	1995-1995	317
1997 Transmetano SA	Energy	Natural gas transmission	Greenfield project	Build, own, and transfer	1997-1997	50

**Total**

**1018**

**Telecom**

1994 Celcaribe	Telecom	Mobile access	Greenfield project	Build, own, and operate	1994-2002	245
1994 Celumovil SA	Telecom	Mobile access	Greenfield project	Build, own, and operate	1994-2002	1318
1994 Comcel de Colombia	Telecom	Mobile access	Greenfield project	Build, own, and operate	1994-2002	756
1994 Ocel	Telecom	Mobile access	Greenfield project	Build, own, and operate	1994-2002	308
1998 Orbitel	Telecom	Long distance	Greenfield project	Build, own, and operate	1998-2002	312
1997 Transtel	Telecom	Fixed access	Greenfield project	Merchant	1997-2002	164

**Total**

**3102**

**Toll Roads**

1997 Autopistas del Café	Transport	Highway	Concession	Build, rehabilitate, operate, and transfer	1997-1997	156
1993 Barranquilla - Cienaga Toll Road	Transport	Highway	Concession	Rehabilitate, operate, and transfer	1993-1993	34
1994 Bogota - Villavicencio Toll Road	Transport	Highway	Concession	Rehabilitate, operate, and transfer	1994-1994	105
1994 Buga-Tulua-La Paila Toll Road	Transport	Highway	Concession	Rehabilitate, operate, and transfer	1994-1994	80
1996 Cali - Candelaria - Florida Toll Road	Transport	Highway	Concession	Build, rehabilitate, operate, and transfer	1996-1996	40
1994 Cartagena - Barranquilla Toll Road	Transport	Highway	Greenfield project	Build, own, and transfer	1994-1994	32
1999 Desarrollo Vial del Valle del Cauca y Cauca	Transport	Highway	Concession	Build, rehabilitate, operate, and transfer	1999-1999	318
1994 El Cortijo - La Punta - El Vino Toll Road	Transport	Highway	Concession	Build, rehabilitate, operate, and transfer	1994-1994	41
1995 Girardot - Espinal - Neiva Toll Road	Transport	Highway	Concession	Build, rehabilitate, operate, and transfer	1995-1995	51
Los Patios - Guasca - El Salitre - Briceno Toll Road	Transport	Highway	Concession	Rehabilitate, operate, and transfer	1994-1994	15

1994 Malla Vial del Meta	Transport	Highway	Concession	Rehabilitate, operate, and transfer	1994-1994	63
1996 Medellin - Valle de Rio Negro Toll Road	Transport	Highway	Concession	Build, rehabilitate, operate, and transfer	1996-1996	126
1994 Northern Region of Bogota Toll Road	Transport	Highway	Concession	Build, rehabilitate, operate, and transfer	1994-1994	112
1994 Santa Marta - Riohacha - Paraguachon Toll Road	Transport	Highway	Concession	Rehabilitate, operate, and transfer	1994-1994	64
2000 Tunnel Aburra - Rio Cauca	Transport	Highway and tunnel	Greenfield project	Build, own, and transfer	2000-2000	120
<b>Total</b>						<b>592</b>
<b>Railway</b>						
2000 Red Ferrea del Atlantico	Transport	Fixed assets and freight	Concession	Rehabilitate, operate, and transfer	2000-2000	300
2000 Red Ferrea del Pacifico	Transport	Fixed assets and freight	Concession	Rehabilitate, operate, and transfer	2000-2000	200
<b>Total</b>						<b>500</b>
<b>Sea Ports</b>						
1993 Barranquilla Port	Transport	Terminal	Concession	Rehabilitate, operate, and transfer	1993-1993	..
1993 Buenaventura Port	Transport	Terminal	Concession	Rehabilitate, operate, and transfer	1993-1993	186
1993 Cartagena Port	Transport	Terminal	Concession	Rehabilitate, operate, and transfer	1993-1993	40
1993 Santa Marta Port	Transport	Terminal	Concession	Rehabilitate, operate, and transfer	1993-1998	128
1992 Terminal Maritimo Muelles El Bosque	Transport	Terminal	Greenfield project	Build, own, and operate	1992-1992	40
<b>Total</b>						<b>394</b>
<b>Airports</b>						
2000 Cali Alfonso Bonilla Airport	Transport	Runway and terminal	Concession	Build, rehabilitate, operate, and transfer	2000-2000	178
1995 Eldorado International Airport - New Runway	Transport	Runway	Greenfield project	Build, own, and transfer	1995-1995	145
1997 Ernesto Cortisoz International Airport	Transport	Runway and terminal	Management and lease contract	Lease contract	1997-1997	9
1996 Rafael Nunez International Airport	Transport	Runway and terminal	Management and lease contract	Lease contract	1996-1996	23
<b>Total</b>						<b>354</b>
<b>Water</b>						
1995 Aguas de Cartagena S.A.	Water and sewerage	Water treatment and distribution	Management and lease contract	Management contract	1995-1995	0
2002 Sincelejo Water	Water and sewerage	Water distribution	Concession	Build, rehabilitate, operate, and transfer	2002-2002	58
1998 Tibitoc Water Treatment Plant	Water and sewerage	Water treatment and distribution	Greenfield project	Build, own, and transfer	1998-1998	65

								<b>123</b>
	Total							
<b>Sewerage</b>								
	1997 Rio Bogota Wastewater Treatment Project	Water and sewerage	Sewerage treatment	Greenfield project	Build, own, and transfer	1997-1997		125
	<b>Total</b>							<b>125</b>
	<b>Total PPI</b>							<b>12812</b>

**Table 2**  
**Colombia: Private investment in infrastructure (US\$ million)**  
**(1995-2002)**

	1995	1996	1997	1998	1999	2000	2001	2002
Transport	289	365	433	355	209	53	118	63
Electricity and Gas	1090	1774	1627	402	294	599	469	102
Telecom.	934	750	1124	1414	610	623	659	53
Water and sanitation	5	4	11	75	91	108	29	0
<b>TOTAL</b>	2317	2893	3194	2246	1204	1384	1275	218

Source: Departamento Nacional de Planeacion

Table 4  
Proposed infrastructure projects (for private participation) in Colombia

			US\$	Peso million
Bucaramanga – ye de Cienega	Transport	Toll road	125	
Bogota-Buenaventura	Transport	Toll road	205	
Tunnel			230	
Pereira - la victoria	Transport	Toll road	25	
<b>Total</b>			<b>585</b>	
Urban mass tansit - Pereira-Dosquebradas-La virginia	Mass transit		22	
Urban mass transit – Cali	Mass transit		495	
Urban mass transit - Baranquilla	Mass transit		40	
Urban mass transit – Cartagena	Mass transit		55	
Urban mass transit - Bucaramanga	Mass transit		60	
<b>Total</b>			<b>672</b>	
Bogota El Dorado airport concession	airport		800	
Local telecom – TBPC	Telecom			7000
Community AM/FM radio for indigineous communities	Telecom			1800
Rural local telecom	Telecom			17000
Residential telecom in selected areas	Telecom			35000
Broad band communication net works	Telecom			141000

Source: Gerencia de Participación Privada en Infraestructura, Perfiles, March, 2004		
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