

Behavioral Regulators

IESE Course on Behavioral Economics

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- General Overview:
 - ① Behavioral Public Economics
 - ② Behavioral Regulation
- Literature on experts
- Cooper and Kovacic Model
- Ideas for Research
- Conclusions

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"

- Behavioral Public Economics: Munro, Cullis & Jones, Bernheim.
- Landier and Thesmar: we should end the myth of the benevolent state (for "public choice" and behavioral reasons) and think seriously about improving democracy.
- Debate about the extent and limits of technocracy: central bankers, Italian and Greek governments.

- Difficulties of reconciling populist tendencies of democracy with sound long run policies.
- Slovic versus Sunstein (experts should "nudge" citizens). Rodrik vs Reinhart and Rogoff..
- Shiller in finance and Flyvbjerg in Infrastructure Project Evaluation stress the limits of expert knowledge.
- Engel et al. and de Rus stress that independent expert agencies should be an important part of an institutional strategy to improve cost-benefit analysis to avoid white elephants.

- Behavioral "anomalies" affect the role of the state in the economy: framing, endowment effect, endogenous preferences, non-optimizing behavior
- A problem for public policies under a behavioral lens is that individuals may have several selves, eg a short term affective self and a long term deliberative self: preferences may be changing, endogenous, unstable.
- Bernheim (2009) provides a partial solution: as long as choices have some consistency (basically acyclicity), then we could base analyses on Pareto improvements defined relative to the actual choices. However, the consistency assumption is often violated too.

- Stern (2010): "The cases where consistency of choice applies but standard preference theory does not are likely to be fairly narrow."
- An alternative is to drop preferences or actual choices altogether, and focus only on "capabilities" (Sen, 2009).
- If individual preferences are unreliable as an argument of social welfare, merit wants become more important (Munro). Decisions about them should require high scientific standards (eg calories, physical and mental health, educational level).
- Examples of applications of behavioral public economics: framing effects in taxation, Cost-Benefit analysis taking into account the endowment effect.

- Behavioral Public economics takes into account the possibility of individual "failure" (in addition to market failure 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 any academic formal work in the economics literature (as opposed to the social psychology or legal literatures) on behavioral microeconomic regulation until Cooper and Kovacic, to my knowledge.
- Joskow (1972): "Commissions appear to have the most rudimentary understanding of the relationship between the return is emitted 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."

- Joskow (1974): the objectives of regulatory commissions are more complex than those of firms (as in the paper by Dixit on incentives 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): fear of ostracism (conformity), overconfidence (confirmation bias, cultural views), availability, narrow frames.
- "System II" reasoning (slow, deliberative, see Kahneman's "Thinking Fast and Slow") is also vulnerable to biases: experts tend to deploy "defense motivation", i.e. 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, professions (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").
- 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:

$$U = S - \frac{\theta}{2} (\pi_i^R - \pi^*)^2 - \frac{(1-\theta)}{2} \phi (\pi^{os} - \pi_i^R)^2$$

- 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: $\pi_i^R = \lambda (\theta \pi^* + (1-\theta) \phi \pi^{os})$ 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 and myopia likely to be in favor of more politically expedient policies $\hat{\pi}^* = \alpha \pi^*$ with $\alpha \geq 1$.
- Consequently, the regulator chooses $\tilde{\pi}_i^R = \lambda (\theta \hat{\pi}^* + (1 - \theta) \phi \pi^{os})$

Flawed Heuristics and Myopia

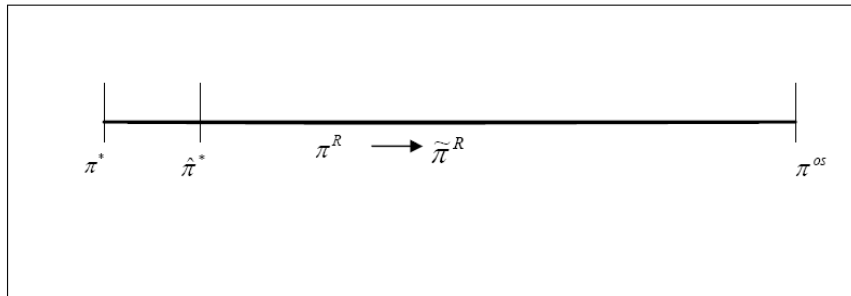


Figure 1

Confirmation Bias

- Individuals tend to become irrationally wedded to early impressions leading to overconfidence.
- A regulator may misread the extent to which his preferred policy deviates from the optimal long-run policy.
- The regulator knows π^{os} with certainty.
- The regulator updates his beliefs about π^* as he collects more information, and chooses between π_A^* and π_B^* given a stream of information $\varepsilon_t \in \{\alpha, \beta\}$, which provides evidence that the optimal long-run policy choice is either A or B , respectively.
- A rational unbiased regulator who perceives a signal of α calculates the odds of A being the optimal policy as:

$$\Lambda = \frac{P(\pi^* = \pi_A^* | \alpha)}{P(\pi^* = \pi_B^* | \alpha)} = \frac{\sigma}{1 - \sigma}$$

