

Is there a role for cost-benefit analysis beyond the nation-state? Lessons from international regulatory co-operation*

Há uma função para análise custo-benefício para além das fronteiras do Estado-nação? A experiência da cooperação regulatória internacional

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ABSTRACT

In recent decades, governments across the world actively cooperated to harmonize and coordinate policies “behind the borders” through a variety of harmonization efforts at multilateral, as well as regional and bilateral, levels. These efforts have been dictated by the trade liberalization agenda, which perceives domestic regulatory action as a factor impeding international trade. While the WTO has been successful in removing barriers to trade at the border, it is proving less effective in the fight against non-tariff barriers (NTBs), today’s most prominent obstacles to trade exchanges. Given the current inability of the WTO to effectively address such concerns, some countries seem willing to go beyond traditional international treaty making and to explore new avenues of cooperation. The emerging phenomenon of “horizontal regulatory cooperation,” i.e., cooperation on crosscutting issues such as risk assessment, impact assessment, and cost-benefit analysis, seems to offer a promising venue for overcoming regulatory divergence. It relies on the assumption that substantive regulatory convergence can be facilitated by convergence of the general way in which regulators approach standard setting. At a time of growing international interest and policy diffusion of cost-benefit analysis, this chapter explores whether cost-benefit analysis could be used to promote rationality in regulatory decisionmaking beyond the nation-state. In so doing, it draws on the recent experience of international regulatory cooperation of some industrialized countries and examines the extent to which developing nations may be willing and able to participate in this cooperation exercise.

KEYWORDS

Regulatory action — WTO — horizontal regulatory cooperation — cost-benefit analysis — nation-state.

RESUMO

Nas últimas décadas, governos de todo o mundo têm cooperado ativamente na tentativa de harmonizar e coordenar políticas “para além das fronteiras nacionais”, a partir de diversos esforços de harmonização multilaterais, regionais e bilaterais. Esses esforços têm sido pautados no interesse pela liberalização do comércio, uma vez que consideram as ações regulatórias domésticas um entrave ao comércio internacional.

Ainda que a OMC tenha tido sucesso na remoção de barreiras comerciais de incidência fronteira, ela tem se demonstrado menos efetiva na luta contra barreiras não tarifárias (BNTs), os maiores obstáculos ao comércio atualmente. Dada a atual inabilidade da OMC para lidar adequadamente com essas questões, alguns países parecem dispostos a superar a forma tradicional de elaboração de tratados e explorar novos modos de cooperação. O crescente fenômeno da “cooperação regulatória horizontal”, isto é, cooperação para questões transversais, tais como análise de risco, avaliação de impacto e análise custo-benefício, parece oferecer uma arena promissora para a superação das divergências regulatórias. Tal fenômeno sustenta-se na premissa de que uma convergência regulatória significativa pode ser alcançada por meio da confluência na forma pela qual os agentes reguladores lidam com a elaboração de normas. Em um momento de crescente interesse internacional e de difusão da política de análise de custo-benefício, este capítulo avalia se tal análise poderia ser utilizada para estimular a racionalidade na tomada de decisões regulatórias, para além das fronteiras do Estado-nação. Ao fazê-lo, lança mão da experiência recente de alguns países industrializados em cooperação regulatória internacional e examina em que medida as nações desenvolvidas podem estar dispostas e preparadas para participar desse exercício de cooperação.

PALAVRAS-CHAVE

Ações regulatórias — OMC — cooperação regulatória horizontal — análise custo-benefício — Estado-nação

I. The genesis and rationale of international regulatory cooperation

The trend towards cooperation between regulators has become a feature of the international regulatory environment over recent years.¹ Regulators are

