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DRAFT

Ambiguous *global* net costs results

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a paradox due to applying familiar methods outside their applicability space?

Main thesis in short

Diverging results in determining global net costs of respecting UNFCCC Art 2 obligations are essentially not due to diverging input data and valuation principles, they are merely an implication of overstressing the feasibility space of cost benefit analyses according to professional standards.

Introduction

This written evidence is composed of two contributions. The first one refers to No 1 of the terms of reference, the ‘implications for energy demand and emissions of the prospects of economic growth’. The second one refers to No 2 of the terms of reference, the ‘costs and benefits of actions to reduce the net global balance of greenhouse gas emissions’. In both cases, the contributions aim at methodological aspects if not to say ‘pitfalls’ of the way how the two subjects are usually treated in a professional way. Examples are given just for illustrative purposes only. Both main messages are given in short at the beginning.

Main Messages

The main messages are respectively:

- In professional circles of climate change economists, there seems to be a self-stabilizing ruling of a non-negligible underestimating of the greenhouse gas emissions to be mitigated, at least in the medium terms, i.e. at the beginning of the ‘post 2012’-period. This neglecting is mainly due to a non-comprehensive view of the challenge (global) climate policy has to face. Consequently it tends to mislead their recommendations as they are based on such an out blending view.

- The obvious ambiguity in results in calculating net costs of arriving at development paths compatible with the UNFCCC Art. 2 obligation, irrespective of its exact numerical determination as ‘max + 2 C’-aim, is presumably not, at least first of all, due to differences in assumptions concerning data and values. The supposition supported here for being checked in the course of review is, that the apparent ambiguity in results is mainly a consequence of ambiguities in the interpretation of the term ‘net costs’ itself; i.e. if and how costs and benefits can be determined, if, what is specific, is disregarded, i.e. that *global* costs are here at stake. This supposition seems to be reasonable, as the net cost analysis of *global* strategies obviously tends to overstress usual methodological assumptions, which may be adequate if applied in situations where the problem for which the optimal solution is looked for is only a small part of a Whole. In the *global* case, the familiar ‘ceteris paribus’-assumption e.g. is no longer applicable, as there is no ‘cetera’ which could be held to be left ‘unchanged’. Illustrated in terms of professional behaviour: That feasibility checks for base line scenarios usually take not place may prove itself as crucial. It has to be reminded of the fact that in any cost benefit analysis of (small) *investment* projects feasibility check of all options is obligatory. In the process of ‘scaling up’ the cost benefit analysis technique from applying to (small) investment projects to development paths of nations or regions, the obligation to feasibility checks has to be dismissed, mainly due to financial reasons, irrespective of professional standards. In the further scaling up to now *global* net cost determination, this professional ‘slippery’ may reveal to become of crucial importance. The apparent ambiguity in results of net cost analyses of mitigating excessive stages of global change may reveal itself as an expression of the status, professional economics has now reached at: Where the profession tries to tackle very big subjects with familiar methodology, proved in tackling much smaller subjects, unaware that there might be a problem of understanding in this process of upsizing. This kind of experience is familiar for anyone experienced in the history of development of (physical) science. If it is allowed to transfer the experience made there to professional economics, the ambiguity in global net cost analyses could be explained to be a mere paradox due to conceptual mismatch, not (so much or at least only) a phenomenon of uncertainty or diverging views of different subjects.

Evidence for the first thesis:

The underestimated challenge in global GHG emissions reductions necessity at the beginning of the ,post 2012'-period

Sketch of the GHG emissions to be tackled at 2010 ss.

