



# Critical Success Factors in Large Scale Transport Infrastructure Projects

## Transport Infrastructure Concessions: Chilean Experience

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March 26th, 2007



GOBIERNO DE CHILE  
**MOP**  
MINISTERIO DE OBRAS PÚBLICAS

# Background



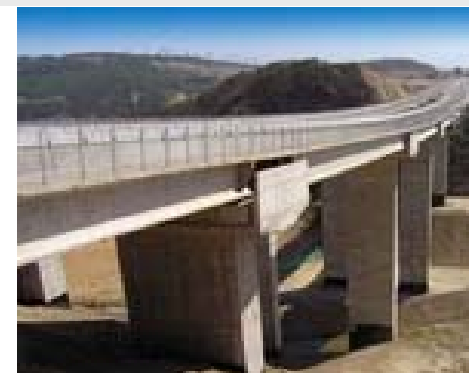
## Infrastructure Concessions in Chile

- In 1995 the economic losses due to inadequate infrastructure were estimated US\$1.5 billion annually, causing bottlenecks in an economy growing 7% per year.
- The Ministry of Public Works estimated that total infrastructure investment needs until 2005 would reach more than US\$11 billion to sustain the economic growth rate
- The goal in 1995 was to triple the investment in new infrastructure projects from US\$500 million to over US\$ 1,5 billion per year.
- Concessions program allowed to reduce the infrastructure deficit in the short term. This would not have been possible using only public funds.
- The program introduced maintenance standards
- Program goal was to produce market discipline, since equity investors should face completion and demand risk

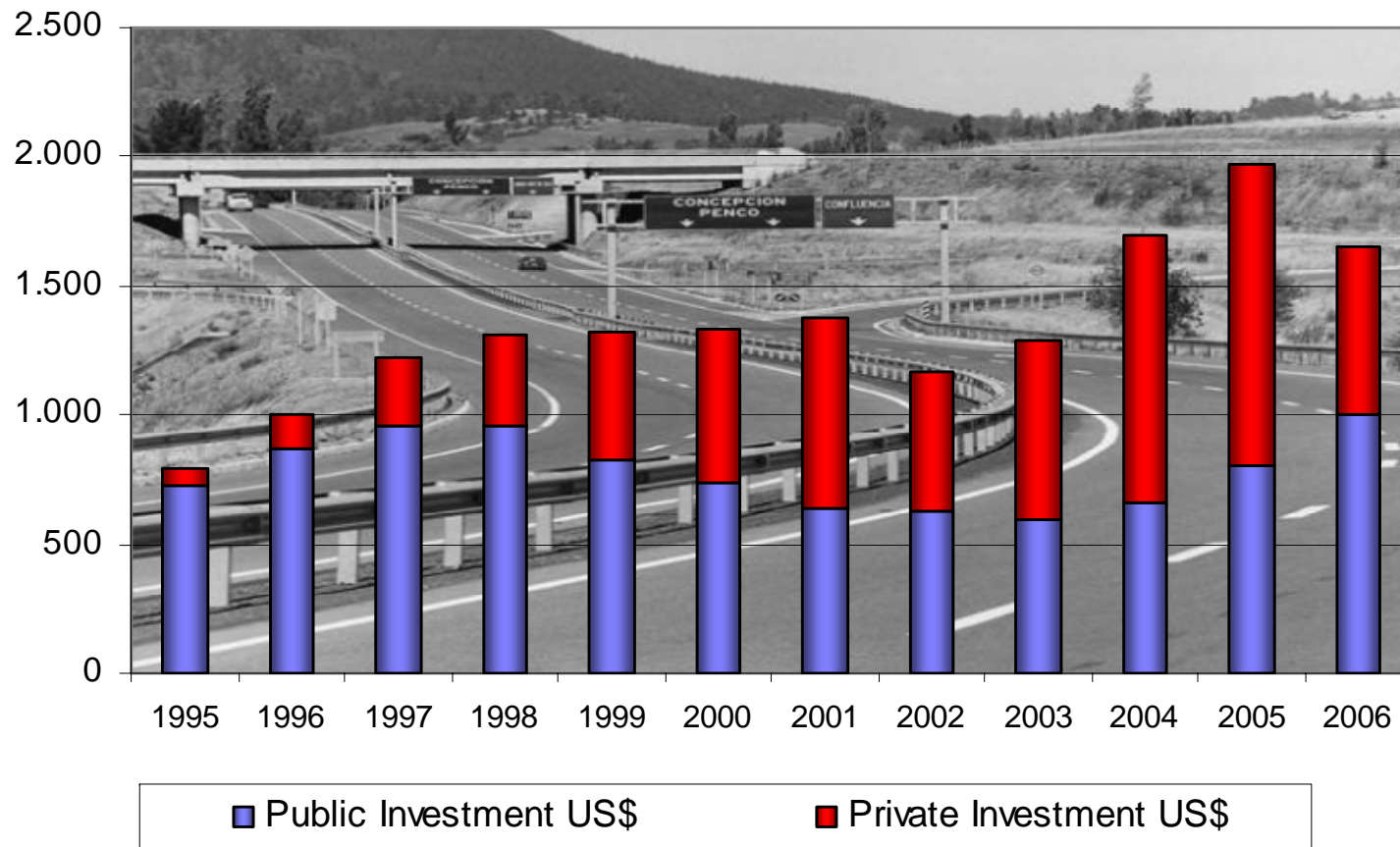
## Concessions Projects Awarded 1993-2005