¹ Networks of regulators have emerged at the global level, often under the umbrella of the Organization for Economic Cooperation and Development. See, e.g., JACOBSSON, B. Regulated regulators: global trends of state transformation. In: DJELIC, M.-L.; SAHLIN-ANDERSSON, K. (eds). *Transnational governance: institutional dynamics of regulation*. Cambridge, MA: Cambridge University Press, 2006. p. 205-224; BARRETT, Scott. *Why cooperate? The incentive to supply global public goods*. Oxford: Oxford University Press. p. 143-189; and ALLIO, L.; JACOBZONE, S. Regulatory policy at the crossroads: the role of the

becoming the new diplomats, as Anne-Marie Slaughter puts it, “on the front lines of issues that were once the exclusive preserve of domestic policy, but that now cannot be resolved by national authorities alone.”² Indeed, while regulation has been by definition a state prerogative, in an increasingly interdependent world, many regulatory issues are addressed in international *fora*, which produce a wide array of “supra regulations” at both multilateral and regional levels.³ These regulations are then commonly transposed and implemented in various national and regional contexts, but only after numerous formal and informal processes requiring the participation of a large variety of governmental and non-governmental actors.⁴

Historically, much of the drive towards international regulatory cooperation can be found in states’ attempts at reducing barriers to trade.⁵ Following the remarkable success achieved by the world trading system (notably, the General Agreement on Tariffs and Trade (Gatt)) over the post-War years in removing barriers to trade at the border, the subsequent need to tackle a remaining, though not less significant, category of trade obstacles—the non-tariff barriers (NTBs) to international trade—appeared.⁶ These consist of national regulatory measures that had previously not been subject to international scrutiny and that aim at pursuing legitimate objectives, such as the protection of the environment and the health and safety of citizens.⁷

OECD in mapping an agenda for the future. In: ALEMANNO, A.; BUTTER, F. DEN; NIJSEN, A.; TORRITI, J. (eds). *Better business regulation in a risk society*. Springer, forthcoming (2012).

² SLAUGHTER, Anne Marie. *A new world order*. Princeton, NJ; Oxford: Princeton University Press.

³ MATTLI, Walter; WOODS, Ngaire. In whose benefits? Explaining regulatory change in global politics. In: ____; ____ (eds). *The politics of global regulation*. Princeton University Press, 2009. p. 1.

⁴ RAUSTIALA, Kal. Domestic institutions and international regulatory cooperation — comparative responses to the convention on biological diversity. *World Politics*, v. 49, p. 482-509, July 1997. p. 482 (“regulatory cooperation [...] is marked by the degree to which this process of implementation relies upon and is shaped by existing domestic institutions and political structures”).

⁵ See BERMANN, George A.; HERDEGEN, Matthias; LINDSETH, Peter L. (eds). *Transatlantic regulatory cooperation: legal problems and political prospects*. Oxford University Press, 2000. p. 1 (“international regulatory cooperation comprises a highly differentiated bundle of techniques for reconciling the needs of international trade with the diversity of national regulatory environments and public demand”).

⁶ For a detailed history of the evolution of Gatt rules on domestic regulations, see SYKES, Alan O. *Products standards for internationally integrated goods markets*. Washington, DC: Brookings, 1995. p. 63-68 and MAVROIDIS, Petros. *Trade in goods*. Oxford University Press, 2007. p. 1-38.

⁷ It has been observed that it is democracies that typically create NTBs. In particular, it has been argued that democracies induce politicians to replace transparent risk barriers with less transparent ones. See KONO, Daniel Y. Optimal obfuscation: democracy and trade policy transparency. *American Political Science Review*, v. 100, p. 369-384.

When a country's standard is higher than that of another, it acts as a NTB by making the importation of products or services from the other country difficult. Worse yet, states may sometimes deliberately adopt standards for protectionist reasons, i.e., to shield domestic industries from foreign imports.⁸ Regardless of intent, the mere existence of those measures, by generating regulatory divergence, translates into artificial barriers to trade.⁹ In sum, regulatory divergence obstructs imports and exports, creates inefficiencies and increases costs for international business, which in turn impedes international trade and slows global prosperity. As stated, "[T]he modern regulatory state inevitably produces burdens on trade, if only because of the unavoidable lack of regulatory uniformity."¹⁰ Moreover, the relative significance of non-tariff measures that occur "behind the border" has grown exponentially in the context of increasing globalized markets. As the breadth and depth of the external impact of domestic regulation tends to be amplified in today's free markets,¹¹ a troubling gap is emerging between 'regulatory jurisdiction' and 'regulatory impact'.¹²

The most pragmatic, but also the least realistic, solution to overcome regulatory divergence and, thus, close this gap is to promote standard harmonization. Generally speaking, harmonization is to make regulatory requirements of different jurisdictions more similar, if not identical.¹³ Although states may have incentives in cooperating towards full harmonization, this model. Under full harmonization, two or more countries agree to adopt the same identical standard. Under the equivalence model, often implies relinquishing the sovereign power to promulgate regulations. This explains

⁸ Although, surprisingly, international law lacks an operational definition of protectionism. Hence, as illustrated below, recourse to proxies is inevitable in the WTO (national treatment; scientific justification; necessity test etc.).

