

## **CHAPTER 1**

### **Financing infrastructure in Chile: Fixed income instruments**

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This document is the response to a direct invitation of the Centre for Banking, Finance and Capital Markets at the University of Lima - FINLAB, within the framework of integration of the Pacific Alliance and APEC, Mexico, Colombia, Peru and Chile, which has organized the international seminar: “MILA and fixed income: How to reduce our deficit in infrastructure?”

The paper aimed to explore the relevant mobilizing factors that have been used in Chile for financing infrastructure; particularly those related to fixed income instruments as an option of National and Foreign Investment in Asia - Pacific and APEC. This document is preparatory for the XXIV Summit of the Pacific Alliance and APEC, to be held in Lima - Peru on the 18th, 19th and 20th of November 2016.

To this end, we used a SWOT type methodology of analysis and evaluation (Strengths, Weaknesses, Opportunities and Threats), by which is reviewed, in documentary form, the different factors that have been used in Chile to financing infrastructure, as a first component.

The factor analysis is performed with the controllable variables (the strengths and weaknesses are internal and therefore we can act on them more easily), and non-controllable variables (the opportunities and threats are presented by the context and the

greater action we can take is prevent them and to act at our convenience).

In this regard, the SWOT –used as a tool for strategic analysis– will allow us to analyze the internal elements of the country and therefore controllable, such as strength and weaknesses; as well as external factors, and therefore not controllable, such as opportunities and threats.

### **1.1 Regulations for the issuance of fixed income securities**

Today, the public-private partnership’s models to be successful will be precisely those capable to balance projects that create value for people, submit an appropriate risk allocation, capture the liquidity available to the international and local capital markets, with information and transparency of its operations and with a citizenship led by their rights.

In May 2016, the president of the Chilean Republic, Michelle Bachelet<sup>1</sup>, announced the bill that created the Infrastructure Fund<sup>2</sup> (hereinafter Fund or FICH). In a ceremony at the Palace

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<sup>1</sup> Michelle Bachelet is the president of the Republic of Chile. His first government was between 2006 and 2010, and his second term runs from 2014 to 2018.

<sup>2</sup> The document is complementary to a report named foundations for the creation of an “Infrastructure Fund” for Chile. CPI Working Paper, June 2015 coordinated by Alvaro Gonzalez of Latin America Infrastructure. It also takes as a reference a presentation from September 2014 called “Innovating in Infrastructure Finance: Payments for Availability with Sleeping Beauty Bonds” for the Trade Americas & Connect Americas Expo-IDB in Miami; a presentation called “Financing Proposal for Mega Infrastructure with Private Sector Participation Through Residual Values” prepared in El Cairo (May, 2015); and “Infrastructure Fund and the History of the Meteorite” from May, 2016; all prepared by Sergio Hinojosa from IKONS ATN.

of La Moneda, she stressed that this initiative “should go at the speed that the country required with planning and according to the strategic needs of our economy”. Its objective is the construction, extension, repair, maintenance, operation, development, financing and investment in infrastructure projects, including its additional services.

The Fund will be a limited company with 99% of the shares owned by the state and 1% by the Corporation of Production Promotion (CORFO in Spanish)<sup>3</sup> where the shares of this company will be inalienable. Ministers of Finance and Public Works will be the representatives of the Treasury in the shareholders' meeting. The board shall be appointed by the head of state: two of them proposed by the Ministry of Public Works (MOP) and the other three from a lists proposed for each position by the Council of High Public Direction.

The FICH will have an initial capital amount of US\$ 9,000 million to develop the projects. According to the MOP's minister, “this initiative is the most important public-private partnership since the concession system was created. What we are doing is creating an infrastructure fund which is financed in a rather innovative way, on behalf of the value that the State has in the future concessions”.

In June 2015, the Infrastructure Policy Council (CPI in Spanish)<sup>4</sup>, proposed to the Government the creation of an

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<sup>3</sup> The Corporation of Production Promotion (CORFO) was created in 1939 and is an agency of the Chilean State entrusted to stimulate the productive activity of national innovation.

<sup>4</sup> The Policy Infrastructure Council (CPI) seeks to create a space for debate and reflection that brings together academics and professionals from the

infrastructure fund using the economic value of all preexisting road and airport concessions, as public property, to establish a guarantee fund and financial support to allow concession projects and Public-Private Partnerships (PPPs) in all the economy sectors for the next 25 years.

In August 2014, at the ICARE Congress, former Chilean president Ricardo Lagos<sup>5</sup> said that Chile has raised \$ 25 billion in infrastructure concession assets, and those assets would generate flows for another US\$ 30 billion. He stated that “in Chile there are no financing problems to invest in infrastructure, today there is financing for 50 or even 100 years and is something to take advantage of now”.

In this Congress, the former president introduced for the first time to the public opinion the idea to use the underlying assets to generate new infrastructure.

In September 1999, the ministers of Finance and Public Works signed an agreement to launch the Infrastructure Financing Fund (FONDINF in Spanish), an initiative that would be a source of funding and guarantees of concession contracts.

The State disposed the creation of this mechanism through the provision of resources in a fund or special account. The fund

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private sector, union leaders, academics –and others interested in the topic–, concerned about the development of infrastructure, in order to generate a state policy to guide its development in an integral way and for the long-term. Three Chilean former presidents are active members of the Council: Eduardo Frei (1994-2000), Ricardo Lagos (2000-2006) and Sebastián Piñera (2010-2014).

<sup>5</sup> Ricardo Lagos Escobar, was the President of the Republic of Chile, between 2000 and 2006.

operator, set in the signed protocol, contemplated among other things the project's qualification through its social evaluation; and the fund management, by the General Treasury of the Republic, which would keep the funds in an account specially set up at the Central Bank of Chile.

