

# Financing Public Investment through Concessions and Future Budgetary Obligations (FBO): The case of Colombia 2002-2018 \*

By: Sergio Clavijo, Nelson Vera, and Ekaterina Cuellar

Draft Version of January 2019

## (Summary)

This document assesses the financial risks involved in funding public transportation through concessions in Colombia over the period 2002-2018. During this period, the Uribe and Santos Administrations launched an ambitious program of concessions, requiring investments amounting to US\$20 billion (called the “Fourth-Generation”, 4G), representing about 7% of GDP of 2018, to be executed over a decade.

Nearly 70% of those resources were raised through banks (locals provided nearly 50% of the total); capital markets funded another 20% (locals providing 10% of the total); and multilaterals and government supported the remaining 10%. Given the high exposure of local banks to long-term projects (5-7 years), under the more stringent Basel-III rules, several issues of “systemic risk” have been raised.

In order to limit such risks, the central government of Colombia had to provide a “financial-cushion” through issuing Future Budgetary Obligations (FBO). It has been estimated that such FBOs currently amount to 12% of GDP in Net Present Value, representing a “contingent” liability that might have to be added to the “explicit” gross debt of nearly 52% of GDP at the level of the general government.

Hence, we here discuss the financial pros/cons of this strategy of public infrastructure financed under private concessions supported by FBOs. In particular, we assess: i) the cash and stock effects over public debt after issuing such FBOs; ii) the different types of public guarantees under those FBOs and their “contingent” impact (including risks associated to construction failures, lower than expected traffic flows, and foreign debt exposure supported by tolls in local currency); and iii) the manner in which those FBOs were issued in the short-term having to comply with a Fiscal Rule (since 2014) that targeted a convergence of the structural central government fiscal deficit from levels of nearly 4% of GDP down to 2.2% of GDP over the period 2016-2020.

JEL classification: Public goods (H51), Infrastructure (H54), financial policies (G32).

## Introduction

---

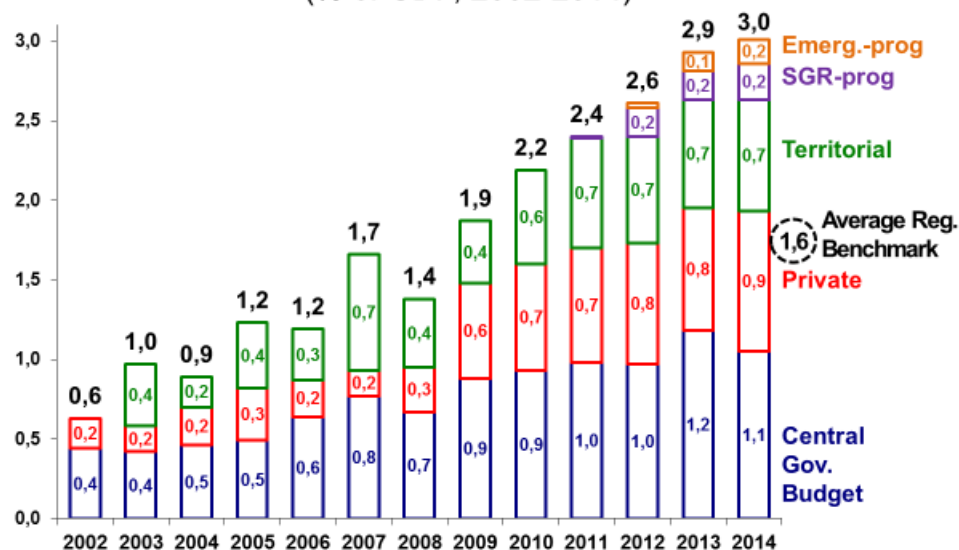
\* This Working-Paper is based on projects supported by private sector institutions of Colombia, including the *Camara Colombiana de Infraestructura* and several banks affiliated to ANIF (think-tank). The authors are grateful for the research support given, at different stages, by Alejandro Vera, David Malagón, and Ana Zuluaga.  
Email: sclavijo@anif.com.co

This study focuses on assessing the financial risks involved in granting private sector concessions in order to provide the required road infrastructure in Colombia. It comprises the acquired experience through the period 2002-2018.

The financial needs of Colombia in the area of infrastructure have been estimated close to 2% of GDP annually over the period 2013-2023. Colombia's infrastructure rates poorly when compared even to peers within Latin American countries, particularly in the area of roads and trains.

An ambitious program of road concessions has been implemented since 2002, comprising close to US\$20 billion (called the "Fourth-Generation", 4G) and representing about 7% of GDP of 2018. The idea is to be able to increase the investment in infrastructure from historical low levels close to 2% of GDP annually to at least 3.5% of GDP during 2013-2023, see graph 1.

