Behavioral Regulatory Agencies

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Cargèse, May 2017

Outline

- Intoductory overview and motivation.
- Literature Review: behavioral economics and regulatory agencies.
- The commitment problem and the strategic delegation solution with bounded rationality and non-standard preferences.
- Illustrative Cases: 1) Transantiago in Chile, and 2) agency structure in the EU.
- Concluding thoughts and research ideas.

Overview

General De Gaulle (Septembre 1963, quoted in Landier and Thesmar, 2010):

"L'essentiel (...), ce n'est pas ce que peuvent penser le comité Gustave, le comité Théodule ou le comité Hyppolyte. L'essentiel pour le général De Gaulle, président de la République française, c'est ce qui est utile au peuple français, ce que sent, ce que veut le peuple français. J'ai conscience de l'avoir discerné depuis bientôt un quart de siècle. Et je suis résolu, puisque j'en ai encore la force, à continuer de le faire"

Overview and Motivation

- Behavioral economics takes into account bounded rationality and non-standard preferences in judgment, consumption, production, finance and decision making in general.
- It would be **an inconsistency** to assume bounded rationality and non-standard preferences in a market context and not in a context of policy choice.
- Most policy prescriptions usually assume irrational public and rational policy makers who regulate, perform cost-benefit analysis, or design "nudges" to make free individual decisions compatible with designing appropriate choice architecture.
- But like any policy, nudges are affected by the **commitment problem**, which in regulation and beyond is a very fundamental problem of our democracies, probably exacerbated in times of Twitter.

Overview and Motivation

- The proponents of nudges, very successful in influencing policy in the US (Cass Sunstein as "regulatory czar" in the first Obama administration) and the UK (Behavioral Insights Team in 10 Downing Street with Cameron).
- But there is some anecdotal evidence of the difficulties and paradoxes of expert decision making when there is no immediate feedback:
  1. Chile: the cases of Transantiago and recent expert report on corruption.
  2. Central bankers and financial regulators in the bubble that preceded the last global financial crisis.
  3. Literature on **referees** in soccer: the determinants of home field bias show that the bias exists, can be reduced (professionalization, technology, transparency because of more and better TV), but to some extent persists (or are regulators like **managers** -largely irrelevant but very salient, according to Szymanski?).

Overview and Motivation

- Difficulties of reconciling populist tendencies of democracy with sound long run policies (commitment problems stressed by Spiller and other NIE authors) are aggravated by some biases such as availability.
- But technocratic solutions have weak democratic support and are not free of mistakes and specific and common biases.
- Perhaps this tension explains the great diversity of institutions in infrastructure industries: public and private ownership, cooperatives, independent regulators, special districts, detailed legislation...
- Tasic and some "behavioral" authors in financial regulation and in behavioral political economy have an anti-interventionist flavour similar to public choice.

Overview and Motivation

- **Public choice** criticized the asymmetry of assumptions of...
- ...traditional **welfare economics (selfish agents in the market, benevolent policy-makers)**, and evolved from deep skepticism on the role of government...
- into a more eclectic **political economy**;
- **behavioral public choice** may evolve from the cinicism of portraying hopeless policy-makers..
- ...into a more agnostic **behavioral political economy**, where all agents share different forms of bounded rationality and institutions should be designed (or would be expected to evolve) to adapt to these in each case, echoing the concern of Coase/Williamson/Dixit/Ostrom/Duflo for transaction costs and the details of policy- or community-making.

Overview and Motivation

- Public interest regulation (the regulatory version of welfare economics) empirically wrong but capture theory (the regulatory version of public choice) not completely satisfactory (chapter on capture in the last book by Akerlof and Shiller, "Phishing for Phools")
- In the rest of the presentation and the paper:
  1. Review of the literature in the intersection between regulatory economics and the institutions of regulation.
  2. Revisiting the commitment problem in regulation with behavioral insights.
  3. Revisiting empirical and policy evidence, including cases.
  4. Conclusions and ideas for future research. Main message: regulatory agencies cannot solve the commitment problem by themselves alone, but can be part of a regulatory package that alleviates biases and mobilizes intrinsic preferences of regulators, policy-makers and citizens.

Literature Review

- Behavioral Economics in general and in IO and Public Economics.
- Societies that solve or alleviate social dilemmas: Putterman, Ostrom, Sen,.. (but there are community imperfections). Democratic quality as a problem of private provision of a public good (such as voting or demanding an impartial media...).
- Nudges (Thaler/Sunstein and applications to finance, water, energy...).
- Regulation and privatization: public interest and capture (from Stigler to Grossman-Helpman) theories, committees vs uni-personal regulators, non-welfare components of the discontent with privatization (Straub/Martimort, Florio, di Tella).
- "Behavioral" regulation: Joskow, Leaver, Kovacic, Henisz, di Tella.