The FONDINF was created with an initial contribution of approximately US\$ 450 million. The application of resources to subsidize projects, induce the FONDIF to use –in a few years– all its resources, keeping the special account in insignificant levels for the promotion of concession projects. In conclusion, the Fund –established as a *glosa presupuestaria*<sup>6</sup>– finally ended without significant resources.

Since 1997, Chile has developed a concession program in order to gradually overcome its infrastructure deficit. This deficit has been falling behind and today an important part of Chile's growth is established in this base.

The issuance of infrastructure bonds has been classified by Feller Rate, and have financed several works. These investment options have had an interesting demand from investors. In this scope, stands out the participation of Feller Rate, Standard & Poor's, on the feasibility of bond issues about studies that have been commissioned by the Ministries of Public Works and Finance.

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<sup>6</sup> Budget *glosas* specified expenditure figures in the budget laws.

## 1.2 Operational Mechanics of issuance and trading of fixed income securities

In Chile's recent years, significant investments have been made in roads, bridges, tunnels, public transport, ports, airports, railways, electrification networks, power plants, dams, water, sanitation systems, among others. These investments have been implemented through projects of high complexity and long maturation, more increasingly financed through private capital, and where the direct users pay a total or partial fee.

However, when these projects are implemented, the investment is paid in the corresponding period of a generation, or perhaps two. For example, let's think about a highway awarded in the form of concession for a period of 20 years, or an airport concession for 25. In both cases the life of the physical asset is 50 or more years. By definition, at the end of the concession period, the infrastructure has been fully paid through user fees; not only in terms of the implemented public work, but also in terms of the operation and maintenance applied to retain its value at the end of that period.

Consequently, when the deadline is met and the infrastructure is returned to the public sector management, the infrastructure under analysis is expedited to be awarded again under another concession; but it arrives for the next generation –that will usufruct it as well–, practically, with a lower cost than the initial investment<sup>7</sup>; and therefore, *ceteris paribus*, the new

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<sup>7</sup> It is assumed that if the original program of maintenance is followed, the residual value of the infrastructure should correspond to 100% of the book value at the time of applying improvements to the implemented work, the

concessionaire would make a payment to the government for this new concession awarded. That payment for the residual value of the concession, represents the cost of investment capital that have paid all users of the infrastructure.

Indeed, the infrastructure generates a residual value (RV) at the end of their contract period. That is to say, is a value that – while invisible– cannot be considered as an instrument to generate more resources. But, if it is visible with anticipation (present value), it is certainly a source of income that can be used at the end of the concession or even earlier.

What if you can get financially visible that residual value in a way that it can be monetized at any point of time? “New” resources –and so far “invisible”– would be available as tangible resources for monetization, balancing the public sector, namely, a new source of funds at present value. Therefore, one could correct the intergenerational imbalance with payment by an infrastructure whose benefits impact on more than one generation.

In conclusion, the local and international capital market can constitute a fund with legal status to securitize its residual value as a new source of funds to present value and transform it into financial resources with current availability to leverage projects (not subsidize them), finance them (generating a spread in favor of the fund) and/or ensure their development.

According to De Soto (2002) “One of the great challenges of the human mind is to understand and reach those things that we

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same that would have to be equivalent to the market value at that point in time.

know exist, but that we cannot see. Not all what is real and useful is tangible and visible”. ¿What fixes the potential of an asset to start up an additional production? In the case of infrastructure with residual values and willingness to pay, the answer is “old infrastructure” generates “new infrastructure”.

For example, this fund might issue bonds “today” –without waiting for the end of the concession contracts– against this residual value and have liquidity to undertake new concessions and/or public private partnership contracts (PPP)<sup>8</sup>.

The impacts of this way of transforming an invisible (or asleep) capital in visible capital for an economy, are extremely important because they generate leverage effects of new resources, with energizing effects on production factors especially in the employment and welfare and social integration of the population, having a financial economic balance in infrastructure providing transparency. Surely, it is increasingly demanded by the public.

### **1.3 Importance of the negotiation of fixed income securities in the market**

#### **Pension fund administrator (AFPs). Source of funds.**

AFPs<sup>9</sup> were born in 1980, driven by a neoliberal economic policy decision of the civil military dictatorship of A.

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<sup>8</sup> Partnership, agreement, alliance, public and/ or private to undertake a project.

<sup>9</sup> AFP is a Pension Fund Administrator installed in Chile from Legislative Decree N° 3500 of 1980.



Pinochet<sup>10</sup> to transfer to the private sector the administration of pensions fund. Moreover, the staff of the Armed Forces (AAPP) does not enter to this new system of individual capitalization. Each AFP receives from its contributors a portion of their salaries, and this money is managed through investments.

The method of financing an AFP is through the collection of commissions of its affiliates according to a definition of rate structure and to the different types of affiliates and its types of quotes. Commission rates are freely defined by each administrator and can be varied with anticipation and publication of information to the public. These may be a percentage of the remuneration or taxable income, a percentage of the pension or a fixed amount per transaction.

At the same time of obtaining and increasing its capital through commissions collected to its affiliates, they also obtain profits or losses according to the yield of investment of Pension Funds they manage, as they are obliged by law to maintain a reserve called reserve requirement. This is part of the own capital that the AFP owns and that corresponds to 1% of the funds they manage, which is invested in the same instruments that those of the quotes of workers. The reserve requirement composed by reinvested own and rented capital corresponds approximately to 67% of the equity of the AFP.

The profit of an AFP is correlated with its capacity to manage funds. The reserve requirement obtains the same profitability of multifunds. Indeed, when the contributors obtain good profitability, the AFP also obtain benefits for its own interest.

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<sup>10</sup> Augusto Pinochet Ugarte, civil military dictatorship 1973 -1990.