⁹ Unlike regular trade barriers, NTBs' impact on trade is mainly indirect. It consists of both additional cost of compliance for manufacturers/traders and impact on production functions and consumption decisions.

¹⁰ FARBER, Daniel A.; HUDEC, Robert E. Free trade and the regulatory state: a Gatt's-eye view of the dormant commerce clause. *Vand. L. Rev.*, v. 47, p. 1401, 1994 (comparing dormant commerce clause analysis with Gatt Art. XX analysis), at 1402.

¹¹ SCOTT, Joanne. *The WTO agreement on sanitary and phytosanitary measures*. Oxford University Press. p. 43.

¹² KEOHANE, Robert. Global governance and democratic accountability. In: HELD, D.; KOENIG-ARCHIBUGI, M. (eds). *Taming globalization: frontiers of governance*. Polity Press, MA: Cambridge University Press, 2003 (who defines this gap as one of the most pressing normative problems of our time).

¹³ There are two models of harmonization: the full harmonization model and the equivalence one country agrees to accept another's divergent standard as being equivalent to its own, without equalizing the standard.

why states agreed, when addressing the challenge of regulatory diversity within the World Trade Organization (WTO), to be subject to mere ‘procedural harmonization’ as opposed to ‘substantive harmonization’.¹⁴ By defining the limits of legitimate diversity through a set of procedural requirements promoting harmonization of procedures and methodologies rather than substantive standards, the former is more respectful of national sovereignty, yet less effective in the fight against regulatory divergence.

Procedural harmonization relies on the assumption that it is possible to harmonize decisional outcomes without imposing a pre-defined set of policies to which all WTO members must subscribe, but by merely constraining the margin of discretion of states while adopting domestic technical measures. As a result, under the Sanitary and Phytosanitary Agreement (SPS) and the Technical Barriers to Trade Agreement (TBT), which were set up at the end of the Uruguay Round negotiations leading to the establishment of WTO,¹⁵ member states are required to base their measures “on international standards, guidelines or recommendations, where they exist.”¹⁶ When they do so, member countries benefit from a presumption of full compliance with WTO law.¹⁷ If they do not follow international standards (because these do not exist or states want to follow a higher level of protection), states need to either provide for scientific justification (SPS) or prove the ‘necessity’¹⁸ of the adopted measures.¹⁹ Both requirements, ‘scientific justification’ and ‘necessity’, serve as proxies to detect whether a WTO member pursues a legitimate objective

¹⁴ MAJONE, Giandomenico. The internationalization of regulation: implications for developing countries. In: MINOGUE, Martin; CARINO, Ledivina (eds). *Regulatory governance in developing countries*. Edward Elgar, p. 39.

¹⁵ Since the 1979 Tokyo Round, some countries feared that the lowering of border measures would be circumvented by disguised protectionist measures in the form of technical regulations, notably sanitary and phytosanitary regulations. For this reason, a Plurilateral Agreement was adopted on Technical Barriers to Trade, also called the “Standards Code.” See TREBILCOCK, M.; HOWSE, R. *The regulation of international trade*. London; New York: Routledge, 1999. p. 145. See also MARCEAU, G.; TRACHTMAN, J. The technical barriers to trade agreement, the sanitary and phytosanitary measures agreement, and the general agreement on tariff and trade, a map of the world trade organization law of domestic regulation of goods. *Journal of World Trade*, v. 36, n. 5, p. 811-881, 2002. The operation of the Standard Code is generally perceived as a failure, see VICTOR, David G. The sanitary and phytosanitary agreement of the world trade organization: an assessment after five years. *NYU J Int’l L. & P.*, v. 32, p. 874, 2000.

¹⁶ Article 3 SPS and 2.4 TBT.

