



Towards new avenues for modelling research and decision practices

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Climate policy models and real decisions

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The science-expertise-decision challenge

- **What information for decision-makers?**
 - Start from the existence of controversies about the options (be economical or political)
 - We have to talk to several « tribes », « clubs » the cost containment » concept is appealing for the skeptics
- **Who is the « decision-maker »?**
 - question of the organisation of research and expertise at the EU level and elsewhere
 - talk to the ‘primary’ interest groups, not (only) to the spoke(women)
- **« home work »**
 - Better use our models? Explaining the link between policies and « costs »
 - Incorporating the strategic use of the models/findings and the lobbying context (trade liberalization vs climate policy)
 - Need the capacity to resist the ‘pressure’ of funding agencies
 - Explicit the underlying “judgements” behind the models (
 - Open the box; let the “users” and “colleagues” have access to mechanisms and data

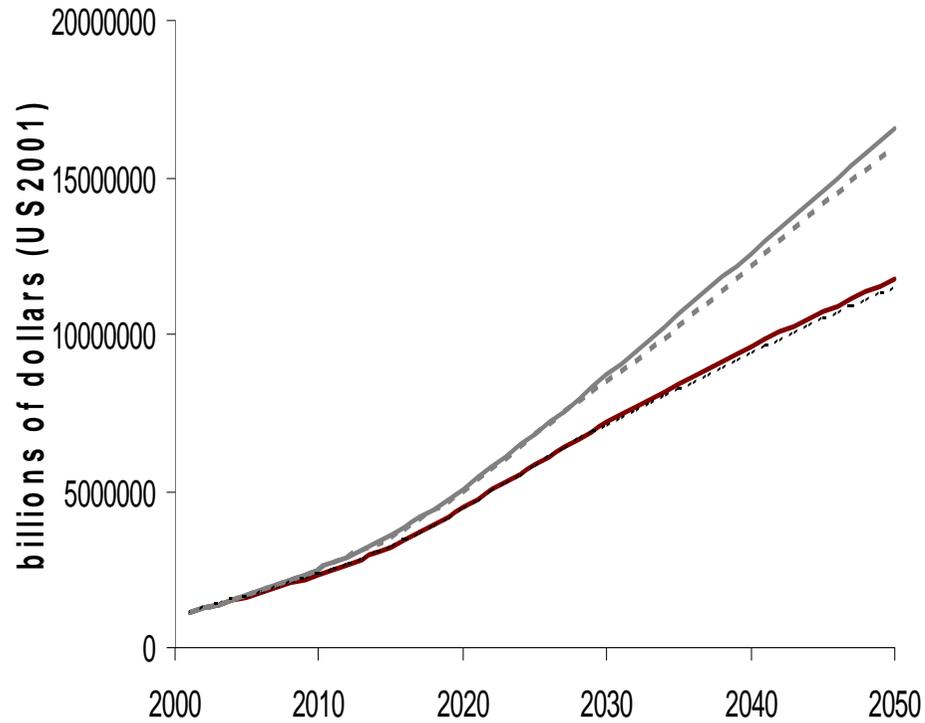
Language and Framing « Failing vs successful language »

- **Change the discourse about costs and benefits;**
 - question of costs vs welfare
- **Change the discourse on « reference » or « baseline » ... compare alternative futures**
- **Redirect the attention to thinking about « futuribles »**
- **Change the discourse about uncertainty: from narrowing uncertainty (best guess) to « option value »**
- **Focus on mechanisms not on figures**
- **A huge “graphical display” + “linguistic” challenges:**
 - The Ipcc charts on costs
 - The “flexibility” and “safety valve” examp