## Available funds

In March 2016, the total value of Pension Funds reached US\$ 163.317 million, managed by the AFP, equivalent to around 70% of the Gross Domestic Product (GDP) 2015. This financial power grants to a few people the possibility to define where the investment of capitals will be addressed, which is very relevant for the current way of accumulation and expansion of wealth. Not for nothing, professional politicians of various parties of the ruling government of the last 25 years have registered as (or have been) directors of AFP. In fact, the last presidents of the AFP Association were ministers, one in dictatorship and the other in the government of Piñera<sup>11</sup>.

**Table 1**  
**Number of affiliates by AFP**

<b>AFP</b>	<b>Affiliate</b>	<b>Part%</b>	<b>Accum%</b>	<b>Contributors</b>
PROVIDA	3.215.403	31,80%	32%	1.597.026
HABITAT	2.040.212	20,20%	52%	1.136.819
CAPITAL	1.733.047	17,10%	69%	916.298
MODELO	1.480.926	14,70%	84%	645.968
PLANVITAL	999.809	9,90%	94%	438.712
CUPRUM	639.853	6,30%	100%	442.454
<b>TOTAL</b>	<b>10.109.250</b>	<b>100%</b>		<b>5.177.277</b>

Source: Monthly Statistical Report of Affiliates and Contributors (June 30, 2016).

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<sup>11</sup> Sebastian Piñera Echeñique, President of Chile 2010 -2014, right wing government representative of Alliance for Chile.

It is not a competitive market (6 institutions), it has a high concentration level since 3 institutions concentrate more than 69% of affiliates. Therefore, it is a market of oligopolistic characteristics with trends to monopolistic actions.

#### **1.4 Potential local institutional investors**

##### **Demand of fixed income securities**

The demand of fixed income instruments may be made by institutional investors with sources of available funds that manage portfolios, and that face increasing resources flows, and should find investment options permanently.

**Table 2**  
**Potential local investors**

<b>Instituciones</b>	<b>Stock de Fondos (US\$ MM)</b>	<b>% Portfolio en Renta Fija</b>	<b>Flujo de Fondo mensual (US\$ MM)</b>
Administradoras de Fondos de Pensiones AFP	163.000	46%	380 (Ingresos de Cotizaciones)
Compañías de Seguros	50.000	65%	220 (Pago de Pensiones)
Mercado Financiero	47.000		

Source: Monthly Statistical Report of Affiliates and Contributors (June 30, 2016).

## **Fixed income security supply**

The supply of fixed income instruments in the stock market has the following characteristics:

- Be a source of funds of significant amounts of money.
- Be a source of medium and long term funds.
- Obtain competitive interest rates in terms of those collected by financial institutions of Chile and abroad.
- Leverage the participation of the private sector to invest in infrastructure.
- Improve life quality of persons by providing infrastructure.
- Increase competitiveness of the country by providing infrastructure.
- Increase the economic growth by improving the relationships between saving and investment.
- Improve the unsystematic risk (diversifiable) with bonds valuation with high correlation with other investments with lower or negative correlation and consequently maximize the expected return and reduce the portfolio risk.
- Reduce the systematic risk  $\beta$  (undiversifiable) the authority and under criteria of risk classification (public private participation) categorizes and defines the universe of investment options that may adopt the AFP and insurance companies.

Moreover, it is important to mention that the supply of the mentioned securities is structured by the issuance of the Central Bank, General Treasury of the Republic, banks and companies and others relevant institutions.

## **Strengths of fixed income security supply and demand**

From the Chilean experience on the issuance of bonds, it can be identified the following strengths:

1. Creation of a public company that will manage an infrastructure fund.
  2. An institutional capital market that is generating transfers of US\$ 260.000 million and a monthly flow of more than US\$ 600 million.
  3. Banking reduces its competitiveness in the market of bonds. Initially, banks financed infrastructure with syndicated loans to companies. Today, it is more difficult its participation in syndicated loans due to Basel capital requirements, but they maintain a significant presence.
  4. Great infrastructure projects already built in the sanitation sector (treatment plants of wastewater), highways awarded by concession in Santiago and in regions that were already financed and built with fixed income instruments and are in their operational stage.
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1. Improvement in the competitive advantage of the country; there is now greater clarity in the fixed income securities, operational aspects, taxes, custody for foreign investment and is in processes of greater simplification.
  2. Tolls flows and other operational income are the funds source that supports the financing structure of the project.
  3. Commitment of the Chile's State to support the concessions program; which is reflected in the creation of mechanisms that provide an operation framework for the concessionaire companies and investors.

4. National laws regulate these investors to invest in Chile, and with specific limits to invest abroad, according to operation ratios.
5. The issuance of infrastructure bonds can be made in the pre-project stage (project finance), as in the operations stage thanks to the income from highway tolls (revenue bond).
6. The essential element for the risk rating agency, is to determine the strength of the project to generate cash flows, that allow it to comply with the debt service.
7. Legal and regulatory changes, required for sharing part of the risk with the concessionaire companies, have been promoted.
  - a) Minimum guaranteed income.
  - b) Allocation of subsidies in certain highways.
  - c) Incorporation of financial tools as insurance exchange and mechanisms of income distribution (MID), to mitigate project's risks.
8. State subsidy: The State has maintained a mechanism to reduce the operation risk of concessionaire companies, guaranteeing minimum income, with direct subsidy and reimbursements of the added-value tax (IVA), and constitute flows that reduce the demand risk.
9. Low Competence level: The projects that have issued debt in the local market do not present in their projects alternative routes and their effects have been incorporated in the respective traffic studies.
10. The habit of paying tolls: The payment of tolls for use of highways is a habit in Chile, this has allowed to establish tolls in new sectors of the current ones or in new highways.