¹⁷ All international standards are presumed necessary to achieve a legitimate objective. See Article 3 SPS and 2.5 TBT.

¹⁸ Under the “necessity test,” a measure can only be found “too restrictive to trade” when there is an alternative measure that it is not only less trade restrictive but also achieves the same level of protection as that achieved by the measure adopted.

¹⁹ Articles 2.2 and 5.1 SPS and Articles 5.6 SPS and 2.2 TBT, respectively.

and whether the adopted measure is the least trade restrictive to achieve such an objective. As exemplified by the large number of remaining NTBs and the loaded SPS/TBT disputes' record, this "procedural harmonization" approach falls short in addressing intrinsic negative trade effects.

If observed from a domestic perspective, it is surprising that nothing is said about the need for an ex-ante analysis of proposed regulation, nor on whether the costs of the adopted measure should outweigh its benefits. So long as a national measure is based on an international standard or on a risk assessment, the fact that the measure's costs exceed its net benefits does not amount to a breach of the WTO Agreements.²⁰ At a time of growing international interest and policy diffusion of cost-benefit analysis²¹ via the introduction of mandatory regulatory impact assessment (RIA),²² the prospect of using cost-benefit analysis to promote rationality in regulatory decisionmaking beyond the nation-state is extremely appealing. How should we think about this appeal? Should economic analysis of regulation be mandated at the international level? Should states turn their domestic regulatory reform instruments (such as cost-benefit analysis) into policy tools aimed at solving the old, yet pending, issue of regulatory divergence? Is it too great an intrusion on domestic policy prerogatives, or might it be an appropriate tool for international cooperation? What kind of cost-benefit analysis should be developed internationally? Should it be broadened to include extraterritorial impacts?

²⁰ Article 5.3 SPS seems the only WTO provision hinting at an economic assessment of an adopted measure. It requires the risk assessors to take into account "the cost-effectiveness of alternative approaches to limiting risks," but only "in assessing the risk to animal or plant life or health." (not to human health).

²¹ The OECD has largely promoted this process of policy diffusion in recent years. See, e.g., OECD. *Recommendation on improving the quality of government regulation*. Paris: OECD Publishing, 1995; followed by OECD. *The OECD report on regulatory reform: synthesis*. Paris: OECD Publishing, 1997 and OECD. *Regulatory impact analysis, best practices in OECD countries*. Paris: OECD Publishing, 1997 (recommending, since 1997, that governments "integrate regulatory impact analysis into the development, review, and reform of regulations"); OECD. *Regulatory impact analysis, a tool for policy coherence*. Paris: OECD Publishing, 2009. On the diffusion of RIA in OECD countries, see OECD. *Indicators of regulatory management systems*. Paris: OECD Publishing, 2009. p. 63-71.

²² Although there is a conceptual distinction between cost benefit analysis and regulatory impact assessment (i.e., cost-benefit analysis is one among many types of regulatory impact analyses), these two terms are very often used as synonyms. The OECD adopted the term RIA and argues that "[I]n practice many countries do not adopt the rigorous cost-benefit analysis due to the difficulty of quantifying costs and benefits, and so have adopted a more flexible impact analysis system." OECD. *Regulatory impact analysis inventory*. 2004.

This chapter addresses some of these questions by examining whether cost-benefit analysis could be used beyond the nation state in order to promote regulatory convergence.

II. “Horizontal regulatory cooperation”: where international regulatory cooperation meets cost-benefit analysis

Given the inability of the WTO framework to effectively mitigate the negative trade effects stemming from regulatory divergence, states actively seek innovative solutions with their trade partners to maintain the gains achieved through the multilateral trade system and possibly obtain more. In so doing, states seem willing to go beyond traditional international treaty-making and to explore new possible avenues of cooperation. As a mechanism for solving regulatory problems of a cross-border nature, international regulatory cooperation is increasingly preferred to the traditional route of concluding a multilateral treaty. In particular, recent years have witnessed the emerging phenomenon of ‘horizontal regulatory cooperation’²³ i.e., regulatory cooperation on crosscutting issues such as risk assessment, impact assessment, and cost-benefit analysis.²⁴ This innovative form of international cooperation is “horizontal” because it refers to the general analytical basis of regulation as opposed to “sector-specific” regulatory cooperation.