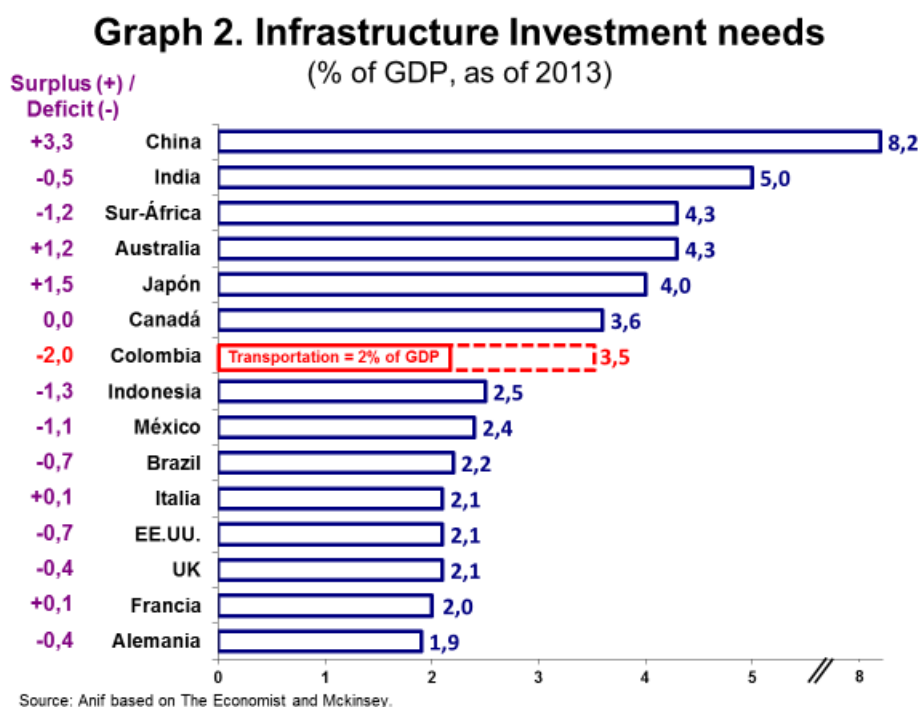
**Graph 1. Infrastructure Investment in Colombia:  
Transportation Public and Private**  
(% of GDP, 2002-2014)



Source: Anif based on DNP and ECLA

It has been estimated that attaining such a target of infrastructure investment in Colombia would require to close a financing gap of nearly 2% of GDP, where private

financing would play a key role, given the existence of a structural fiscal deficit close to 3% of GDP. This financial gap related to infrastructure investment in Colombia is quite demanding, when compared to peer-countries in Latin America (Mexico and Brazil standing in figures about half of that gap in Colombia) not to say of the surplus shown in China (of nearly +3% of GDP), see graph 2.



On top of the financial challenges, Colombia needs to move rapidly to provide the required transportation infrastructure in order to improve her competitiveness. In fact, the World Bank Doing-Business Report of 2017-2018 showed Colombia in the 59th position among 190 countries, losing six positions in the last year. This leaves Colombia behind México (49), Chile (55) and Perú (58) with respect to the peer-group of Latin American countries.

Part of the competitiveness problem of Colombia is reflected in high transportation costs. It has been estimated that cargo costs in Colombia related to international trade represent over-charges close to 54% with respect to those observed in peer-countries (above mentioned).

In Colombia, investment in roads hovered around only 1.2% of GDP per annum during 2002-2008, before the 4G-program gained momentum. More recently (2010-2014), it has been escalating up to 3% of GDP per annum (as shown before in graph 1).

The bulk of such recent impulse in road investment comes from the private concessions increasing from mere 0.3% of GDP up to 0.9% of GDP from, say, 2008 to 2014. Direct government financial effort related to road investment has increased from 0.7% of GDP up to 1.1% of GDP over the same period. As we will later report, the indirect governmental support has averaged an additional of about 0.4% of GDP per year, once we take into account the Future Budgetary Obligations (FBO) related to investment in transportation.

Supported by good terms of trade related to exports of oil and coal, the territorial entities also put their share in helping in the financing of road infrastructure during 2005-2015. However, the territorial funding of road transportation increased only from 0.4% of GDP up to 0.7% of GDP per year over 2008-2014. Given that “wind-fall gain”, it was expected that the territorial component of such infrastructure could have been increased in about 0.6 of GDP per year, instead of the +0.3% of GDP finally observed.

Unfortunately, the Constitutional reform of 2010-2011, related to the administration of territorial royalties, failed in such purpose. In fact, the bulk of those additional territorial resources were somehow dilapidated in small-local projects, which did not contributed much to propelling the needed connection between secondary-tertiary road and the main roads. Hence, multifactor productivity in Colombia has been stranded, for nearly four decades, at only 22% of the one observed in the United States.