11. Opportunity of bonds issuance in the final stage of construction: In their majority, projects have placed their bonds issuance of infrastructure in the final operation stage. This shortens the risks and delivers better information with greater certainty of traffic studies and improve risk classification.
12. Complementary Works: In many projects arise additional works requested by the Ministry of Public Works (MPW) that require complementary agreements. These agreements are duly compensated, and the risk of construction overruns is bounded with this mechanism.
13. The risk of over term is duly mitigated, for the reasonable estimation time for complementary works that cover the breaches of the constructor.
14. Experience of Constructors: The experience of the project's sponsor companies awarded by concession, and of the building companies that have participated in the different project stages, have a wide experience. In their majority correspond to (Spanish) consortia who have developed major works internationally.
15. Safeguarding of legal provisions: Promoter companies of the tendered projects tend to overprotect bondholders, to guarantee contingent contributions in the event that cash flows do not have relation with the initial tendered projections.
16. Risk Company maintain classification: The global insurance industry is in a stage of greater complexity, however, the companies that have granted guarantees to infrastructure bonds issuance in Chile have maintained their risk classification in the scale of Standard & Poor's.



## **Weaknesses of supply and demand of fixed income securities**

1. Lower offering levels of infrastructure projects performed by the State, cause a lower placement of fixed income instruments by private (concessions). The lower level of projects offering that search financing is generated by several factors; environmental, energy costs, political factors, economic prospects, and so on.
2. High fluctuation in growth rates of the GDP: This variability, affects the first issuance of infrastructure bonds. The latter are incorporating the growth of the most real product.
3. Lower levels of public indebtedness, have generated lower issuance needs of fixed income instruments by the State to fund the deficit.
4. Sovereign Risk: The downtrend in the growth of large economies like China and Europe, is negatively affecting the economies of Latin America (commodity), generating greater sovereign risks in the region. Chile maintains a macroeconomic, political and social balance, achieving improvements in relative terms.
5. Traffic projection models show a high sensitivity to economic cycles. The economic recession scenarios imply a negative performance of the concession (traffic trend of trucks and buses effect with overestimated demand models).
6. Installation of Traffic Insurance: Is a mechanism of distribution of cash flows, that allows concession operators to distribute the risk in eventual descents that may experiment traffic flow. Minimum income levels are guaranteed at equivalent costs, a scale is applied and the income that is in a determined level is shared.

7. Weak tariff transparency: Tariffs register a pre-established maximum value per vehicle and congestion, these are indexed and indicate real incremental along useful life of the concession.
8. Increasing risks of construction: Building societies face increasing risks for incremental costs in over terms, overruns, complementary works or compliance of increasing technical specifications in their standards.
9. Imbalance between demand and supply of fixed income instruments: The institutional investors are forced to find other investment options.
10. Low competitiveness level: A market that maintains positions, when existing low options of fixed income instruments. Institutions do not sell positions as there are no other options, and this generates a low competence depth in the fixed income market.

### **Opportunities of supply and demand of fixed income securities**

1. Better comparative advantages of investment options in international markets, drive Chilean companies to diversify their investment and reduce their non-systematic risk and reduce internal competition, for example, companies such as; Transelec, Enap, Codelco, Masisa, SMU, Arauco, CMPC, ECL, Colbun, Soquimich, Cencosud, Corpbanca, Banco de Chile, Banco Santander, Banco Estado, Banco BCI, among others.
2. Improve coordination and integration, of Stock Exchange and Electronic Stock Exchange in the systems of transaction of fixed income instruments.
3. Improve local market, easing conditions for foreign investors (local RUT, taxation).

4. Establish conversion of instruments, liquid through securitization (mortgage notes, syndicated credits, leasing, credit cards, among others).
5. Allow Trading, in the regulations for the AFPs and banking market.
6. Increase the placement of new issuances that incorporate quick answers and lower costs. Potential growth of fixed income instruments in sovereign papers, banking, corporate.
7. Flexibility in tax and operational regulations for foreign investor, generating a better depth and liquidity in fixed income instruments.
8. Open new options and investment limits for the use of derivatives for the industry of AFPs and FFMM.

### **1.5 Identification of the infrastructure deficit by economic sector of the country**

The savings of workers managed by the AFPs, is a great source of saving (strength) of the Chilean economy and an advantage (opportunity) for companies that look for financing; that is to say, a source of non-banking resources for financing its operations and projects.

#### **Example of road infrastructure financing Santiago Valparaiso**

The financing of this highway was materialized through the issuance of an infrastructure bond. In January 2002, the concessionaire corporation makes a bond issuance supported by the following features:

- Securities: Bonds for financing infrastructure.

- Issuing: Sociedad Concesionaria Rutas del Pacífico S.A.
- Nominal amount: 12 million units of promotion [US\$ 400 million].
- Term: Series A-12 years, Series B-23 years, Series C-23 years.
- Bond interest rate: A-5,5% B-5,8% C-5,8%.
- External guarantee: Bonds insurance of Interamerican Development Bank.
- Co Guarantor: Financial Security Assurance (FSA) [monoliner].
- Holder representative: BBVA Banco Bhif.
- Paid Bank: Banco de Chile.
- Administrator Bank and Custody: Banco Bice.
- Full Underwriter: Santander Investment – Chile.

It is illustrative the advertising found on concessioned highways regarding pension funds (AFPs). For example, on the route linking the city of Santiago with the port of Valparaiso (120 km.) road advertising appears with the following information: “Your saving funded this highway, this highway will fund your pension”.

Each semester, the concessionaire must return to the pension fund in the form of amortizations and interests, a coupon bond. The concessionaire finances this repayment with tolls that drivers and trucks pay. With these resources, the AFPs shall pay the pensions to the same drivers who are paying the tolls and that list in the AFPs.

In the following tables, information on the identification of infrastructure deficit is presented in MILA countries, both by economic sector and by project.