The basic assumption behind horizontal cooperation is that substantive regulatory convergence can be facilitated by convergence of the general method in which regulators approach standard setting.²⁵ Convergence around

²³ For an initial analysis of this phenomenon, see MEUWESE, Anne. EU-U.S. horizontal regulatory cooperation. Two global regulatory powers converging on how to assess regulatory impacts? In: Jo Swinnen and David Vogel, *Cooperating in managing biosafety and biodiversity in a global world, EU, U.S. and California*, op. cit., and L. Allio and S. Jacobzone, S. Regulatory policy at the crossroads, op. cit.

²⁴ These established principles are often referred to as “meta-regulation,” see, e.g., MORGAN, B. The economization of politics: meta-regulation as a form of nonjudicial legality. *Social and Legal Studies*, v. 12, p. 489-523, 2003 and RADAELLI, C. Whither better regulation for the Lisbon agenda? *Journal of European Public Policy*, v. 14, p. 190-207, 2007.

²⁵ Along these lines, see ALEMANN, A. How to get out of the regulatory deadlock over GMOs? This is time for regulatory cooperation. In: Jo Swinnen and David Vogel, *Cooperating in managing biosafety and biodiversity in a global world, EU, U.S. and California*, op. cit.; Anne Meuwese, supra note 24; and AHEARN, R. J. *Transatlantic regulatory cooperation: background and analysis*, report for Congress, Congressional Research Service, Washington, D.C., 2008 (‘[u]ntil the regulatory structures themselves become more convergent or aligned, the major divergences in regulatory policies are unlikely to disappear’).

a set of methodological tools aimed at improving the quality and rationality of legislation might indeed offer a promising course of action to remove existing barriers and prevent new ones from arising. More ambitiously, by focusing on the “how’s” of regulation instead of on the “what’s”, horizontal regulatory cooperation seems to offer an appropriate contribution to a global governance project “shaped and formed by an overarching cosmopolitan legal framework.”²⁶ As it was recently stated, the horizontal dialogue is meant “to appease, to counter the ‘negotiation mode’ of sector-specific dialogues and to gloss over fundamental differences by presenting regulatory policy as a nice set of best practices that can be transplanted.”²⁷

The most promising “best practice” for achieving such a result seems to be offered by one of the foundational policy tools of the economic analysis of regulation: cost-benefit analysis. In simplified terms, cost-benefit analysis is an ex ante evaluation tool which has its historical roots in the pursuit of economic efficiency.²⁸ It therefore focuses on whether the sum of all benefits of regulation, including both market and non-market, exceeds the sum of all costs. Cost-benefit analysis has been introduced since the 1980s in the U.S. in a number of legislative and regulatory contexts through executive orders, with the aim of informing the regulatory process.²⁹ It has spread since then to several other jurisdictions.³⁰

Although cost-benefit analysis has been adopted and used with a predominant domestic focus, this policy tool, due to its inherent rationalistic and welfare-maximizing commitment, strives for comprehensiveness and has, by its own nature, a cosmopolitan vocation. In particular, as states are not required to conduct a cost-benefit analysis under WTO rules (they need not to show that the benefits of a given national measure outweigh its costs)³¹ the prospect of using cost-benefit analysis to promote rationality in regulatory decisionmaking is extremely tempting in the international trade

²⁶ HELD, David. Law of states, law of peoples: three models of sovereignty. *Legal Theory*, v. 8, p. 1-44, p. 33.

²⁷ Anne Meuwese, *supra* note 24.

²⁸ For a classic introduction to cost-benefit analysis, see MISHAN, E.J. *Cost-benefit analysis* (new & expanded ed. 1976).

²⁹ Executive order No. 12,866 establishes a requirement of cost-benefit analysis. 3 CFR (1994) 638.

³⁰ For an overview of impact analysis systems around the world, see OECD, *Indicators of regulatory management systems*, op. cit., p. 63-71.