The first chapter of this study is devoted to understanding the financial issues regarding the funding coming from the banking sector (locals and internationals) and the complementary role played by the capital markets (including pensions funds), the multilaterals, and the government, CAF (2016).

Given the high risks involved in the construction phase and the long-term financial exposure, the central government played an important role as a provider of state-guarantees of different types, including risks associated to construction failures, lower than expected traffic flows, and foreign debt exposure supported by tolls in local currency (see Engel et al., 2010 and 2011).

The second chapter of this study focuses on analyzing the role played by those Future Budgetary Obligation (FBO). We will see that such guarantees took the form of: i) a firm-obligation (complementing private funding in the project); or ii) a contingent-obligation (depending on triggers related to higher-than-expected costs, lower than projected vehicular traffic or exchange-rate volatility). Of particular interest will be the impact of those FBOs (flows and stocks) on the outstanding public debt ratios over the following decades.

The third chapter summarizes the main findings of this study, which can be synthesized as follows. At the level of the funding composition, it was a positive surprise to see the local banks of Colombia being able to participate in as much of 50% of the first-wave funding related to the 4G-projects. However, this represented an escalation of their asset exposure to infrastructure from 6% up to nearly 14% of their corporate credit. Given the longer-term commitment of these resources (5-7 years), we have estimated that this caused an additional pressure of nearly 1 percentage point (pp) in their solvency indicator (probably reducing it from 13% down to 12%, once Basel-III criteria is fully applied). In consequence, we here recommend to limit future bank funding to 30% of the second-third waves of 4G in order to contain pressure on the banking solvency indicators. Hence, the additional funding efforts should be coming from capital markets (including local and international pension funds, with the required risk provisions related to special-funding-vehicles using “step-in-clauses” and “mini-perms”).

Regarding the Future Budgetary Obligations (FBO), used to limit financial risks, we found that nearly 12% of GDP in Net Present Value would have to be added to the “explicit” gross debt of nearly 52% of GDP at the level of the general government of Colombia. Only 1% of GDP is represented by “contingent” liabilities related to risks

associated to construction failures, lower than expected traffic flows, and foreign debt exposure supported by tolls in local currency.

Finally, we found that FBOs related to infrastructure were issued in the short-term following a ruled which capped-them to no more than 0.4% of GDP per annum. However, this fiscal-flow pressure, of apparent relatively low magnitude, becomes significant once the Fiscal Rule (instituted since 2014) is taken into account. Indeed, that Fiscal Rule targets a convergence of the structural central government fiscal deficit from levels of nearly 4% of GDP down to 2.2% of GDP over the period 2016-2020. Hence, over the period 2018-2022, the “inherited” FBOs will represent public debt amortizations close to 0.6% of GDP per annum. Furthermore, over the following period of 2022-2026, they will continue to escalate given the fact of additional projects maturing by then.

All things considered, the experience of Colombia in using road concessions seems to be in the positive side. The idea was to enable a financial mechanism to provide badly needed infrastructure to modernize the country and to propel multifactor productivity (although the magnitude of the impact remains to be evaluated in the following decade). On the one hand, there was not another possibility of financing such needs, given the budget constraints and the Fiscal Rule limitations. The structuring of the projects by the private sector, under the guidance of the ANI-FDN, was a significant step-forward (although not without the turbulence caused by the Odebrecht fiasco which permeated most of Latin America). On the other hand, however, the financial alleviations are clearly of temporary nature, since the banking sector of Colombia has already felt the financial-stress caused by long-term exposure to infrastructure funding and the fiscal accounts will be subject to additional stress once the FBO mature in the following years.

Only time will tell us if the final provision of public goods (roads) will be able to accelerate growth and improve multifactor productivity at the macro level in Colombia. At the financial level, time will also be the implacable judge in telling us if banks were able to securitize their obligations to alleviate their solvency indicators

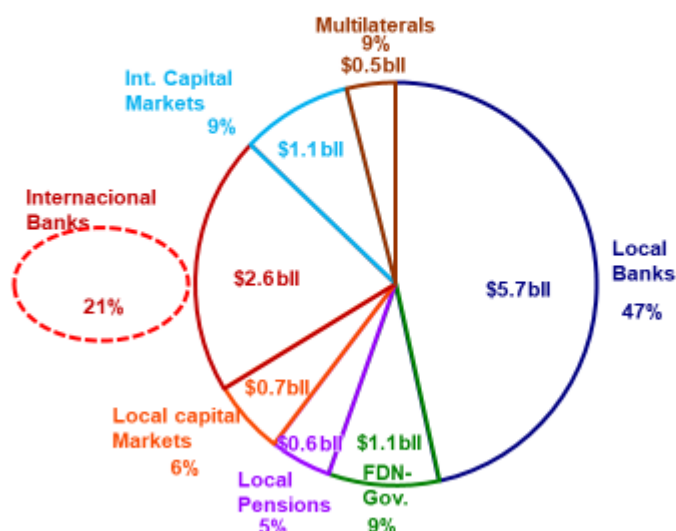
and if pension's funds will receive their proper financial share for bridging these financial needs of an emerging market as Colombia.