Literature Review

Economics in General	**Regulatory Economics**
Traditional Welfare Economics	Public Interest theory
Public Choice	Capture Theory
Assymetric Inf. and Transaction Costs	New Ecs. of regulation and NIE
Behavioral Economics	Nudges
Behavioral Political Economy	Behavioral Regulators

Behavioral Regulation

- Behavioural Public economics takes into account the possibility of individual "failure" (in addition to market and government failure): consumers' bounded rationality (as in Spiegler, 2011), firms' bounded rationality (as in Armstrong and Huck, 2010 and the tradition of Simon, Cyert and March) and regulators' bounded rationality.
- In the field of microeconomic regulation, after Joskow's PhD thesis ("A Behavioral Theory of Public Utility Regulation") in the early 1970s there hasn´t been much academic formal work in the economics literature (as opposed to the social psychology or legal literatures) on behavioral microeconomic regulation until Leaver (2009) and Cooper and Kovacic (2012).
- Joskow (1972): "Commissions appear to have the most rudimentary understanding of the relationship between the return is permitted to earn and the operational objectives the Commission wishes to achieve. The ability of the Commission to scientifically evaluate the rate of return requests made by the firms is therefore probably quite limited."

Behavioral regulation

- Joskow (1974): the objectives of regulatory commissions are more complex than those of firms (as in general in the public sector) and their status are quite vague. In practice, regulatory agencies seek to minimize conflict and criticism.
- The regulatory agency has evolved a structure which satisfactorily balances the conflicting pressures from the external environment. When an equilibrium with the environment breaks down, agencies enter into innovation mode. In the US since WWII, the primary concern of regulatory commissions had been to keep nominal prices from increasing.
- Since Joskow's thesis, regulatory agencies have been studied as commitment devices in the presence of sunk investments or the ratchet effect, or as mechanisms to alleviate information asymmetries. They were assumed to behave rationally, according to some objective function or monetary reward.

The literature on experts

- The role of regulators as correcting information asymmetries is consistent with the view that regulatory agencies should be staffed by experts.
- Experts may provide technical knowledge in complex matters (risk, technologies, finance).
- But they are not free from empirically documented biases (Landier and Thesmar, Slovic, literature on judges, sports' referees and physicians): fear of ostracism (conformity), oveconfidence (confirmation bias, cultural views), availability, narrow frames, tunnel vision.

The literature on experts

- "System II" reasoning (slow, deliberative, see Kahneman's "Thinking Fast and Slow") is also vulnerable to biases: experts tend to deploy "defense motivation", ie deliberate, calculating and methodical analysis to support beliefs taken a priori.
- Narrow frames yield inconsistencies derived from uncoordinated regulation. Kahneman: in the US, the fine for a "serious violation" of the regulations concerning worker safety is capped at $7000, while a violation of the Wild Bird Conservation Act can result in a fine of up to $25000.

The literature on experts

- Experts often disagree. It could be because of inconclusive or scant evidence.
- But they disagree in "suspicious" clusters: gender, professsions (eg Central Bankers), food (parole judges in Israel tend to deny parole when they are hungry, Danziger et al., 2011)...
- Some personal characteristics of experts determine the extent to which they make mistakes (Tetlock: "foxes" better than "hedgehogs"; role of experience and tenure).
- Some characteristics of the tasks of experts are also more or less conducive to mistakes (help of technology makes meteorology more predictable than clinical psychology).

Cooper and Kovacic Model

- Regulator's Objective Function:
  $U = S - \frac{\theta}{2}\left(\pi_i^R - \pi^*\right)^2 - \frac{(1-\theta)}{2}\phi\left(\pi^{os} - \pi_i^R\right)^2$
- where π_i^R is the regulator's decision, π^* is the optimal long run decision as perceived by the regulator and π^{os} is the politically expedient (populist) policy desired by political principals that cater to public opinion.
- $\phi(\cdot)$ translates distance from the politically expedient policy into some sort of punishment.
- S is the level of utility that would be realized if $\pi_i^R = \pi^* = \pi^{os}$.
- Solving the First Order Condition: $\pi_i^R = \lambda\left(\theta\pi^* + (1-\theta)\phi\pi^{os}\right)$ where $\lambda = \frac{1}{\theta+(1-\theta)\phi}$. The regulator will adopt the optimal policy if either she places no weight on political rewards ($\theta = 1$) or if the politician is unable to translate public opinion discontent into punishment for the regulator.