**Table 3**  
**Deficit infrastructure in MILA countries by projects**  
**(Millions of US\$)**

Nº	Country	Project	Sponsor	Situation	Sector	Investm.
1	Chile	Casoducto Aqueatucama	Vinci	With feasibility	Energy / Gas / Water	15.000
2	Peru	Dorsal Network Fibra Óptica	Azteca	In construction	Elect./ Transmission / Telecom	420
3	Peru	Represa de Inambari y línea de transmisión,	CAF	Works started in 2015	Energy / Gas / Water	2.300
4	Colombia	Metro de Bogotá	IDU	In construction	Public works/ Ports / Logistics	3.600
5	Chile	Parque eólico Malleco	Malleco SPA	With feasibility	Elect./ Transmission / Telecom	500
6	Peru	Expansión del suministro y mejora del agua potable de Lima	Proinversión		Public works/ Ports / Logistics	400
7	Colombia	Corredor Bogotá - Buenaventura	DNP	In tender	Roads	1.800
8	Chile	Carretera Costanera -centro	MOP	In planning	Roads	1.980
9	Chile	Expansión del aeropuerto Arturo Merino Benítez	MOP		Airport	800
10	Chile	Línea 3 del Metro	Metro SA	In construction	Public works/ Ports / Logistics	1.005
11	Colombia	Oleoducto Bicentenario, fase 2 y 3		In construction	Energy / Gas / Water	5.800
12	Colombia	Expansión del puerto de Cartagena	Sociedad Portuaria Regional de Cartagena	Sociedad Portuaria Regional de Cartagena	Public works/ Ports / Logistics	500
13	Peru	Línea 3 del Metro de Lima	Proinversión		Public works/ Ports / Logistics	549
14	Colombia	Troncal Boyaca	IDU	Studies, design and procurement	Roads	350
15	Colombia	Carretera Río Magdalena	ANI	In tender	Roads	1.670
16	Colombia	Carretera Autopista Mar 1	ANI		Roads	732
17	Colombia	Planta de tratamiento agua	CAR & EAAB	Expansión Salitre	Energy / Gas / Water	4.787
18	Colombia	Carretera Autopista Mar2	ANI		Roads	805
19	Peru	Hidrovia Amazonica	Proinversión		Energy / Gas / Water	65

20	Peru	Southern Peruvian Pipeline	Proinversión	Energy / Gas / Water	2,800
21	Peru	Expansión Puerto Callao	APM Terminales	Public works/ Ports / Logistics	307
22	Mexico	Proyecto Mexico Conectado	SCT	Elect./ Transmission / Telecom.	270
23	Colombia	Autopista conexión Norte	ANI	Roads	475
24	Colombia	Expansión Puerto Buenaventura	Sociedad Puertearia de Buenaventura	Public works/ Ports / Logistics	180
25	Colombia	Aeropuerto región South west	ANI	Airport	121
26	Colombia	Expansión Aeropuerto Ernesto Cortissoz – Barranquilla	ANI	Airport	128
27	Chile	Expansión Plan 2X500 KV LT Cardones Polpatco	Interchile S.A.-	Elect./ Transmission / Telecom.	1,000
28	Mexico	Nuevo Aeropuerto Ciudad de Mexico	Aeropuertos y Servicios Auxiliares	Aeropuerto	4,000
29	Chile	Puerto de Gran Escala	PNDP	In planning	11
30	Colombia	Autopistas, Cartagena Dredging	Infovias	In planning	60
31	Mexico	Expansión Aeropuerto Lázaro Cárdenas	SCT/APM Terminales	Public works/ Ports / Logistics	300
32	Chile	Chile- Argentina – Chile Interconexión Electricidad	CAF	In feasibility	260
33	Colombia	Oleoducto del caribe	Olecar	Energy / Gas / Water	400
34	Mexico	Tren Mexico City – Toluca	SCT	Public works/ Ports / Logistics	2,900
35	Mexico	Reconfigurar Refinería de Tula	PEMEX	Energy / Gas / Water	4,000
36	Mexico	Autopista Atizapán – Atlacomulco	SCT	Roads	305
37	Mexico	Autopista Tuxpan – Tampico	Secretaria de comunicaciones y Transporte	Roads	400
38	Mexico	Gas Pipeline de Mexico	PEMEX	Energy / Gas / Water	700
<b>Total</b>					<b>61,680</b>

Source: 12° Latin American Infrastructure Leadership Forum, Colombia, June 2014.

**Table 4**  
**Deficit infrastructure in MILA countries by sector**  
**(Millions of US\$)**

Country	Roads	Energy / Gas / Water	Public works/ Ports / Logistics	Airport	Elect./ Trans- mission / Telecom.	Total
Chile	1.980	15.500	1.016	800	1.260	20.556
Peru	0	5.165	1.256	0	420	6.841
Colombia	5.832	10.987	4.340	249	0	21.408
Mexico	705	4.700	3.200	4.000	270	12.875
<b>Total</b>	<b>8.517</b>	<b>36.352</b>	<b>9.812</b>	<b>5.049</b>	<b>1.950</b>	<b>61.680</b>
<b>Part. by economic sector</b>	<b>14%</b>	<b>59%</b>	<b>16%</b>	<b>8%</b>	<b>3%</b>	<b>100%</b>

Source: 12° Latin American Infrastructure Leadership Forum, Colombia, June 2014.

## **1.6 Structuring of a fixed income mechanism for the mobilization of resources towards infrastructure projects**

### **The use of funds in infrastructure financing**

In 1997, the Ministry of Finance and the Ministry of Public Works, develop a manual called “Bond of Infrastructure”. That manual was prepared with the advice of a law firm specialist in capital market financing, and had the direct assistance of local risk rating agencies, strategic allies of Standard and Poor’s. This instrument generated the bases for all the issuance of bonds in Chile and was addressed to all the different agents and participants of the capital market, with the goal to allow long term financing of public infrastructures in local currency<sup>12</sup>.