## **I. Financial Issues**

In this section we will analyze the balance of resources between the banking sector (local and foreign) and the capital markets (including bonds linked to project-finance and pension fund resources). We will try to answer if the local banks increased in a significant manner their "systemic risks" by increasing their long-term exposure to infrastructure projects.

We have estimated that local banks operating in Colombia participated close to 50% in the funding of the first wave of the 4G project. International banks provided nearly 20% of additional funding, so the combination of local and international banks explain about 70% of that funding. The remainder 30% of the funding came from capital markets and multilaterals (see graph 3). Interestingly, local capital markets provided 6% of the total funding by creating new financial vehicles that took into account the constructions risks. With the support of multilateral, private capital funds were created, where "step-in" formulas would allow to closely monitor the progress being made in the construction process and to compute the NPV of the project and their expected return.

**Graph 3. Financing Composition  
(4G first wave)**  
(% of total)



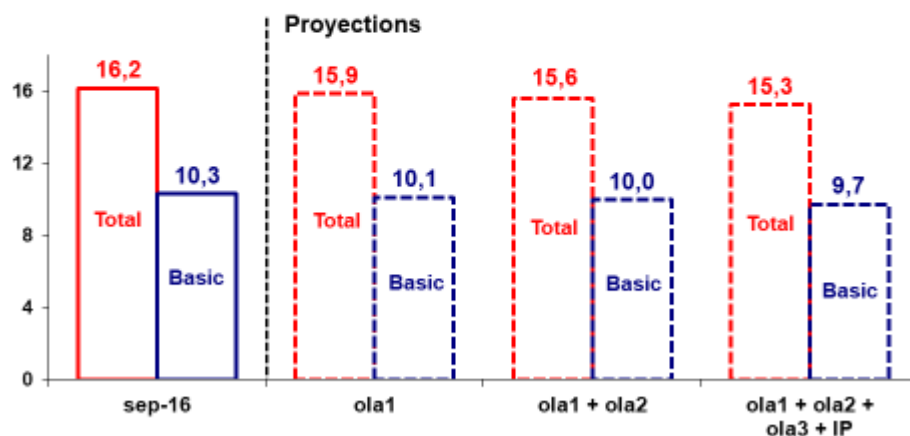
Source: Anif based on FDN.

However, the 50% local bank participation in the first wave of the 4G ended-up increasing their exposure to long-term infrastructure project from 6% up to 12% of their corporate loans. This result points in the direction that this financing strategy would soon surpass the international benchmark of a 15% limit in such exposure, flagging potential systemic risks to the Colombian banking sector. Furthermore, some concerns regarding sectorial *crowding out* have emerged.

Graphs 4 and 5 illustrate how the increasing exposure of bank loans to 5-7 years of infrastructure projects “eat-up” solvency-room. In fact, we have estimated that the 50% participation in the funding of the first-wave of 4G diminished the solvency ratio by 0.2 at basic level and by 0.3 in the total. Had local banks kept the same 50% participation in funding during the remainder of the 4G program, the solvency indicator would have diminished by 0.6 at the basic capital ratio (from 10.3 down to 9.7) and by 0.9 with regards to the total solvency ratio (from 16.2 to 15.3).

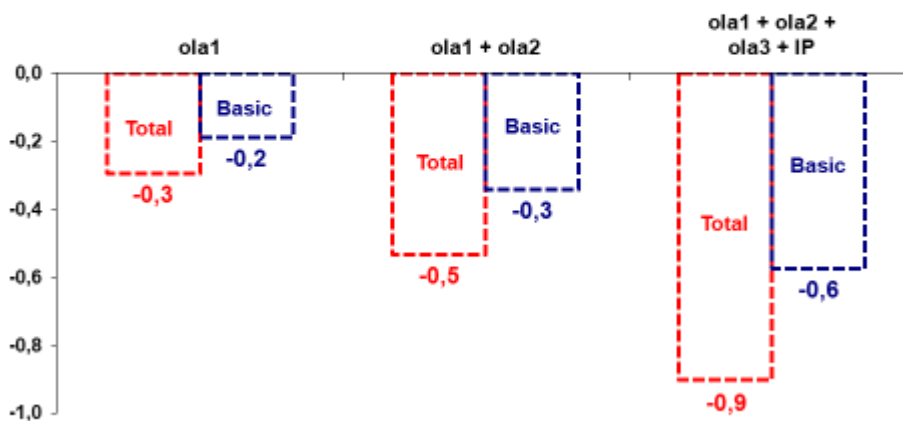


**Graph 4. Colombian Banks solvency ratio:  
impact of infrastructure exposure**  
(Solvency Ratio = Capital / Assets Weighted by Risk), 2016-2022)