Flawed Heuristics and Myopia

- If regulators suffer from the biases that plague consumers, they are likely to use flawed heuristics -or mental shortcuts- to estimate the optimal long-run policy choice.
- Examples of flawed heuristics: availability (being overinfluenced by recent salient events), representativeness (ignore baseline probabilities and sample sizes and be carried away by stereotypes).
- Flawed heuristics, confirmation bias and myopia likely to be in favor of more politically expedient policies $\widehat{\pi}^* = \alpha \pi^*$ with $\alpha \geq 1$.
- Consequently, the regulator chooses $\widetilde{\pi}_i^R = \lambda \left(\theta \widehat{\pi}^* + (1 - \theta) \phi \pi^{os} \right)$

Flawed Heuristics and Myopia

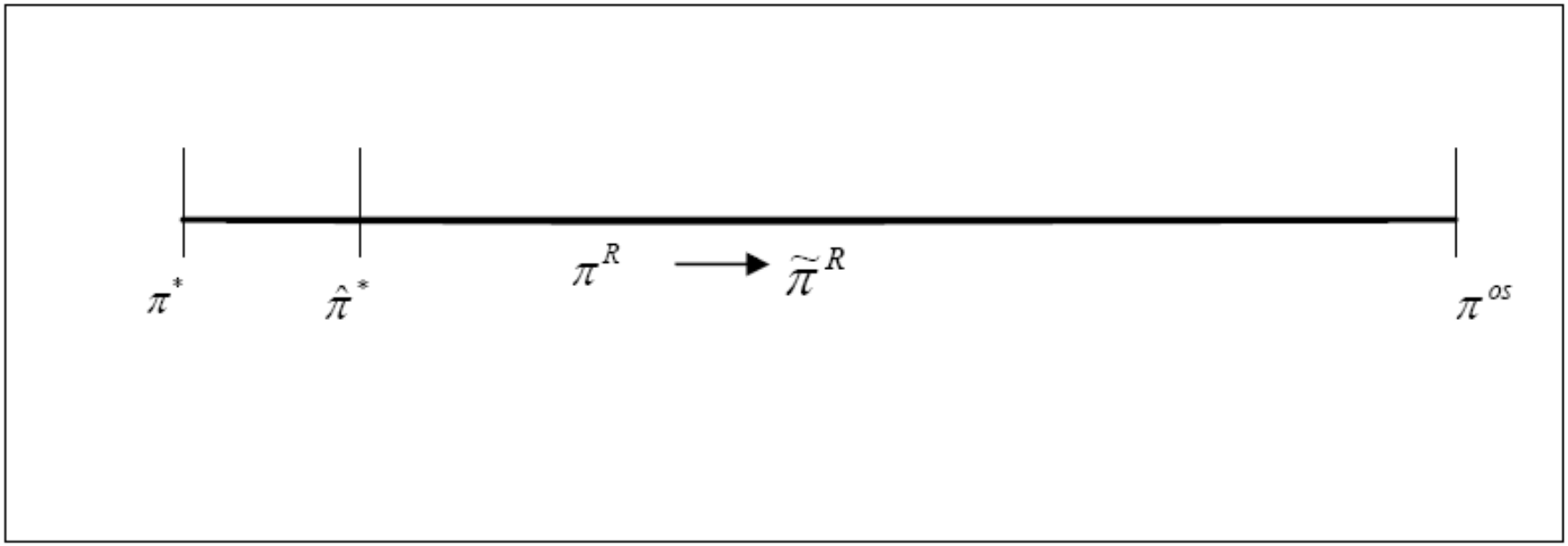


Figure 1

Will Regulators Suffer from Biases in the Long Run?

- Experience of professional bureaucracies make expert regulators theoretically better than lay citizens at learning from mistakes.
- However, overconfidence has been found to be positively correlated with perceived expertise.
- Do expert regulators develop the type of expert intuition that is better at avoiding biases?
- Effective learning (of the type fire-fighters or tenis players use in developing their expert intuition) takes place only under certain conditions: it requires accurate and immediate feedback, and probably an optimal intermediate level of tension/stakes (avoiding the extremes of "choking under pressure" and lack of pressure, like in soccer penalties or in students' assessments).

Will Regulators Suffer from Biases in the Long Run?