Year	Number of Projects	Total investment committed MMUS\$
1993	1	50
1994	2	280
1995	6	430
1996	3	750
1997	7	1.400
1998	3	1.300
1999	3	580
2000	2	650
2001	5	1.050
2002	3	300
2003	5	280
2004	7	800
2005	3	130

**TOTAL 1993-2005 : US\$ 8 Billions**



**MOP Infraestructre Investment (US\$ millions )**



## Concessions Waves

- 1991-1994 **First concessions: Isolated Projects**
  - Less than US\$ 400 million total investment
- 1995-2001 **First programs:  
Interurban Highways and Airports**
  - Main North-South highway, 1500 Km of double lane (US\$2,7 billion total investment)
  - 8 transversal high standard routes (US\$ 1,1 billion total investment)
  - 10 airports including Santiago International airport (US\$ 390 million total investment)
- 2001-2004 **Urban Highways Program**
  - 4 urban highways in Santiago (US\$ 2,5 billion total investment)
  - First fully integrated electronic free flow toll system for urban road highways
- 2004 - **Second generation programs**
  - 5 Prisons (US\$ 240 million investment)
  - Public buildings (US\$ 270 million investment)
  - Transport Infrastructure (US\$ 170 million investment)



## Concessions Waves Summary

- 50 concessions awarded (120 companies participating)
- One bankruptcy
- Two early termination by mutual agreement
- US\$ 8 billion of total investment (US\$ 6 billion private and US\$ 2 billion public)
- Fiscal contingency, due to minimum traffic guarantee, less than US\$ 260 million according to World Bank independent auditing.
- All concessions were renegotiated mainly to include additional works or compensate unforeseen events
- US\$ 1,7 billion financing additional works (non-budgetary financing)



## Concessions Waves Summary

- US\$ 4 billion take out financing via domestic bond issues
- Interest rate dropped from 8,8% real (150 basis points over Central Bank notes) to 3,04% (50 basis points over Central Bank notes for take out financing).
- US\$ 0,8 billion bond issuance at international market (US\$ denominated)
- US\$ 1,2 billion in long term bank financing
- 8 concessions did not reach agreement during negotiations with the government and had to be settled by arbitration. The government paid after arbitration and conciliation processes around US\$ 200 million (2.3% of total cost).