³¹ See on this point, CHANG, H. Risk regulation, endogenous public concerns, and the hormones dispute: nothing to fear but fear itself?, *S. Cal. Law R.*, v. 77, p. 743, 2004 and CRAWFORD-BROWN, D.; J. PAUWELYN, J.; SMITH, K. Environmental risks, precaution and scientific rationality in the context of WTO/Nafta trade rules. *Risk Analysis*, v. 24, n. 2, p. 461, 465, 2004.

context. It is not difficult to imagine why cost-benefit analysis might be a “first-best trade-off device from an economic standpoint.”³² This point is indeed intuitively obvious. By forcing regulators to follow a rational process through the evaluation of the costs and benefits of alternative approaches, this policy tool might ensure optimization in regulatory decisionmaking and aid in the search for the solution that results in maximum net gains of trade and regulation. In other words, cost-benefit analysis suggests, as a welfare-maximizing procedure, the promise of national regulations based on the insights of political economy. This, in the long term, by paving the way to indirect harmonization, might contribute to the fight against regulatory divergence.

This scenario, as typically demonstrated in past experiences in transatlantic regulatory cooperation, is not entirely farfetched and might soon become the next frontier of international regulatory cooperation. Thus, already today an increasing proportion of regulatory reform programs reflect a growing awareness of the international context. Thus, U.S. OMB *Circular A-4*, Canadian *Cabinet Directive on Streamlining Regulation*, the EU *Impact Assessment Guidelines* as well as the Australian *Best Practice Regulation Handbook*, although largely geared towards domestic impacts of regulations, encourage regulators to also consider the international trade and investment effects of their respective regulations. They do so not *sua sponte*, but within the framework of international regulatory cooperation agreements, concluded typically at bilateral level among countries.³³ As a result, analytical methods such as regulatory impact assessments and cost-benefit analysis are no longer limited to the domestic impact of regulation but they also include (some of) the international impact. At the same time, given the global nature of an increasing number of policy challenges, such as those raised by climate

³² Farber and Hudec *supra* note 11, at 1417 (in their view a cost-benefit analysis would insure that the rules were optimal, and also that regulators had taken regulatory burdens on outsiders into account). See also LEVMORE. Interstate exploitation and judicial intervention. *Va. L. Rev.*, v. 69, p. 563, 1983. at 574 (arguing for use of cost-benefit analysis in cases of ‘interferences’, and invalidation in cases of ‘exploitations’ under the U.S. commerce clause) as well as DUNOFF. Reconciling international trade with preservation of the global commons: can we prosper and protect? *Weak & let L. Rev.*, v. 49, p. 1407, 1992. at 1449-1450, at 1449 (arguing for a cost-benefit balancing test).

³³ See, e.g., the 2004 Canada-EU Framework for Regulatory Cooperation; the 2002 US-EU Guidelines on Regulatory Cooperation and Transparency; Canada-US Regulatory Cooperation, Charting a Map Forward, 2004; the 2007 Protocol between the Australian Office of Regulation Review and the New Zealand Regulatory Impact Analysis Unit (on Trans-Tasman issues) and the U.S./Canada/Mexico Security and Prosperity Partnership of North America (SPP) Regulatory Cooperation Framework, signed on March 23, 2005.

change, an increasing number of policymakers seem to agree that a global, as opposed to domestic, measure of the benefits from reducing domestic emissions is preferable.³⁴ For this purpose, a U.S. interagency process was initiated to offer a preliminary assessment of how to determine the monetized damages associated with an incremental increase in carbon emissions, which is referred to as the social cost of carbon (SCC).³⁵ Since most regulatory actions are expected to have small, or “marginal,” impacts on cumulative global emissions, the use of global, as opposed to domestic, SCC seems especially appropriate.³⁶ Global SCC allows the expected social benefits of regulatory action to be incorporated into cost-benefit analyses. As will be illustrated, this approach represents a departure from past practices, which tended to put greater emphasis on a domestic measure of SCC (limited to impacts of climate change experienced within U.S. borders). Interestingly enough, this trend towards global measurement, having being initiated spontaneously, does not stem from an international cooperation effort, but it might soon spread to other countries.

Before speculating on the pros and cons of an international use of cost-benefit analysis, the next section illustrates the challenges of promoting cost-benefit analysis beyond the nation-state. It sketches how, then, cost-benefit analysis could be structured as a policy tool to be employed beyond the domestic boundaries.