- Kahneman and Tversky: the necessary feedback is often lacking for the decisions made by managers, entrepreneurs and politicians because:
  1. Outcomes are commonly delayed and not easily attributable to a particular outcome.
  2. Variability in the environment degrades the reliability of the feedback, especially where outcomes of low probability are involved.
  3. There is often no information about what the outcome would have been if another decision had been taken.
  4. Most important decisions are unique and therefore provide little opportuniy for learning.
- Incidentally, this list fits better with utility regulators (foxes) rather than with central bankers (hedgehogs, at least until recently) according to the comparison made by John Vickers (competition regulator, central banker and academic).

Will Regulators Suffer from Biases in the Long Run?

- Similarly, Cooper and Kovacic: the feedback mechanism that facilitates learning is an important distinguishing feature between firms and regulators:
  1. Unlike the marketplace, which produces feedback for firms quickly in the form of prices, profits and output, the link between policy decisions and outputs is attenuated, measurement is difficult and lags are long.
  2. The costs for the regulator with being wrong are quite low compared to that of the firm. A regulator who systematically produces welfare reducing outcomes may still enjoy his position or even better ones if he produces outputs (cases, rules) that are politically expedient.
  3. Regulatory competition, to the extent that it occurs, is on outputs (cases on high profile companies) rather than outcomes.
- As a result, regulators with a short term bias are likely to be over-represented in the population of regulators.

Possible De-Biasing Mechanisms

- Experience and better selection mechanisms, perhaps from a pool of certified professional regulators.
- Adversarial internal review.
- Greater external and internal accountability: Focus on outcomes rather than outputs (eg number of high profile mergers stopped).
- Ex post analysis of decisions.
- Experiments and institutional diversity (avoid "big bangs").

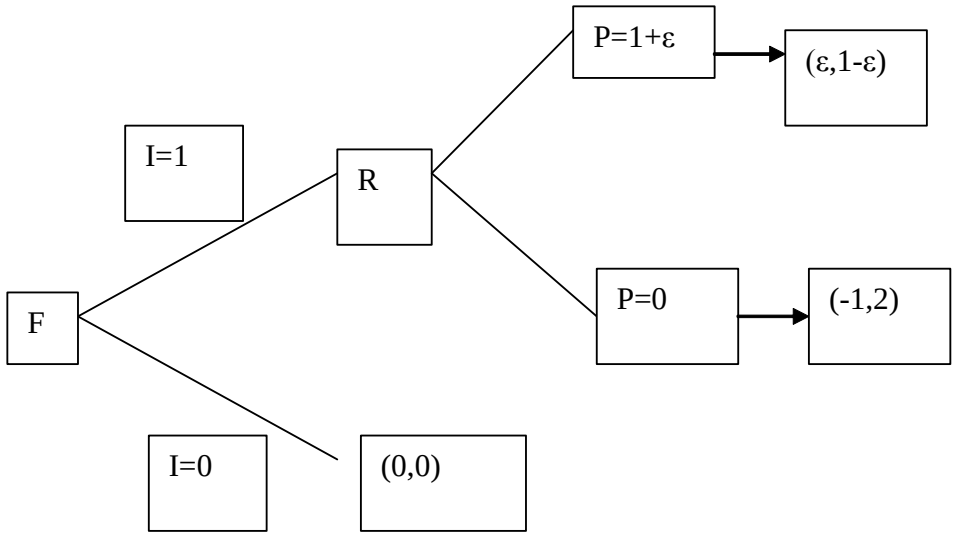
Commitment and under-investment in regulation

- Objective: analyze how the strategic delegation solution to commitment problems in regulation is affected by behavioral considerations.
- The commitment problem in regulation is an example of the difficulties of separating efficiency and equity issues. When consumers or a representative regulator have to decide on prices, they will take into account issues beyond welfare (fairness, "stories" or narratives).
- It is not the only problem in regulation that may be affected by these considerations. Laffont and Tirole(1993) is based on normative models of standard incentives that are affected by the challenges of behavioral economics to welfare economics and incentive theory.

Commitment and under-investment in regulation

- But the commitment problem is simple and illustrates some key issues both theoretically and empirically.
- The consumers only have a political role (voting or influencing the regulator) because once the investment is in place, they just "use it": we can focus on their political biases.
- It is a topic where the removal of regulation is not in the agenda.

Commitment and under-investment in regulation



Commitment and underinvestment in regulation

- Two inefficient ways to avoid underinvestment have also behavioural components: white elephants and capture.
- Regulatory solutions to underinvestment and regulatory reforms must be able to manage public perceptions and socially determined frames of public opinion (Henisz and Zelner, 2005): they work better when they are "owned" by local citizens and the result of processes that are perceived as "fair".
- Some early caveats to the delegation solution (Bernstein) resonate with behavioural concerns: eg coordination problems as "tunnel vision," others were probably inspired by the capture theory of the Chicago school.