IP: Private initiative.  
Source: Anif based on Financial Superintendency of Colombia

**Graph 5. Cummulative impact of infrastructure  
exposure on banking solvency ratios**  
(Solvency Ratio = Capital / Assets Weighted by risks, 2016-2022)



IP: private initiative.  
Source: Anif based on Financial Superintendency of Colombia

On top of this capital drain, banks would have soon increased their exposure to infrastructure from 6% up to 18% of the corporate credit lines, surpassing the international benchmark of 15% (as explained before). Given the potential financial stress that this situation would generate, we have come to the conclusion that future funding of the second-third waves of the 4G funding should not surpass the 30% flow participation. Hence, more financial support should come from local and foreign capital markets, including large securitations of toll-fares, as has been the international practice.

Related to financial risks, we found that operational risks were of high concern for those involved in financing 4G-projects. Operational risks are related to: i) construction permits, acquisition of terrains, environmental permits, and consultations with ethnicities; ii) commercial risks involving expected traffic and foreign exchange guarantees; and iii) quality of legal contract related to the so-called step-in clauses (of particular interest for pension funds, as explained above).

After assessing information provided by the Colombian infrastructure agency (ANI), we found that budgetary over-expenses climbed to represent close to 76% of the initial estimates of the different projects, see graph 6.

**Graph 6. Construction Risks in Colombia:  
4G program (First Wave)**

Type of Construction Risks	(% of initial budgetary plan)		(% of capex)
	Over-expenditure	Un-financed (surpassing contingent plan)	Total over-expenditure
	76%	27%	6,6%
a. Environmental	16%	9%	1,4%
b. Terrain acquisitions	39%	4%	3,4%
c. Public Ss-Adequacy	21%	14%	1,8%
d. Ethnicities consultations	(Sunk-Costs) ?	?	?
e. Geogolical	N.A.	N.A.	N.A.

This escalation of budgetary claims are related to poor initial planning of such roads. In this regard, Colombia is not the exception to the so-called “Iron-Law of infrastructure”, which claims that initial infrastructure budgetary estimations end-up multiplying by two and the expected time by three.

However, it should be said that over-expenses computed as a ratio of their *capex*, *seem to be contained below the 10% international benchmark*. The bulk of these operational risks were related to the acquisition of land, where the roads would be deployed, and to the procedures required to obtain environmental permits, see graph 6.

Although there has been a lot of political noise stemming from complex negotiations between road constructors with ethnicities (some of which properly claim invasion of their ancestors territory), it was impossible to quantify these type of costs. Chile, Peru, and Colombia have had increasing social problems related to deployment of infrastructure through “reserved territories”. To make matters even more demanding, it has also been the case of trouble arising by corrupt lawyers using false ethnicities claims to extortion authorities and/or constructors.

## **II. Future Budgetary Obligations (FBOs) and the Fiscal Rule**

Given the high risks involved in the construction phase and the long-term financial exposure (discussed above), the central government played an important role as a provider of state-guarantees of different types. These state-guarantees included risks associated to: i) construction failures; ii) lower than expected traffic flows; and iii) foreign debt exposure supported by tolls in local currency (see Engel et al., 2010

and 2011). This public financial support took the form of the so-called Future Budgetary Obligations (FBOs).

After analyzing multiyear obligations, prepared by the Ministry of Finance of Colombia in order to comply with the Fiscal-Responsibility Law of 2003, we found that cumulative FBOs totaled nearly 12% of GDP in Net Present Value (NPV). About 4% of GDP, of this total of 12% of GDP of FBOs, are directly related to the first wave of 4G projects. This value implies that the “explicit” gross debt of nearly 52% of GDP at the level of the general government of Colombia should be increased in that 12% of GDP of FBOs, unless the bulk of such FBOs had the nature of low “contingent probability” (see Clavijo, 2004).

However, after further analyzing this issue of “contingency debt”, we have come to the conclusion that only about 1% of GDP is represented by “contingent” liabilities related to: i) risks associated to construction failures; ii) lower than expected traffic flows; and iii) foreign debt exposure supported by tolls in local currency, see graph 7. In consequence, the remainder 11% of GDP (in NPV) are firm outstanding FBOs and should be added to the gross debt of the general government of Colombia.