Sociedad	Fecha de Inscripción	Monto en Miles de UF	Tasa de Emisión (%)	Plazo de Vencimiento (años)	Monto en Miles de USD\$
Talca Chillán Soc. Concesionaria	10.11.98	500,00	8,15	9,0	16.806
Talca Chillán Soc. Concesionaria	10.11.98	4.500,00	8,15	9,0	151.250
Ruta de la Araucanía	29.06.00	370,00	7,30	20,0	12.436
Autopista del Bosque				20,0	236.286
Autopista del Bosque				20,00	252.083
Soc. Conc. Autopista del Sol				16,00	116.294
Soc. Conc. Autopista del Sol				16,00	29.242
Soc. Conc. Autopista del Sol				16,00	33.275
Soc. Conc. Autopista del Sol	08.03.02	245,00	6,00	16,00	8.235
Soc. Conc. Rutas del Pacífico	14.03.02	150,00	5,50	12,00	5.042
Soc. Conc. Rutas del Pacífico	14.03.02	850,00	5,50	12,00	28.569
Soc. Conc. Rutas del Pacífico	14.03.02	499,00	5,80	23,00	16.772
Soc. Conc. Rutas del Pacífico	14.03.02	10.500,00	5,80	23,00	352.917
Soc. Conc. Rutas del Pacífico	14.03.02	1,00	5,80	23,00	34
Soc. Conc. Autopista Los Libertadores				8,00	14.150
Soc. Conc. Autopista Los Libertadores				8,00	39.325
Soc. Conc. Autopista Los Libertadores				23,00	17.646
Soc. Conc. Autopista Los Libertadores				23,00	52.433
Sociedad Concesionaria Melipilla				21,66	22.183
Soc. Concesionaria Autopista Central				23,00	436.944
Soc. Concesionaria Autopista Central S.A	11.11.03	0,50	5,30	23,00	17
Soc. Concesionaria Costanera Norte S.A	12.11.03	340,00	5,00	13,00	11.428
Soc. Concesionaria Costanera Norte S.A	12.11.03	1.560,00	5,00	13,00	52.433
Soc. Concesionaria Costanera Norte S.A	12.11.03	700,00	5,50	21,50	23.528
Soc. Concesionaria Costanera Norte S.A	12.11.03	6.900,00	5,50	21,50	231.917
Soc. Conc. Vespucio Norte Express S.A.	09.06.04	17.000,00	5,30	24,50	571.389
Soc. Conc. Vespucio Norte Express				24,50	17
Autopista del Maipo Soc. Conc.				21,00	194.944
Autopista del Maipo Soc. Conc.				21,00	17
Soc. Conc. Autopista Vespucio				24,00	184.861
Soc. Conc. Autopista Vespucio				24,00	17
SCL Terminal Aéreo Santiago S.A.				15,00	104.194
SCL Terminal Aéreo Santiago S.A. Soc. Conc.				15,00	34
Talca Chillán Soc. Concesionaria	21.06.05	5.650,00	2,75	15,00	189.903
Talca Chillán Soc. Concesionaria	21.06.05	0,50	2,75	15,00	17
Sociedad Concesionaria Grupo N° 3 de Cárceles	12.08.05	3.648,00	3,00	11,50	122.613
Sociedad Concesionaria Grupo N° 3 de Cárceles	12.08.05	483,00	4,00	11,50	16.234
Soc. Concesionaria Autopista Interportuaria S.A.	27.12.05	990	4,25	24,50	33.275
Soc. Conc. Autopista del Sol	19.05.06	970	4,00	12,00	32.603
Soc. Conc. Autopista del Sol	19.05.06	0,1	4,00	12,00	3
<b>Total</b>		<b>106.975,50</b>			<b>3.628.172</b>

**Bond issues in local market over US\$ 4 billions**

**Bond issues at international markets over US\$ 890 millions**

**Bank loans over US\$ 1.2 billions**

## Summary of results

- 50 concessions allocated between 1992 and 2006
- US\$ 8 billion of total investment (US\$ 6 billion private and US\$ 2 billion public)
- High technological standard for transport concessions



# Legal Framework



## Concessions Law Main Aspects

- 1991: *Ley N° 19.068*
  - Regulation extended to every type of public works (build - maintenance - operation)
  - Legal certainty from reduced regulatory powers
  - Acceptance of private investment initiatives, rewarded with bonus points to the initiatives owners
  - Investment stimulation through fixed term contract for building and operation (increasing revenues for efficient concessionaries), allowing subsidies and state guaranties plus allowing to pledge future incomes of the concessionaire
  - Creation of an ad-hoc dispute resolution system (Conciliatory Commission integrated by representative of both parties)

## Improvements in Legal Framework

- 1996: *Ley N° 19.640*
  - Enhanced mechanism for private initiatives, and broadening of the legal concept of “public works”
  - New rules on compensation payment of works adjustment, reduce triggers for contract termination, and increased faculties for the Conciliatory Commission (significantly limiting discretionary power of MOP)
  - Rules to curb the elusion of tariff payment and establishment of compensation charges in favor to the concessionaire
  - Improved protection of concessionaire’s financing entities: provision of special rights to pledge creditors by providing creditors with preference rights in bankruptcy procedures