Approximately 51% of investments in highways have been funded by debt structured issuances and placed in the Chilean stock market, since the start of the concession system in Chile in 1991, which is equivalent to approximately US\$ 4.450 million in infrastructure bonds that were placed by concessionaire companies of inter urban and urban road system. This percentage rises to 59% when comparing with total investments in this category for US\$ 7.511 million.

### **Infrastructure bonds**

Until December 2014, the Infrastructure Bonds issued by concessionaire companies of highways, reached a capital

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<sup>12</sup> The document represents the theoretical framework that was submitted by the President of the Republic and his ministers. Later, a delegation of more than 150 persons, made the formal launch of the new financing instrument in New York in July 1998.



balance in force of US\$ 4,094 million. The next table shows some infrastructure bond issuances where 100% is indexed in local currency and the terms vary between 20 and 30 years.

**Table 5**  
**Infrastructure bond issuance by highway concessionaires in Chile**  
**(Millions of US\$)**

Concessionaire	AFFs	Insurance company	Others	Total
Soc. Concesionaria Vespucio Norte Express S. A.	240	351	12	603
Soc. Concesionaria Autopista Central S. A.	264	241	0	505
Autopista del Maipo Soc. Concesionaria S. A.	133	224	86	442
Soc. Concesionaria Rutas del Pacífico S. A.	127	254	0	381
Soc. Concesionaria Costanera Norte S. A.	134	239	0	373
Ruta del Bosque Soc. Concesionaria S. A.	141	172	23	336
Ruta de la Araucanía Soc. Concesionaria S. A.	126	134	0	260
Talca Chillán Soc. Concesionaria S. A.	122	80	25	227
Soc. Concesionaria Autopista del Sol S. A.	122	86	0	208
Soc. Concesionaria Autopista Vespucio Sur S. A.	67	118	10	196
Soc. Concesionaria Autopista Los Libertadores S. A	43	123	4	170
SCL Terminal Aéreo de Santiago S. A. Soc. Concesionaria	87	15	10	112
Soc. Concesionaria Autopista Interportuaria S. A.	7	14	2	23
Soc. Concesionaria Melipilla S. A.	0	21	1	22
<b>Total</b>	<b>1.615</b>	<b>2.072</b>	<b>172</b>	<b>3.857</b>

Source: Hinojosa (2015).

It is also important to mention some features of the issuance of infrastructure bonds:

1. The first infrastructure bonds issuance in Chile was made by Talca Freeway - Chillan in November 1998, for an amount of US\$ 117 million.
2. Up to date, the largest amounts placed in the local market correspond to Vespucio Norte Express S.A Freeway, for a total of US\$ 603 million.
3. During the last years, trends in bond issues in domestic market show sustained growth.
4. Excepting Concesionaria Melipilla S.A., Feller Rate have assigned the “AAA” category to all works that have been issued infrastructure bonds.
5. The issuance of infrastructure bonds has a guarantee policy, irrevocable and unconditional, granted by an international insurance company, and related to a full payment on the dates established in the issuance contract.
6. Risk classifications to these companies, at assigned global scale by Standard and Poor’s, corresponds to a category higher than Chile’s sovereign risk classification “A-/+” at a global scale.
7. Terms: About 70% of infrastructure bond issuances are placed at equal terms or greater than 20 years, with a weighted average term per placement amount of 18,3 years.
8. Demand Structure: The long term temporary horizon, and under exposure risk of infrastructure bonds that have been placed in the local market, as well as the available funds source, have generated that institutional investors – Pension Fund Administrator and Life Insurance Companies–, have been the main claimants, representing

more than 90 % of total issued, while the remaining corresponds to other investors.

9. Placement rate and spread: The weighted average placement rate of infrastructure bonds placed in the local market reaches 7,1% and the weighted average Spread reaches 1 %.
10. Distinguishing the issuance terms, is observed that in the section corresponding to 20 years and more, are registered the greatest average margins and also the greatest demand for these bonds. In this section, insurance companies are the main claimants.

### **Weak institutionalality**

President Michelle Bachelet<sup>13</sup> indicated that infrastructure of public works in Chile is “quality life and strut for our productivity”, and announced that, after 20 years from the first public work awarded by concession, “it is time to perfect institutionalality”. This suggests, she affirmed, “the creation of the General Direction of Concessions, currently under discussion in the Congress”. She concluded the issue announcing new calls for tender and the creation of a new Infrastructure Fund.

The current Executive’s draft law that is processed by the Congress about institutionalality of the Concession System does not resolve if this institutionalality will continue administering contracts or, otherwise, will manage projects. This differentiation is essential, as the second option would oblige to completely change the structure and the capacity of the tax inspection (and also the dimension and functions of the MOP).

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<sup>13</sup> Presidential Message (May, 2015).

The current structure is incapable and weak to effectively and efficiently monitor and control the projects.

There are persistent failures in the concessions system of Chile. In public works, the poor execution of the Cau Cau Bridge in Valdivia, has revealed an inability of the Ministry of Public Works to monitor the implementation of projects and has also caused an international embarrassment.

### **Weak transparency**

1. Low quality in the standards, security costs in force and efficiency in road works awarded by concession.
2. Low or non-existent transparency of concession contracts.
3. Low competition to control the operation of concessions
4. Low or non-existent regulation about the passage of authorities from the public sector to the private sector (Non regulated conflict of interests).
5. Low or non-existent information of the calculation system of tolls that the persons pay and that allow to identify the transfer prices to other corporations, the operational and financial cost and profitability of the investment.
6. Low or non-existent information for indexation of tariffs via polynomials versus the collection of fixed porches, this is generating that each user is paying more kilometers than those effectively used, as occur in the general system of highway rates (payment per kilometer used).