**Graph 7. Operational Construction Risks in Colombia:  
4G (First Wave)**

	Future Budgetary Obligations (FBO) (% of GDP, in NPV)	Budgetary impact (% of GDP, 2017-2027)
<b>Operational risks</b>	<b>4% (= 3% in firm + 1% contingent)?</b>	<b>0,4%</b>
a. Road Traffic (70%?)	2,8%	0,28%
b. Toll tariffs (20%?)	0,8%	0,08%
c. Fx-coverage (10%?)	0,4%	0,04%
<b>Contract risks</b>	?	?
a. Step-in formula	?	?
b. Contingent upon ANI (AR)	?	?
c. Corruption (nulled) (¿SIC?)	?	?

Source: Anif based on ANI (Infrastructure Authority)

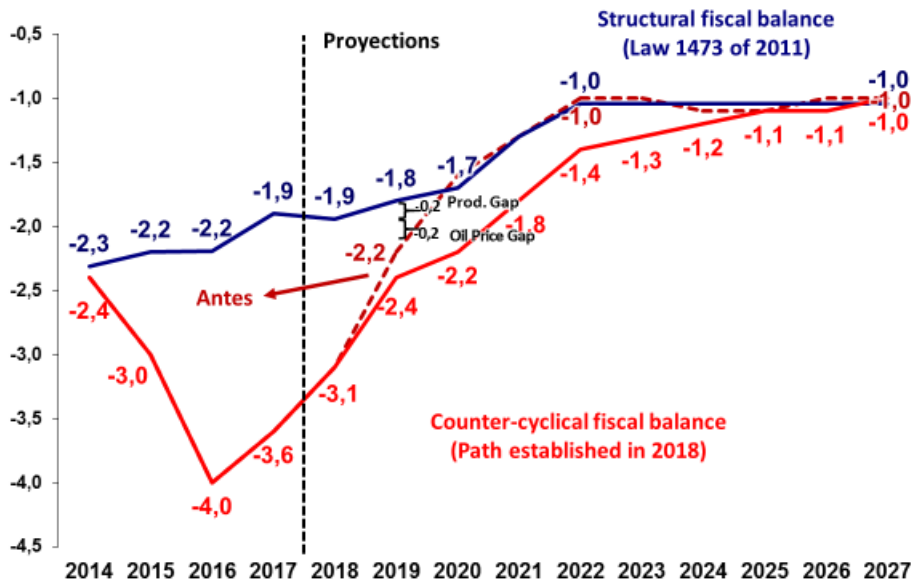
Unfortunately, we were unable to quantify the FBOs related to the step-in formula (a provision required by pension funds, as discussed above) or the contingent values related to legal disputes with ANI or with the superintendency (SIC), as in the cases of the Odebrecht global scandal due to corruption.

We found that FBOs related to infrastructure were issued in the short-term following a ruled which capped-them to no more than 0.4% of GDP per annum (as stated in the official document of Colombia *Conpes 3882 of June 2015*). However, this fiscal-flow pressure, of apparent relatively low magnitude, will have significant impact on the Fiscal Rule (instituted in Colombia since 2014). In fact, over the period 2018-2022, the “inherited” FBOs will represent public debt amortizations close to 0.6% of GDP per annum. Furthermore, over the following period of 2022-2026, they will continue to escalate given the fact of additional projects maturing by then.

It should be taken into account that about 70% of total exports of Colombia are related to energy prices, so the collapsed of the oil prices during 2015-2016 and their repetition by end-2018 represent already a significant fiscal challenge. The tax-reform enacted end-2018, unfortunately came short in addressing the requirement of +1% of GDP of additional tax-collection in order to comply with the Fiscal Rule. This Fiscal Rule targets a convergence of the structural central government fiscal deficit from levels of nearly 4% of GDP down to 2.2% of GDP over the period 2016-2020, see graph 8.

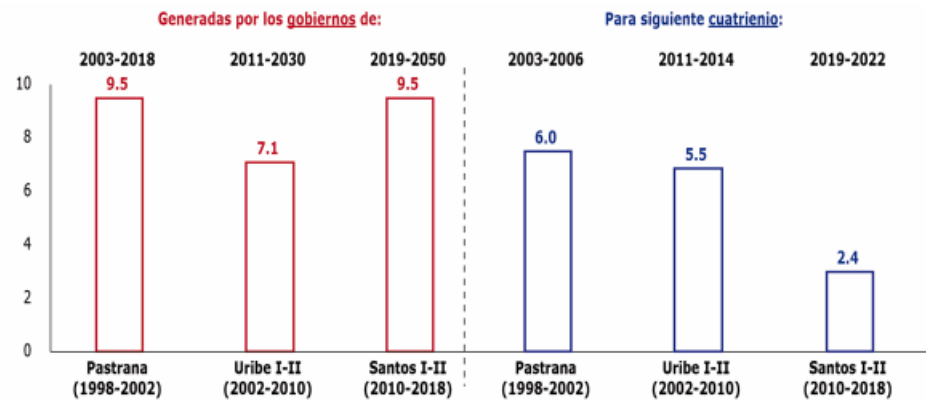
For the historical record, it should be said that the Santos Administration (2010-2018) issued 9.5% of GDP of FBOs (in NPV over the following three decades). These levels of future public indebtedness are of similar magnitude to those inhered from the Pastrana Administration (1998-2002), although they are higher than the 7.1% of GPD observed over the Uribe Administration (2002-2010), see graph 9.