Commitment and underinvestment in regulation

- The political instability of regulatory independence (Latin America, Spain) shows that often legal independence relocates, but does not solve, the commitment problem:
- See difference between legal and practice indices of regulatory independence.
- Examples: between 1990 and 2004 Colombia had 10 and Argentina had 11 TC regulators: is this a measure of lack of independence or a measure that they were too independent?

Empirical literature: vulnerable independent regulators

#	*Country*	IR1	*Country*	LPI1	*Country*	LPI2
1	Argentina	0.647	Peru	0.581	Peru	0.947
2	Bolivia	0.487	Bolivia	0.577	Jamaica	0.793
3	Panama	0.459	Argentina	0.490	Colombia	0.774
4	El Salvador	0.441	Brazil	0.478	Bolivia	0.710
5	Peru	0.428	Venezuela	0.468	Argentina	0.590
6	Brazil	0.422	Jamaica	0.460	Panama	0.563
7	Paraguay	0.416	Honduras	0.443	Venezuela	0.557
8	Chile	0.400	Mexico	0.415	Belice	0.550
9	Ecuador	0.387	Paraguay	0.408	Paraguay	0.508
10	Nicaragua	0.371	Colombia	0.385	Costa Rica	0.485
11	Costa Rica	0.370	Panama	0.380	Mexico	0.448
12	Venezuela	0.314	Belice	0.350	Brazil	0.411
13	Belice	0.300	Barbados	0.265	Nicaragua	0.385
14	Honduras	0.286	Ecuador	0.260	El Salvador	0.354
15	Colombia	0.281	Trinidad and T	0.240	Trinidad and T	0.340
16	Trinidad and T	0.279	Uruguay	0.227	Chile	0.333
17	Barbados	0.264	El Salvador	0.221	Barbados	0.299
18	Jamaica	0.253	Chile	0.200	Dominican R.	0.258
19	Dominican R.	0.249	Costa Rica	0.185	Uruguay	0.227
20	Mexico	0.229	Nicaragua	0.181	Guatemala	0.225
21	Uruguay	0.187	Dominican R.	0.125	Ecuador	0.193
22	Guatemala	0.183	Guatemala	0.091	Honduras	0.143
23	Surinam	0.047	Surinam	0.023	Surinam	0.023

Commitment and under-investment in regulation

- In a behavioral adaptation of the model p is transformed into $\beta(p)$ as in Congdon et al. (2011), where $\beta(\bullet)$ is a function that transforms policies into perceptions of policies.
- For example, in the application to regulation of the lobbying model by Grossman and Hepman (see Evans et al. 2008), the degree of information of the electorate relative to regulated policies can be re-interpreted as saliency.
- New policy instruments open up (framing, persuasion, influencing perception) that may influence $\beta(\bullet)$.
- Other key aspects now: find the regulator with the optimal preferences and skills in behavioral politics, influence her preferences and skills, review her decisions. That is, $\beta(\bullet)$ can be subject to a similar strategy of strategic delegation as p.