The graphical display challenge

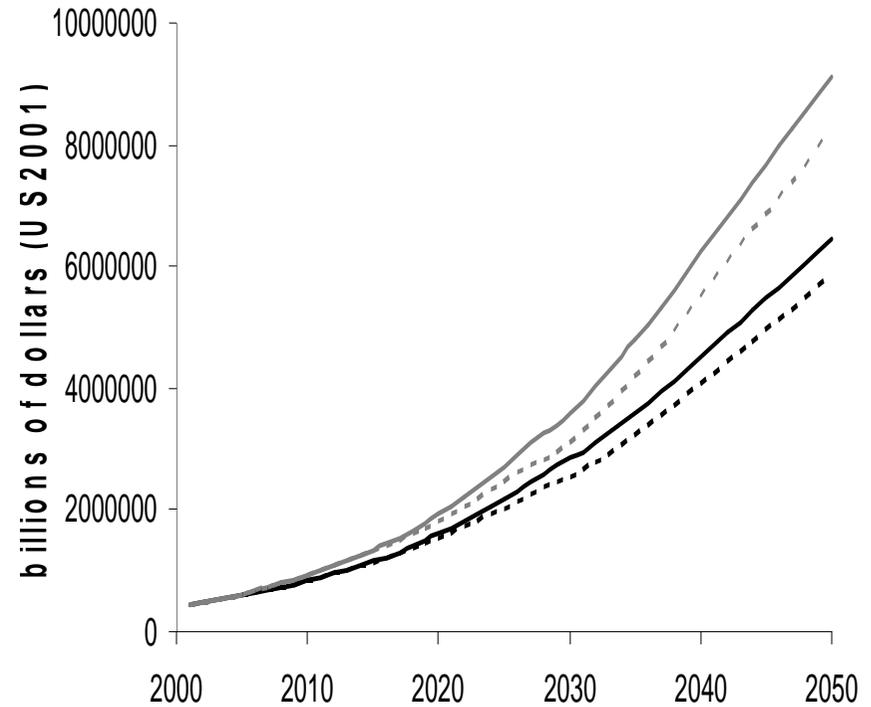
Beyond the regular growth curves

Real GDP - China



— Low Growth — High Growth
..... Low Growth + energy frictions - - - High Growth + energy frictions

Real GDP - India

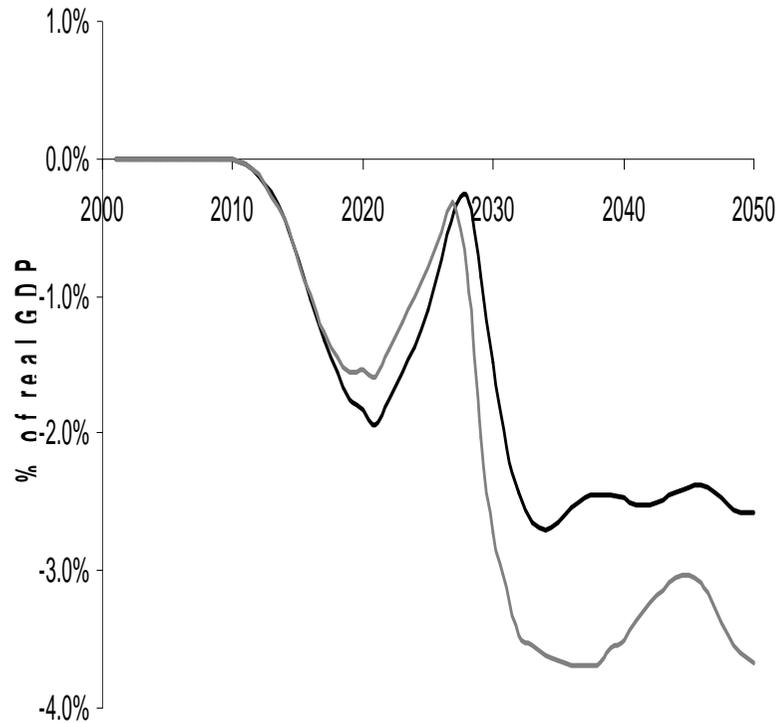


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The graphical display challenge