**Graph 8. Fiscal Rule in Colombia: Central Gov. convergence**  
(% del PIB)



Source: Anif based on Ministry of Finance.

**Graph 9. Future Budgetary Obligations in Colombia (2003 – 2050)**  
(% of GDP)



Source: Ministry of Finance.

Regarding the Fiscal Rule used in Colombia, it is useful to explain its counter-cyclical nature, which takes into account the so-called “production gap” (as in a Taylor Monetary Rule) and the “commodity-price gap” (as the difference between the spot oil-price and its long-term price). The problem with such Fiscal Rule is that ignores the dynamics of the Gross Public Debt/GDP ratio and the required primary surplus to stabilize this debt ratio, as shown in equation (1) below.

$$(1) BP_{req} = \frac{(r_t - g_t)}{(1 + g_t)} \alpha D_{t-1} + \frac{(r_t^* + \Delta e_t - g_t)}{(1 + g_t)} (1 - \alpha) D_{t-1}$$

Where,

$r, r^*$ : represent real interest rates related to local and international debt.

$\alpha$ : share of external debt.

$\Delta e$ : depreciation of local currency against the dollar

$g$ : real GDP growth or rate of expansion of tax-collection

$D$ : ratio of Gross Public Debt/GDP

As it is well known, equation (1) can be turned into equation (2) by way of introducing the implicit interest payment component. Hence, equation (2) expresses the primary balance required to stabilize the debt-ratio, following Blanchard (1990).

$$(2) BP_{req} = \frac{(p_t - g_t)}{(1 + g_t)} D_{t-1}$$

Where,  $P$  = ratio of interest payments/Gross Public Debt

For the particular case of Colombia, we have found that in order to stabilize the gross debt/GDP ratio, at the current levels of 45% of GDP (related to the central government’s debt), the primary surplus should be above 1% of GDP over the period 2018-2022. This is the result of assuming that real tax collection grows in tandem with expected GDP’s growth of 3.5% per annum. However, if real tax collection only grows at the pace of 2% per annum, the debt ratio could continue to scale up to 48% by 2022 (adding close to +18 GDP-points in that ratio over the last decade).

By having focused on the “production-gap” and the “oil-price gap” over the period 2013-2018, we sense that the counter-cyclical nature of the Fiscal Rule of Colombia has missed the main objective of stabilizing the gross public debt /GDP ratio. Our recommendation, for enhancing future credibility on the stabilization power of the Fiscal Rule in Colombia, is to follow the path of the “Inflation Targeting” regime applied at the monetary level during the last two decades. In fact, after floating the exchange rate peso-dollar in 2000, Colombia was able to reduce inflation to the long-term range of 2% to 4% per-year by way of focusing directly on the inflation target, instead of intermediate monetary targets. Hence, the same should be done regarding the Fiscal Rule: it should state targets directly related to the primary surplus required to contain the debt ratio before reaching, say, the level of 60% in the consolidated gross-public debt, following the practices behind the Maastricht Rule (Clavijo, 2004).

### **III. Conclusions**

In this document we have assessed the financial risks involved in public transportation through concessions in Colombia over the period 2002-2018. During this period, the Uribe and Santos Administrations launched an ambitious program of concessions amounting close to US\$20 billion (called the “Fourth-Generation”, 4G), representing about 7% of GDP of 2018, to be executed over a decade.

Nearly 70% of those resources were raised through banks (locals provided nearly 50% of the total); capital markets funded another 20% (locals providing 10% of the total); and multilaterals and government supported the remaining 10%. Given the high exposure of the local banks to long-term projects (to 5-7 years), under the more stringent Basel-III rules, several issues of “systemic risk” have been raised.

In order to limit such risks, the central government of Colombia had to provide a “financial-cushion” through issuing Future Budgetary Obligations (FBO). It has been estimated that such FBOs currently amount to 12% of GDP in Net Present Value,



representing a “contingent” liability that might have to be added to the “explicit” gross debt of nearly 52% of GDP at the level of the general government.