The challenge in global GHG emissions reductions at the beginning of the ,post 2012'-period is sketched in Fig. 1 ("global outcome ..."). This challenge is only partly due to the expected *increase* in emissions of GHGs as defined in the Kyoto basket. With respect to that part, the expected increase is mainly due to the up making in emissions by developing countries – industrialized countries will contribute 2 from 6 to 7 Gt CO₂e/a in 2010. To the other part, which is out faded in the Kyoto approach, not an increase but a kind of 'introduction' into the 'arena' of mitigation policy is to be allowed. These second 9 to 10 Gt/a in 2010 consist at about 8 Gt/a from emission of 'recent' CO₂, i.e. mainly deforestation, as well as of 1 to 2 Gt/a from emissions from non-national territory, i.e. from international aviation as well as marine bunker fuel burning. Summing up, there will be a massive growth in the challenge to be faced, which is irrespective of how the different contributions will come into the arena at the end of 2012: physical increase and 'turning up' with respect to GHG emissions will be equivalent in effect on the 'amount' of the 'coming' challenge.

Evidence for severe underestimating the challenge in 2012 in high ranking political advice

Congressional Budget Office (COB 2005)

This amount of this challenge at the beginning of the ,post 2012'-period is highly unexpected. The ,amount' of its ,unexpectedness', the 'dimension' of surprise, can be illustrated by having a look at one feature of the recently published study by the Congressional Budget Office (CBO) in Washington DC.¹ This report is resuming in its character and therefore representing the mainstream of economic-academic discussions. In the report ,cost' is understood as ,expenditure', as resource use necessary to avoiding a path of society's development, which economists of high academic reputation expect may be the way the world will 'naturally' run in future. The expectations commonly held in this field of experts are e.g. formulated by William D. Nordhaus and Boyer², they are exemplarily made subject by the CBO authors.

¹ Uncertainty in Analyzing Climate Change: Policy Implications: Washington DC January 2005; URL: www.cbo.gov/ftpdocs/60xx/doc6061/01-24-climatechange.pdf

² from Nordhaus/Boyer: Warming the World: Economic Models of Global Warming. Cambridge, Mass.: MIT Press 2000, p. 5

According to them, the amount of what can be perceived (or is to be feared respectively) in the ‚business as usual‘-case up to the year 2100 (sic!) is a level of greenhouse gas emissions of about 48 Gt CO₂/a, i.e. the figure that will be fact in the year 2010. As in the CBO report mitigation costs are linearly dependent upon the distance between the ‚business as usual‘-case and the case for climate policy reasons aimed at, the conclusions of the report can only mislead the US Parliamentarians.

European Environment Agency (EEA 2005)

The European Environment Agency published in summer 2005 its report on ‚low-carbon energy systems‘³, which provided essential background of the decision of the European Council at March 22 and 23, 2005 on EU‘ negotiations position on future climate policy, especially about how Europe’s future development may fit to global development scenarios given EU’s (at that time considered) decision for the max + 2 C ceiling in interpreting Art 2 UNFCCC. In figures in this report, LUC-carbon is excluded as a source and is only allowed to come into the picture as far as (future) carbon sink effects are made subject⁴ which is contrary to what has been presented in the related Communication of the European Commission “Winning the Battle Against Global Climate Change”.⁵

Evidence for the second thesis: Highly diverging results in global net cost determination indicate stress symptoms due to unconsciously applying familiar methods outside their applicability space

CBO/ Nordhaus

The CBO study as well as the remarks made above provide an occasion to hint at a in the very sense mentally ‚disturbing‘ implication of this kind of usual approach. Intended is the estimation of ‚costs‘ of a kind of ‚policy‘⁶ which aims at fulfilling emissions mitigation obligations implied in Art. 2 UNFCCC. The wording ‚policy‘ or ‚action‘ is necessarily (1) understood in the sense, that there exists a development path which will take place without any policy, and with respect to it it is (2) assumed that this path is determinable. If the ‚business as usual case‘ is rightly be understood

³ EEA: Climate Change and a European low-carbon energy system. EEA Report No 1/2005, Copenhagen 2005. URL: http://reports.eea.eu.int/eea_report_2005_1/en/Climate_change-FINAL-web.pdf

⁴ cf. the presentation given in Fig. 3.4 as well in Fig. 4.2. The exclusion is evident given the (only) quantitative statement in the report on the amount of global non fossil fuel CO₂ emissions: “19 % of energy and industry related GHG emissions in 1990”.