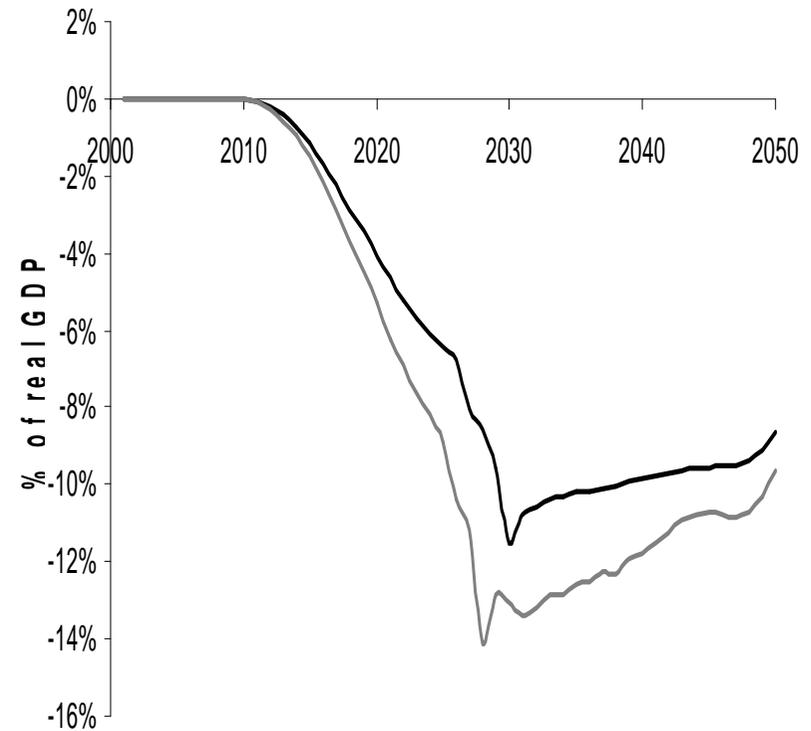
Beyond the regular growth curves

Real GDP losses - China



— Low Growth + energy frictions
— High Growth + energy frictions

Real GDP losses - India



— Low Growth + energy frictions
— High Growth + energy frictions

Towards a new scientific agenda?

- **Structural changes vs marginal changes: articulating C – T - L**
- **Pro-active adaptation; a new wave of “IA’ models**
- **The transition problem: overlapping LT and ST policies**
 - paradox of higher targets leads to lower costs ...
 - the bifurcation/lock-in issue
 - What « lubricant »? Is compensation transfers enough? Link various LT issues (climate, pension funds, changing force relationships)
- **Strengthen information about how do people behave ... including traditional and modern forms of informal economies**
- **Climate policies, climate shocks and “business cycle”: anti-cyclic, pro-cyclic? Need of disequilibrium models**
- **Methodological challenge: one 1st best vs many” 2nd best solutions?**
- **Beyond energy economists (transportation – agricultural economists – urban economists development economists -new economic geography)**

Some “Mysteries” in the functioning of economic sciences

Why did we forgot the BLS theorem ? 1€ in India and in France does not have the same welfare implications

Why the repeated “discount rate” controversy?

- Why forgetting the notion of the ‘Ramseyfication’ of the Solow model
- Why the sequential decision-making framework so unsuccessfull (Nordhaus, Stiglitz anecdote) ... early action Nature (1997)

Why were did we ignore the Solow’s warnings in its Nobel prize lecture?

Why did we ignore the lessons from (some) trade models

Why did we focus so much on climate cost minimization (only) and did not embark energy security (at least) and other issue-linkages

Why this poorness of works on real ex-post assessment of policies and the little attention to the question of economic data

What Nordhaus said ... how was he understood?

“Along the economically efficient emission path, the long-run global average temperature rises sharply. After 500 years, it is projected to increase 6.2 °C over the 1900 global climate. While we have only the foggiest idea of what this would imply in terms of ecological, economic, and social outcomes, it would make most thoughtful people even economists nervous to induce such a large environmental change. Given the potential for unintended and potentially disastrous consequences, it would be sensible to consider alternative approaches to global warming policies?” (Nordhaus 1990)

An example of gap between economic « vulgate » and economic theory?

- ‘Unilateral emissions reductions by a set of rich Northern countries can create self-interested emission reductions by the unconstrained poor Southern countries’
- ‘Trade in emission permits may not be necessary for the equalization of marginal abatement costs across countries’
- ‘Rigid rules for emissions cutbacks may well be efficient’
- ‘Emission permit trading may make both participants to the trade worse off and increase global pollution’
- ‘Every one of these results is inimical to conventional theory in this area’

Copeland et Taylor (2003)
auteurs de Trade and Transboundary Pollution
(American Economic Review 1995)

however Solow had written

« [...] total-factor-productivity calculations require not only that market prices can serve as a rough-and-ready approximation of marginal products, but that aggregation does not hopelessly distort these relationships [...] over-interpretation is the endemic econometric vice »

*in Solow RM. (1988) « Growth Theory and After », American Economic Review
78(3), 307-317*

however Solow had written

- « This 'Wrinkle' is acceptable only at an aggregate level (for specific purposes) and implies to be cautious about the interpretation of the macroeconomic production functions as referring to a specific technical content »

in Solow RM. (1988) « Growth Theory and After », American Economic Review

78(3), 307-317

And again

- Economic cycles are not optimal responses to random shocks around an optimal pathway
- Progress in growth theory requires to better capture the evolution of the structure of final demand

Towards coordinated blueprints?

- Is a “manifesto” possible and useful?
 - To sum up robust and controversial findings in a more efficient way (than Ipcc and EMF)
- What lessons for the way we will sum up the new advances of the “State of the Art?” (the trap of the ex-post discussion)
- What methods to break the parallel hypnosis between modellers – stakeholders – medias and decision-makers