We have here discussed the financial pros/cons of this strategy of public infrastructure financed under private concessions supported by FBO. In particular, it assess: i) the cash and stock effects over public debt after issuing such FBOs; ii) the different types of public guarantees under those FBO and their “contingent” impact (including risks associated to construction failures, lower than expected traffic flows, and foreign debt exposure supported by tolls in local currency); and iii) the manner in which those FBOs were issued in the short-term having to comply with a Fiscal Rule (since 2014) that targeted a convergence of the structural central government fiscal deficit from levels of nearly 4% of GDP down to 2.2% of GDP over the period 2016-2020.

The main findings of this study can be synthesized as follows. At the level of the funding composition, it was a positive surprise to see the local banks of Colombia being able to participate in as much of 50% of the first-wave funding related to the 4G-projects. However, this represented an escalation of their asset exposure to infrastructure from 6% up to nearly 14% of their corporate credit. Given the longer-term commitment of these resources (5-7 years), we have estimated that this caused and additional pressure of nearly 1 percentage point (pp) in their solvency indicator (probably reducing it from 13% down to 12%, once Basel-III criteria is fully applied). In consequence, we recommend to limit future bank funding to 30% of the second-third waves of 4G in order to contain pressure on the banking solvency indicators. Hence, the additional funding efforts should be coming from capital markets (including local and international pension funds, with the required risk provisions related to special-funding-vehicles using “step-in-clauses”).

Regarding the Future Budgetary Obligations (FBO), used to limit financial risks, we found that nearly 12% of GDP in Net Present Value would have to be added to the “explicit” gross debt of nearly 52% of GDP at the level of the general government of Colombia. Nearly 1% of GDP is represented by “contingent” liabilities related to

risks associated to construction failures, lower than expected traffic flows, and foreign debt exposure supported by tolls in local currency.

Finally, we found that FBOs related to infrastructure were issued in the short-term following a ruled which capped-them to no more than 0.4% of GDP per annum. However, this fiscal-flow pressure, of apparent relatively low magnitude, becomes significant once the Fiscal Rule (instituted since 2014) is taken into account. Indeed, that Fiscal Rule targets a convergence of the structural central government fiscal deficit from levels of nearly 4% of GDP down to 2.2% of GDP over the period 2016-2020. Hence, over the period 2018-2022, the “inherited” FBOs will represent public debt amortizations close to 0.6% of GDP per annum. Furthermore, over the following period of 2022-2026, they will continue to escalate given the fact of additional projects maturing by then. It could help to the enhancement of the credibility in the fiscal rule if it turned to focus more on the dynamics of the debt that in the parametric values of the “production gap” or the “oil-price gap”.

All things considered, the experience of Colombia in using road concessions seems to be in the positive side. The idea was to enable a financial mechanism to provide badly needed infrastructure to modernize the country and to propel multifactor productivity (although the magnitude of the impact remains to be evaluated in the following decade). On the one hand, there was not another possibility of financing such needs, given the budget constraints and the Fiscal Rule limitations. The structuring of the projects by the private sector, under the guidance of the ANI-FDN, was a significant step-forward (although not without the turbulence caused by the Odebretch fiasco which permeated most of Latin America). On the other hand, however, the financial alleviations are clearly of temporary nature, since the banking sector of Colombia has already felt the financial-stress caused by long-term exposure to infrastructure funding and the fiscal accounts will be subject to additional stress once the FBO mature in the following years.

Only time will tell us if the final provision of public goods (roads) will be able to accelerate growth and improve multifactor productivity at the macro level in Colombia. At the financial level, time will also be the implacable judge in telling us if

banks were able to securitize their obligations to alleviate their solvency indicators and if pension's funds will receive their proper financial share for bridging these financial needs of an emerging market as Colombia.

### References

ANIF (2014), Concesiones de Infraestructura de Cuarta Generación (4G), Noviembre.

CAF (2016), *Collateralized Debt Obligation* – CIDO, presentation by Víctor Traverso in General Assembly of Felaban.

Blanchard, O.J. (1990) "Suggestions for a New Set of Fiscal Indicators" OECD Working Paper (No. 79).

Clavijo, S. (2004) "Public Debt, Contingent Liabilities, and 'Debt Tolerance': The Case of Colombia" Public Finance Workshop on Public Debt (Banca D'Italia).

Engel E., Fischer R. y Galetovic A. (2010), "The Economics of Infrastructure Finance: Public-Private Partnerships versus Public Provision", *EIB Papers*, Vol. 5, 2010.

Engel E., Fischer R. y Galetovic A. (2011), "Public-Private Partnerships to Revamp US Infrastructure", February of 2011.

Schaechter A., Kinda T., Budina N. y Weder A. (2012), "Fiscal Rules in Response to the Crisis-Toward the Next Generation Rules. A New Dataset", *IMF Working Paper*, WP/12/187, julio de 2012.

*The Economist* (2017), "Infra-Dig: How and when to use private money in infrastructure projects", April 22nd.