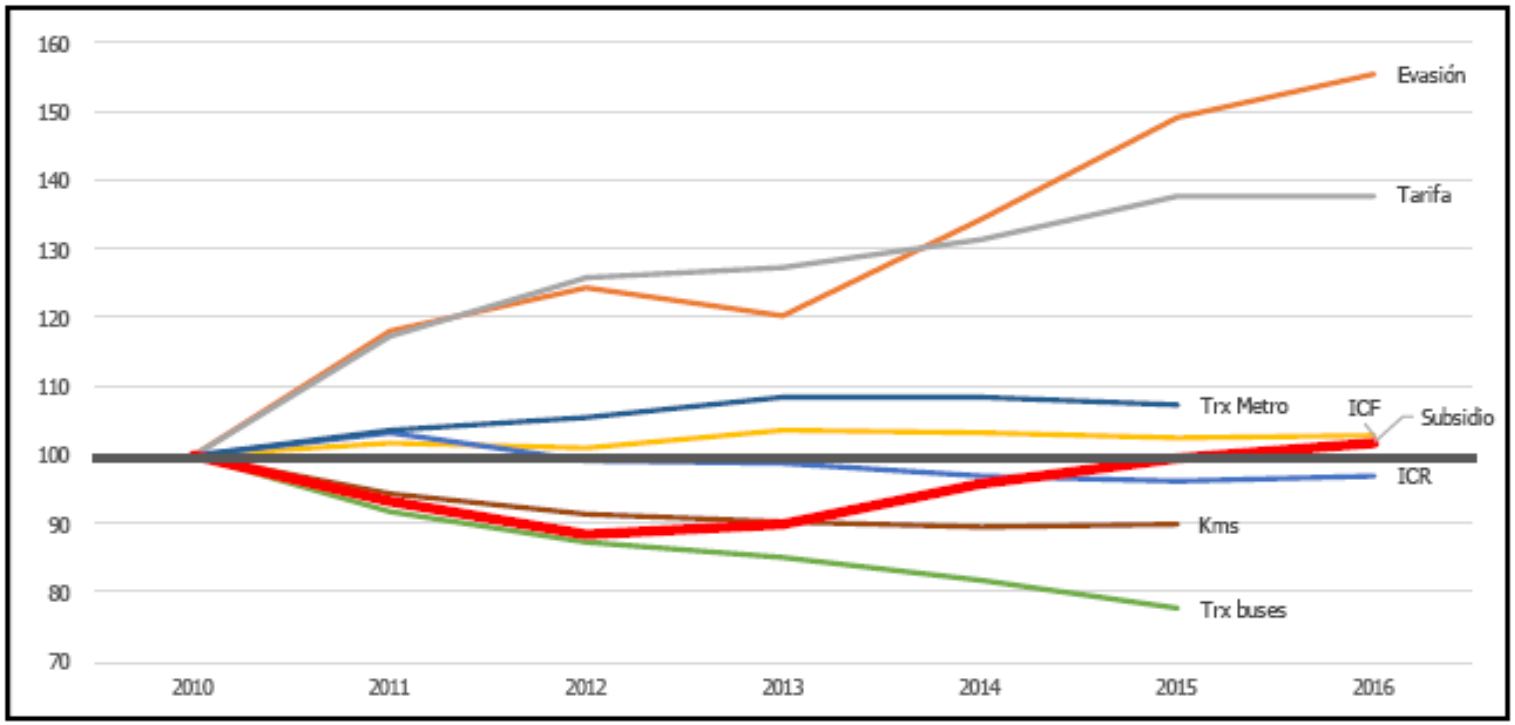
Case 1: Transantiago in Chile

- Transantiago (Chile, 2007): this "big bang" reform was overoptimistic and failed to take into account the perception of voters/users about the generic cost of travelling.
- From yellow dangerous micro-buses to a modern hub and spoke system based on concession with large operators.
- The failure caused a big political scandal. In 2013, an expert economist was appointed as Transport Minister to fix the problem (and was replaced in 2017).
- The increasing number of free riders and public subsidies have marked the celebrations of the tenth anniversary of Transantiago.

Case 1: Transantiago in Chile

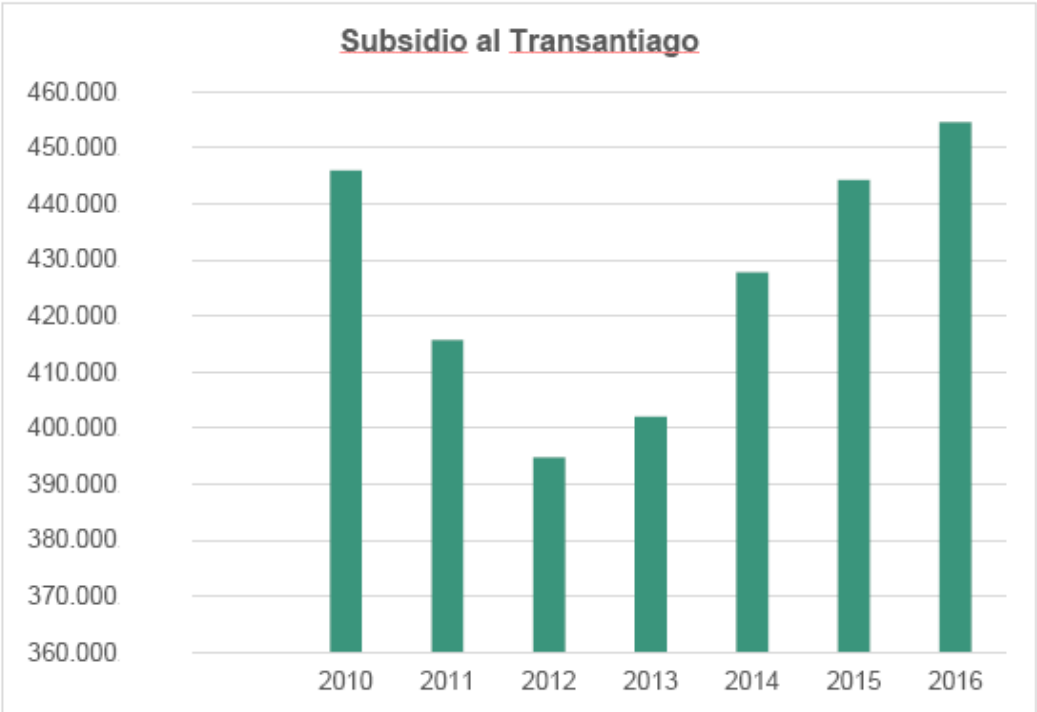
Gráfico 1 – Evolución de indicadores relevantes de Transantiago