- where $\sigma = P(\varepsilon = \alpha | \pi_A^*)$, or the strength of signal α . If $\Lambda > 1$, the regulator adopts π_A^* , and adopts π_B^* otherwise.

Confirmation Bias

- A regulator who suffers from confirmation bias, however, will anchor his belief about which policy is optimal based on the first observed piece of evidence. For instance, if the first piece of evidence is α , with some probability $q > 0$, the regulator erroneously will perceive a subsequent β as evidence in favour of π_A^* .
- Suppose the regulator who has collected two pieces of evidence perceives two α 's. In this case, the biased regulator will calculate the following likelihood function:

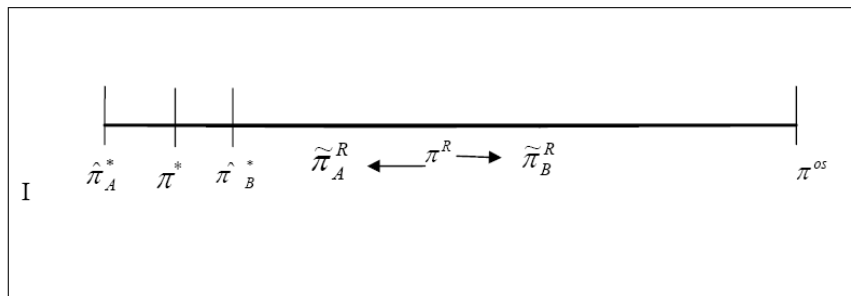
$$\hat{\Lambda} = \frac{\sigma^2}{(1 - \sigma)^2}$$

- But a regulator (or objective observer) aware of this bias would calculate the true likelihood ratio as

$$\Lambda = \frac{q(1 - \sigma)^2 + (1 - q)\sigma^2}{(1 - \sigma)^2} < \frac{\sigma^2}{(1 - \sigma)^2}$$

- The inequality holds as long as $\sigma > \frac{1}{2}$, ie as long as signals are more likely to be indicators of the true state of the world than not.
- Thus a biased regulator will be overconfident in his belief that π_A^* is the correct policy.

Figure 2



Confirmation Bias

- Theoretically, there is no way to identify the direction of the bias.
- In practice it is likely that the first piece of information is a call to action in the direction of politically expedient policies.
- Confirmation bias also can reinforce preferences for short-sighted decisions that derive from flawed heuristics and myopia.

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 tennis players use in developing their expert intuition) takes place only under certain conditions: it requires accurate and immediate feedback.

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 opportunity 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
- Adversarial internal review.
- Greater Accountability: Focus on outcomes rather than outputs (eg number of high profile mergers stopped).
- Ex post analysis of decisions.

Ideas for Future Research

- Analyze the pros and cons of the creation of expert panels to say the final word in disputes in regulated industries in Chile and other countries.
- Expand the data on Latin American telecom regulators (Montoya and Trillas papers) to take into account professional background, gender, education.
- CMT and CNE in Spain: a tale of two agencies
 - 1 influence of availability bias in the market for corporate control: takeovers project light into an industry, changing the objective function of regulators (the CNE was given broader responsibilities on takeovers in the middle of the Endesa takeover battle)
 - 2 technological change (speed of capital depreciation) and demand increase influence both the difficulties of commitment and the objective of containing nominal prices: the political and economic environment has put more pressure on the energy regulator.

- Experts are needed but are not free from biases.
- There remain issues to be resolved in the optimal allocation of tasks between party politicians (in Spain, 28% of board members of the 64 largest companies are former politicians), experts and lay citizens.
- Insulated expert agencies run the risk of being unaccountable and sometimes amount to a shortcut to better politics.

- Behavioral problems with regulatory agencies add to the early problems that were mentioned by Bernstein in the 1950: risk of capture, 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).
- Explore ways to inject scientifically sound information into public discourse through trained facilitators or mediators. Combine better democracy and expertise, preserving and improving both.