⁵ Fig. 1 in the accompanying Staff Working Paper, p. 7.

⁶ or ‚action‘, according to the wording chosen in the TOR of the ‘Stern review’.

as a development line in this understanding, then any deviations from it are sub optimal, i.e. imply 'costs'. So, in the usual approach already about the existence of 'costs', and that means about the sign, is decided by the definitorial assumption of the 'existence' of a no-policy-path, a non-action-path – as well as the possibility of its determination. As far as I see, Those perceived cost by definition are cost which will, according to my view, arise allegedly only.

They are to be treated 'allegedly' for a second reason: They 'exist' (if they exist) only due to the fact that a development into an illegal state will be avoided. These costs, occurring necessarily, are by definition seen to be only avoidable if an illegal development is allowed to or will take place respectively. Openly stated: only if a criminal act directed at depriving humankind of its basis of life will take place.

These costs occur, according to professional economic reasoning, as the global population is occasionally deprived of an 'opportunity' (of its development). The question which has to be raised in view of this professional reasoning is: Is humankind really deprived of an option, of an opportunity of social and economic development, if policy is aiming at avoiding severely illegal, not to say criminal stages of development? In this question, there are two terms to be checked: (1) the question if it is correct to state that there is 'really' an opportunity which is occasionally lost; this wording is equivalent to the question if the attribute 'real' really can be claimed for an option whose feasibility is left unchecked – which once more indicates the crucial importance of the feasibility issue; (2) the question if it is in accordance with professional standards of economics, especially those in classical economic and financial analysis, to allow illegal and/or collectively suicidal options as 'feasible' options – a first glance answer in traditional economic analysis would be: they are obviously, by definition, unfeasible.

With respect to question (1) my first guess answer would be, that the omission of a feasibility check is an indicator for the doubtful 'reality' of any option. Furthermore should we have in mind, that global scenarios over 100 years, with growth factors in personal income of today's consumer pioneers of two and more presume to know exactly the future consumption patterns, irrespective of its plasticity – according to my knowledge of professional standards disregarding the plasticity of demand is inconsistent with basic insights of consumer theory; the presumption of knowledge (of future consumption patterns) contradicts a well known dictum by Friedrich A. von Hayek.

With respect to question (2), I would like to raise an example in Swift's tradition which could serve as a model for dealing with the phenomenon of illegal states in assessing Earth policy. What about an economic assessment of an abolition of ban-

ning the murder of any person above an age where he or she was still contributing to GDP, i.e. above the retirement level? Such persons are by definition ‘unproductive’ (further elaborated on in the next para), to refrain from that ‘opportunity’ is obviously very ‘costly’. What is the reason why this profitable opportunity or the one made subject by Jonathan Swift are left untouched, the ‘opportunity’ to occasionally overshoot the restrictions imposed by Art. 2 UNFCCC on the other hand is made subject of ‘mountains’ of professional economic literature?

Are there rules which can direct the allocation of resources in professional economic reasoning? The only one I am aware of is not from selfregulating bodies of professional economics but from the newly emerging ‘sustainability sciences’ movement. According to their criteria, to raise professionally the question on determining the costs of not overshooting development paths which are compatible with Art. 2 UNFCCC contradicts the ‘saliency’ as well as the ‘legitimacy’ criterion.