(100= año 2010)



Case 1: Transantiago in Chile

Gráfico 3 – Aportes estatales al Transantiago por año ($MM)



Fuente: Adaptado de Puga (2017). Nota: Estos montos no consideran el subsidio espejo destinado a regiones. Montos en precios reales.

En total, considerando el subsidio directo a Transantiago y el espejo, la implementación de este sistema le ha costado al Fisco US$15.000 millones en 10 años, convirtiéndola en la reforma

Case 2: Behavioral Federalism

- The *locus* of regulation may be moved not so much because of the traditional reasons (scale economies, information assymmetries) but because of "political noise."
- Troesken: from local to state regulation in gas in the USA. Is today local regulation of water and transport too noisy?
- Spain: undoing in 2017 an agency merger in 2013 after pressure form the EU.
- There is probably an optimal level for the independent agency: it is problematic locally (because of fixed costs of specialized regulation) and transnationally (because transnational institutions depend on fragile political agreements -but the ECB...).
- Legally non-independent transnational agencies may be more independent *de facto* than *de iure* national independent agencies.

Case 2: Behavioral Federalism

- Auriol et al. (2017) discuss the implications of transnational institutions for the commitment problem.
- Ex-ante agreed international arbitration by expert pannels facilitate commitment.
- Veto points in an international federal system also make expropriation costly.
- Put transnational harmonization may yield excess homogeneity in a context where solutions should be adapted to the institutional endowment.

Evolution of regulatory systems

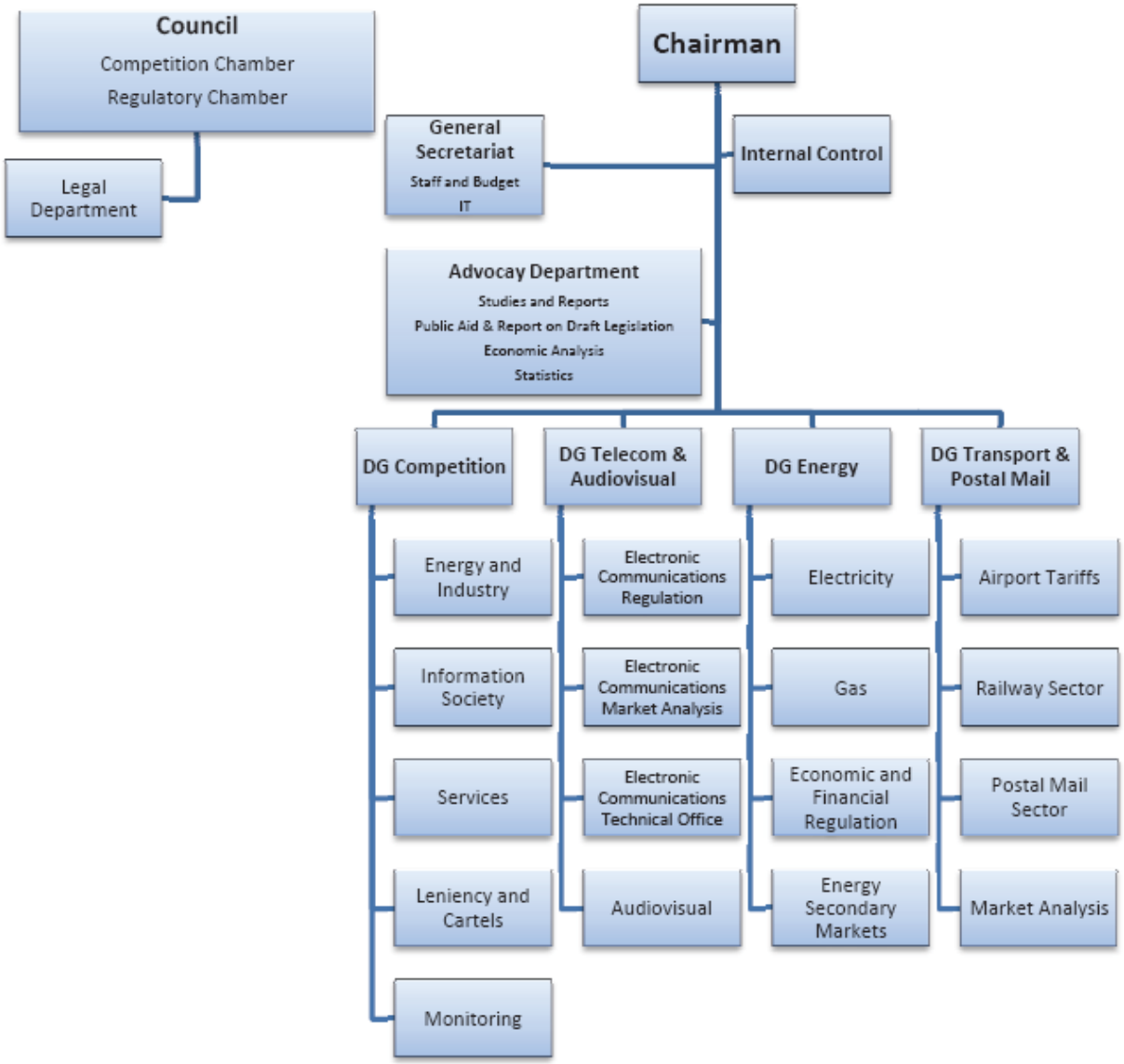
- The horizontal and vertical structure of regulatory agencies is far from stable.
- Local regulators are better at internalizing policy externalities (which may be a good commitment device) although central regulators are better at internalizing territorial externalities.
- But regulated prices may be more salient at local level than at federal level. Troesken: regulation in the US was moved from local to state level because of political (not technological) reasons. In the EU of the XXI century, regulatory responsibilities should be structure to achieve the optimal level of noise/saliency.