## Legal Changes to Financial Market

- Changes to institutional investors to facilitate them their investment in infrastructure concessions instruments
  - Development of new investment vehicles: Equity and debt instruments
  - Broaden investment limits for investing in infrastructure concessions for pension funds and life insurance companies
- Changes to commercial banks provisions to facilitate their finance of concessions projects (treatment as of real state mortgage)

# Contract issues



## Contractual risk allocation

- Traffic risk mitigation mechanisms: minimum revenue guarantee. The goal was to reduce the macroeconomic risk partially protecting creditors
- The guarantee covered 75% of debt, was optional in many cases and the concessionaire has to pay for it.
- Revenue sharing scheme were introduce together with revenue guaranties.
- Exchange rate guarantees were introduce after the Asian crisis



- Public bidding without pre qualifications of bidders
- Until 1997: contracts were awarded on the bases of minimum tariff with a cap or a subsidy, without guaranties
- From 1997: contracts were (i) mainly awarded by minimum subsidy or maximal payment to the State, considering fixed tariff and minimum revenue guarantee (in urban transport concessions) and (ii) minimum subsidy or time period, fixed uniform tariff and revenue guarantee in case of interurban roads
- **In 2002: renegotiation process to sell minimum revenue guarantee to existing concessionaries**
- From 2004: With exogenous demand is preferred Least Present Value of Income as award variable, with no guaranties when it is possible

## Critical Aspects of Success

- Stable macroeconomic climate
- Risk allocation system
- Dispute Resolution Mechanism (not judiciary)
- Significant competition
- Development of financing mechanism in local currency



- Significant renegotiation of contracts (100%), resulting in additional investment over 20% from initial bid
- Extensive litigation
- Ex-post unforeseen environmental problems, that paralyzed works construction with large mitigation costs
- Future fiscal budgets are compromised (guarantees, subsidies, additional works payments), thus generating passive contingencies and reduced fiscal discipline
- Concession decision of public works bias by budget rigidities
- High hold-up risk due to difficulties in canceling opportunistic concessionaires
- Threat of works postponement used as a negotiating tool by concessionaires to improve their contract

# Future of the Concession System



- Increase economic efficiency of project design and selection
- Improve competitiveness of auction processes
- Reduce contract renegotiation
- Avoid Hold-Up situations
- Improve dispute resolution mechanism
- Reduce risk of regulatory capture



## Increase efficiency of project design and selection

- Concessions board: Ministerial board, incorporating Housing, Transport, Treasury and Planning ministers, to coordinate the national infrastructure development policy
- Environmental studies carried out by the concessions agency to identify design conditions
- Reduction of revenue guarantees
- Preference for Least Present Value of Income as auction variable

## Improve competitiveness of auction process

- Prequalification of potential bidders
- Standardization of service standards among potential bidders prior to bidding proposal
- Environmental studies prior to bidding to reduce design risk
- Private initiatives: assessed as part of the infrastructure development plan and engineering studies carried out by prequalified bidders

## Reduce contract renegotiation

- Focus on service standards rather than inputs (Performance Based Contracts): explicit Service Levels
- Independent regulatory agency to enforce service levels
- Forced bidding for additional works
- Two-tier system for second generation concessions: infrastructure and soft services
- Call option for concessions
- Contract renegotiation overseen by ministerial board and regulatory agency to maintain economic equilibrium

## Avoid Hold-Up situations

- Open possibility of re-purchasing concession
- Reduce bidding requirements after concession cancellation
- Avoid stop of works by arbitral commission
- Improve contract enforcement mechanism (no limit on money sanctions)

## Improve dispute resolution mechanism

- Conciliation and arbitral commission chosen from a list composed by specialists selected by the Competition Tribunal
- Arbitrage process is maintained, but decision has to be fully according contract and law (not in "conscience")
- Deadlines for every step in the process

## Reduce risk of regulatory capture

- Transparency: Internet platform for easy access to public information: concessions program, project contracts, additional works, dispute resolution processes
- Strengthen infrastructure planning and policy decision capability from the perspective of economic efficiency (Big infrastructure project not a goal in itself)

## Other ministerial changes

- Improve infrastructure integral planning
- Enhance service levels requirements
- Develop standard contract models
- Improve project management





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Thank You