WBGU /Nakicenovic

In 2003, the German Advisory Council on Global Change (WBGU) published its Special Report on ‘Kyoto and beyond’, which aimed at the process of preparing Germany’s as well as EU’s negotiation position with respect to the ‘post 2012’-period. The Council’s eventual and summarizing report has been prepared by a study commissioned to IIASA, the lead author has been N. Nakicenovic.⁸ The main idea of the whole process has obviously been, the ‘family’ of IPCC scenarios which so far excluded even the possibility to restrict global emissions to such a ceiling that the max + 2 C aim would be fulfilled to complement with one scenario which explores this option and assesses its feasibility. IIASA’s report included an assertion about the “costs” of complying with the max + 2 C aim, it revealed a positive sign. In the eventual report of the Council, the “costs” of the same scenario reversed its sign, which was explained in a small para. The explanation consisted in two remarks only: (1) that IIASA’s cost concept failed to be a net concept; and (2) that the benefits for the sake of which the max + 2 C ceiling was aimed at may certainly outweigh the loss in Gross World Product, which IIASA’s authors, without any justification, did identify with the term ‘costs’.⁹

⁷ WBGU: Welt im Wandel: Über Kioto hinaus denken: Klimaschutzstrategien für das 21. Jahrhundert. Sondergutachten zur 9. Vertragsstaatenkonferenz der Klimarahmenkonvention vom 1.-12.12.2003 in Mailand. Berlin: Springer 2003; URL engl.: http://www.wbgu.de/wbgu_sn2003_engl.html


⁸ Nakicenovic, Nebosja; Riahi, Keywan: Model Runs with MESSAGE in the Context of the Further Development of the Kyoto Protocol. Externe Expertise für das WBGU-Sondergutachten 2003, Berlin 2003. URL: http://www.wbgu.de/wbgu_sn2003_ex03.pdf

⁹ This observation is described and further analyzed in an unpublished paper by the author (in German only). “Die Kosten des vermiedenen anthropogenen Klimawandels –

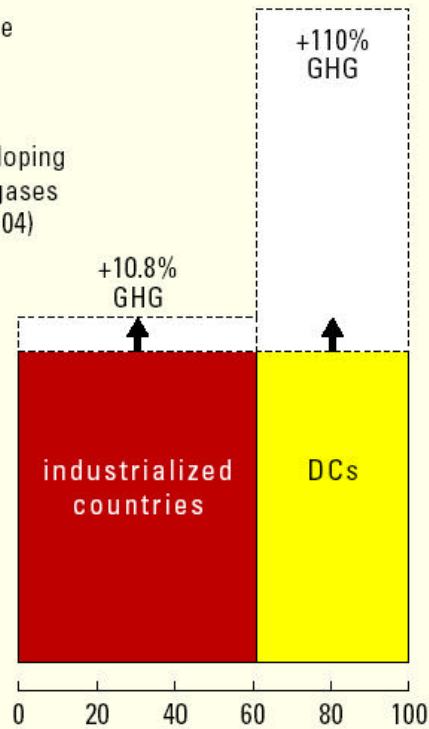
positiv oder negativ?“ („Costs of Mitigated Anthropogenic Climate Change – positive or negative?’
March 2004)

Global outcome of the Kyoto period as to be expected

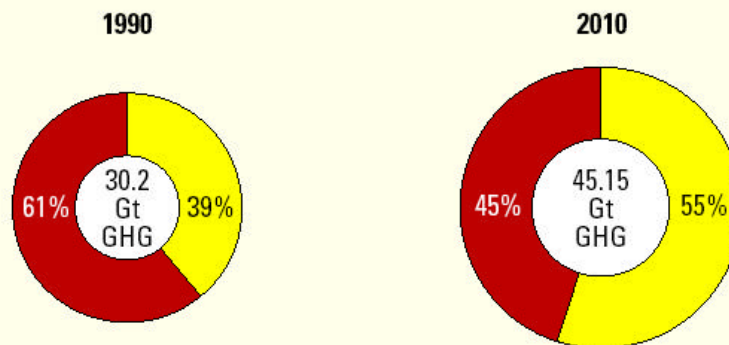
A making up in greenhouse gas emissions

 expected increase
1990* bis 2010

GHG increase of developing
countries (DCs) in all gases
proportional to IEA (2004)
for CO₂ from energy
sector only



B Shift in shares (segments) and increase (circles)



*Base year of the Kyoto commitment (Source: UNFCCC, Oct. 2004).