## **Transfer prices**

Former president Ricardo Lagos<sup>14</sup>, who voluntarily has assumed the role of father of the system of concessions that governs the country, with the subtitle “concessions have been misunderstood”, indicated that “it is not true that highways are delivered to the private sector; conversely, through concessions, the State has been able to create a wealth of 25 billion of dollars in its favor, that did not have 20 years ago”.

Both presidents, Lagos and Bachellet, are right. It is an investment effort that possibly would have not been possible with the current budget of the State, given the low tax burden existing in the country. But there is a question of how much of that wealth is transferred as welfare or quality to the citizens. On that matter, both presidents omitted key precedents.

## **Payment from private to public**

From the beginning was contemplated the existence of an infrastructure fund of public use, coming from the payment made by the concessionaires for the existing infrastructure at the moment to tender. Everybody knows that the tenders were not for new work, for example Route 5, but in their majority they were for improvement of standards of already built work; that implied a national and fiscal effort of several billions of dollars. The payment received should go to this infrastructure fund for new works in charge of the State.

The Fund was never known, nobody evaluated its results or explained where were applied the resources. In any case, it was

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<sup>14</sup> Sunday magazine El Mercurio newspaper, 15 points for a common view.

not in infrastructure, and very discreetly everything passed to the Treasury of the State to show a structural surplus.

New projects:

- Américo Vespucio Oriente.
- The La Fruta route
- Nahuelbuta highway.

They are not new works, and something will be received for the existing infrastructure. If it is tendered as advertised, there will be new tolls, in addition to what is paid for the new infrastructure fund, that is, toll of what is already built and paid.

### **Prices transfer: Payment from public to private**

The structural inability of the state to technically and efficiently cover the projects.

1. Advisory to tax inspection: Is an externalized unit of concessions from the Ministry of Public Works, composed by private, consultancy and/or engineering companies that act indistinctly with the public and private sector, formulate tender basis, costs studies and feasibility of investments. It is the weakest transparency factor.
2. Weak formulation of infrastructure projects drives the State to make complementary disbursements, and with the absence of systematic solutions, they end up being a generation of new projects funded by the State's resources.

Sometimes, operators are or generate the problem that is intended to solve to obtain the concession award<sup>15</sup>.

### **Prices transfer; payment from persons to private**

Then, from an existing infrastructure which is already paid, the persons shall pay an incremental that reduces its marginal profit and increases its marginal cost when contributing to the formation of a new infrastructure fund between the private sector and the State (nameless, corporatized and without beneficiaries). No tolls will become cheaper and the delta of welfare and saving will be coopted by the concessionaire, and the State ¿something of accumulated wealth will return to poor citizens?

While the money from the pension funds is own by the big companies, they elect directors, define corporate strategies, hire consultancies and prioritize projects. They should comply with labor and environmental regulations, and if they are not adequately controlled, they break the law with their resources, and they do this without asking you.

We can deduce, consequently, that the owners of Pension Funds, are the owners of companies such as Cencosud (16,55%), Colbún (17,63%), Endesa (15,33%), Enersis (12,69%) o CMPC (11,58%).

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<sup>15</sup> Observe the so called Quilicura knot in Américo Vespucio Norte, Central Highway and Route 5, that will force the State and, more directly the citizens, to a disbursement of more than five hundred millions of dollars. The lack of vision on the works that converge in the knot caused the problem, and the least transparency requirement is to tender it. Any other course of action becomes suspicious, as far as it is recognized as an increase of work.



## **1.7 Conclusions and recommendations**

1. Concessions in the bench of the accused<sup>16</sup>. In 20 years of operation, the system had a great progress in highway infrastructure and other areas.
2. To who serves the AFP business?

With the funds that manage and invest the AFPs, a Chilean productive, monoexporter, rentier –and with high levels of concentration– matrix was consolidated. A matrix based on paying low salaries –50% workers earn less than US\$ 450) and have high levels of indebtedness –11 million of indebted Chileans and 4 million defaulters– with a low marginal propensity to save. This matrix enables to obtain profitability on a dreamed equity (over 20%) for most productive sectors, such as banking, mining and AFPs. But nevertheless, is a matrix based on collusion and tax evasion; which funds political campaigns transversely.

The situation of pensions in Chile no longer works. We are living a deep crisis that unfortunately will be worse in the next years if we continue traveling along the same route.

### **The system of forced private savings (individual capitalization)**

1. 1.120.000 old age pensions, disability and survival are paid, which average amount is just US\$ 300 (\$205.000 Chilean pesos) and with the solidarity State pension contribution reaches US\$ 322 (\$219.000 Chilean pesos).
2. 336.000 old age pensions by age are paid, AFP-programmed retirement. 91% is “below” US\$ 229

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<sup>16</sup> Source: El Mostrador June 13, 2016.

(\$156.000 Chilean pesos), which is equivalent to 62% of the national minimum salary.

A real social disaster, considering that this method is the most massive in relation to the type of pensions paid by the private system.

### **¿What will happen in the next 10 years? The panorama is even darker**

1. 72% of affiliates that have between 60 and 65 years –they are on the verge of retiring legally– accumulate less than US\$ 44.000 (\$30 million of Chilean pesos) in their individual account; therefore, they could self-finance pensions lower than US\$ 220 (\$150.000 Chilean pesos) monthly.
2. The Commission created by President Bachelet, that studied the pensions system (Bravo Commission), calculated that half of the people to retire between 2025 and 2035 and that have contributed between 25 and 33 years exclusively in the AFPs, will have a replacement rate less than 22%.
3. If you in the last 10 years of your working life registered taxable remuneration of US\$ 735 (\$500.000 Chilean pesos), you may only self-finance a pension “lower” than US\$ 161 (\$110.000 Chilean pesos).
4. In other words, the fault is not of the AFPs, but of the workers, the demography and the parameters used by the system since 1981 –low quotation rate and a legal age of low and differentiated retirement–.: the problem is that salaries of Chilean workers are low, many security gaps are recorded, little is quoted and life expectancy increased.