Evolution of regulatory systems

- Merger of regulatory and antitrust agencies in Spain in 2013: an illustration of regulatory fragility and risk of regulatory monopolization increasing behavioral biases.
- One agency may be better than two to internalize externalities between tasks.
- But the saliency of static concerns may dominate one agency, whereas keeping a high profile agency in charge of dynamic efficiency may restore some balance.

Evolution of regulatory systems

Figure 5. The organization of the CNMC in 2016



Conclusions and research ideas

- Experts are needed but are not free from biases: may be victims of the "pretence of knowledge" (this was an expresson of Hayek referred to planners as opposed to markets).
- Regulatory architecture must be designed if possible by anticipating behavioral problems and opportunities, eg managing public perceptions with **limited and accountable discretion** in a context of institutional diversity due to generalized uncertainty and complexity.
- A combined analysis of incentives and behavioral biases in the public sector may provide useful insights: well monitored regulators with few tasks and little discretion seem to have less biases (referees in soccer).
- Insulated expert agencies run the risk of being unaccountable and sometimes amount to a shortcut to better politics.

Conclusions and final comments

- Slovic's claim: the solution lies in a better deliberative democracy where the experts help communities (and viceversa) to reach decisions through dialogue and consensus (in a vision of democracy reminiscent of the unanimity principle of Wicksell and Lindahl: but how to apply this to mass democracies with mass and social media?).
- Negotiation ("reasoned discussion" in the words of Sen, including log-rolling), political entrepreneurs and tayloring of solutions (federalism, diversity) alleviate the inefficiencies of political imperfections (Whitman).

Conclusions and final comments

- Relationship with recent literature suggesting that institutions have a complex impact on development, for example by influencing preferences: Putterman, Bowles, Bardhan, Estache.
- But there are also community imperfections: unfair or bad leaders, inefficiencies and biases of "group thinking"...
- Regulatory agencies cannot solve the commitment problem by themselves alone, but can be part of a regulatory package that alleviates biases and mobilizes intrinsic preferences of regulators, policy-makers and voters.

Conclusions and final comments

- Behavioural problems with regulatory agencies add to the early problems that were mentioned by Bernstein in the 1950 and Armstrong et al.in the 1990s: risk of capture, commitment problems, asymmetric information, lack of coordination, lack of political leadership and skills to shape public opinion.
- Instability of regulatory agencies after political changes (Latin America, Spain, Denmark) shows that independent regulatory agencies suffer from lack of political support.
- Independent agencies are more stable when they enjoy public support and a high reputation (Ackerman: Federal Electoral Commission in Mexico in the early 2000s).
- Objective: combine better democracy and expertise, preserving and improving both.