5. On the one hand, the slogan of the AFPs argues that 70% of pensions they pay is explained by the profitability they generate through its investment policy. This means that, without this profitability, 91% of old age pensions in Chile would be lower than US\$ 69 (\$47.000 Chilean pesos).
6. Could it be that perhaps this is the level of pension that corresponds to us, since we live in a country that has a per capita GDP of US \$ 5,000 and we had not heard about it?
7. In spite of low salaries, the gaps and quotation rate slowdown, as of March 2016 the AFPs registered annual income of US\$ 4.560 MM (\$ 3,1 billion of Chilean pesos) for the concept of quotations of workers mainly and, in a lesser extent, by contributions of the Treasury to improve low pensions. In the same year, an expenditure of US\$ 4.100 million was registered (\$2,8 billion of Chilean pesos) to pay pensions.
8. Relation between income and expenses has been the constant during the last 25 years, the accumulated figures indicate that US\$ 163.000 billion (\$110 billion of Chilean pesos) have entered and that US\$ 44 billion (\$30 billion of Chilean pesos) have been spent on pensions. Is worth to say, if Chile would have had a System of Distribution in that period –that is, a system where the objective is to pay enough pensions based on the relation between income and expenses thereto–, paid pensions at least might have been the double; remaining a significant surplus to generate profitability in a reserve fund of pensions.
9. In relation to the monthly flows, when we only consider the quotations of workers, what we observe is the following: month to month US\$ 600 billion (\$408.000 million of Chilean pesos) enter to the AFPs and only US\$ 290 billion (\$200.000 million of Chilean pesos) are paid in pensions.

10. Something stinks in Denmark. The AFPs are not complying the central objective that any pension system in the world should comply: pay enough pensions to live a dignified old age. However, the income collected each month is 2,5 times greater than those addressed to pay the pensions.
11. What is not counted, it is that the real objective of this system has little to do with pensions. The quotations of workers, that manage and invest the AFPs, have become the main source of funds for fixed income securities. The infrastructure bond, property and control of important companies are part of a Chilean economic model.
12. The AFPs invest more than US\$ 47.000 million in 10 banks that operate in Chile. In this way –and no one has asked them–, Chilean workers, through their quotes, end up funding the banks of the Luksic, Matte, Yarur and Saieh groups or multinational groups (see table).
13. Paradoxically, these same workers when they ask for a consumer loan to these banks, they must pay annual interest rates that can exceed 30% and even 40%.

**Table 6**  
**List of banks**

<b>Bank</b>	<b>Owner</b>	<b>Total (Chilean pesos)</b>	<b>Total (US\$)</b>
Banco de Chile	Luksic	\$ 3.996.189.830.000	US\$ 6.023.800.000
Banco Estado	Chile	\$ 3.433.938.040.000	US\$ 5.176.270.000
Santander	Group Santander Spain	\$ 3.324.450.340.000	US\$ 5.011.230.000
Itaú Corpbanca	Itaú Brasil y Saieh	\$ 2.440.536.670.000	US\$ 3.678.830.000
Bci	Yarur	\$ 2.080.797.110.000	US\$ 3.136.560.000
Scotiabank	Group Scotiabank Canada	\$ 1.814.099.650.000	US\$ 2.734.550.000
BBVA	Group BBVA Spain	\$ 1.632.580.820.000	US\$ 2.460.930.000
Banco Bice	Matte	\$ 1.002.531.510.000	US\$ 1.511.200.000
Banco Security	Silva/Peñafiel	\$ 713.766.480.000	US\$ 1.075.920.000
Banco Consorcio	Fernández León/Garcés	\$ 182.521.610.000	US\$ 275.130.000
<b>Total 10 banks</b>		<b>\$ 20.621.412.060.000</b>	<b>US\$ 31.084.420.000</b>

Source: Fundación SOL.

**Will Luksic, Matte or Paulmann groups give up this permanent injection of capital, which is captive and low-cost, that supports through contributions from the workers through the AFPs? Will they give this tremendous amount of power that gives them the financing of pensions?**

The history and the essence of capitalism say no. When capital gets certain privileges, soon they are presented as acquired rights and naturalize them by using the apparatus which controls and produces the superstructure –means of communication, advertising, centers of thought, consultants on request–, like a constituent part of cultural heritage of society. “There is no other possible way, the only viable system are the AFPs”. Although in 95% of the world's countries there is a pure or mixed distribution system, they will affirm, without citing any academic reference, that they are “broke”.

Therefore, before any threat that may arise and that jeopardizes the continuity, the message will be the same as always. What is at stake in the discussion on the existence of the AFP, is the economic model, the current pattern of accumulation and; in this sense, we must bear in mind that the average annual return over the last 20 years for company owners of Pension Fund Administrators has been 26%, this in addition to the high level of profits earned by the AFPs for their owners, mostly American enterprises, which in 2015 reached \$ 1,558 million daily.

**Can we expect something of political coalitions that have governed Chile in recent decades?**

Very difficult, as its hold on power has depended on the financing of the same economic groups favored by the support

provided by AFPs. Therefore, the only sustainable path, as it always has been in the history of Chile, is one that depends on the organization and mobilization of existing workers, future workers and pensioners who earn miserable pensions; all of those to whom the AFPs do not serve and never will, to have a dignified old age. Many of them will begin their march on Sunday July 24 at 11:00 pm, from Plaza Italia to La Moneda in Santiago and in various regions of the country, with a new air of hope.