³⁴ See, e.g., Technical Support Document: —Social Cost of Carbon for Regulatory Impact Analysis —Under Executive Order 12866 —Interagency Working Group on Social Cost of Carbon, United States Government; EUROPEAN COMMISSION. *Winning the battle against climate change* [SEC (2005) 180]; UK Government Economic Service (GES) paper *Estimating the social cost of carbon emissions*. For an overview, see WATKISS, Paul. *The Social Costs of Carbon (SCC) review: methodological approaches for using SCC estimates in policy assessment*. Final Report to Defra. Published January 2006. With contributions from David Anthoff, Tom Downing, Cameron Hepburn, Chris Hope, Alistair Hunt, and Richard Tol.

³⁵ This process was initiated by the Council of Economic Advisers and the Office of Management and Budget, with regular input from other offices within the Executive Office of the President, including the Council on Environmental Quality, National Economic Council, Office of Energy and Climate Change, and Office of Science and Technology Policy. Agencies that actively participated included the Environmental Protection Agency and the Departments of Agriculture, Commerce, Energy, Transportation, and Treasury.

³⁶ The SCC is usually estimated as the net present value of climate change impacts over the next 100 years (or longer) of one additional ton of carbon emitted to the atmosphere today. It is intended to include (but is not limited to) changes in net agricultural productivity, human health, property damages from increased flood risk, and the value of ecosystem services. See YOHE, G.W.; LASCO, R.D.; AHMAD, Q.K.; ARNELL, N.W.; COHEN, S.J.; HOPE, C.; JANETOS, A.C.; PEREZ, R.T. Perspectives on climate change and sustainability. In: *Climate change 2007: impacts, adaptation and vulnerability*. Contribution of Working Group II to the Fourth. 2007.

III. What kind of cost-benefit analysis is optimal for international regulatory cooperation?

Although its inherent optimization promise and cosmopolitan vocation seem to make cost-benefit analysis the privileged tool to promote regulatory convergence, the kind of cost-benefit analysis to be advanced beyond the nation-state differs from its domestic version. Cost-benefit analysis, being typically conducted from the point of view of the local country, tends to omit how the benefits and costs are felt (and distributed) across the border. In a nutshell, cost-benefit analysis, as it is currently applied in most jurisdictions, is extra-territorially blind. It normatively assumes that it is the right of the regulating state to act, irrespective of the external effects of such a regulation on other countries. Therefore, to be meaningful and appropriate to an international context, cost-benefit analysis needs to go beyond the analysis of the domestic effects of regulation and also include extraterritorial impacts. As shown by a growing number of domestic cost-benefit analysis guidelines, international regulatory cooperation has the potential to promote and shape a different, expanded version of cost-benefit analysis. Yet the question remains how to methodologically develop a cost-benefit analysis that might include international impacts, i.e., impacts felt *extramuros*?

Once established that cost-benefit analysis should be broadened in an international context in order to gain relevance, it is crucial to determine what its exact extra-territorial scope may be. In other words, if domestic cost-benefit analysis is primarily designed to answer the question: “does the expenditure of resources on this particular program provide a net benefit to Assessment Report of the Intergovernmental Panel on Climate Change, M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson (eds.), Cambridge University Press, Cambridge, 821.the domestic economy and the domestic public?”, which question should international cost-benefit analysis address?

Yet what is intra-and extra-territorial is not always an easy question to answer. As stated in the international trade context, “law in this area has moved sometimes by intuition, sometimes by social convention and rarely based on sound intellectual grounds.”³⁷ As a result, similarly to what occurs

³⁷ Petros Mavroidis, *Trade in goods*, op. cit., p. 278.

in domestic cost-benefit analysis, the scope of an international cost-benefit analysis is prone to varying interpretations and is subject to political judgment. This is clearly illustrated by the recent trend towards a global, as opposed to a domestic, measurement of SCC.

Global cost-benefit analysis vs. International cost-benefit analysis

Should the regulatory benefits of regulation be contrasted with the trade and other costs of regulation? Or should the focus be limited to the benefits of the regulation for insiders versus the harm it causes to outsiders? In other words, should the focus be on the overall economic efficiency of the regulation or rather on how its costs and benefits are spread across the border?

The answers to these questions depend on the overarching goal governments want to pursue through cost-benefit analysis beyond the nation-state: as a promoter of efficient regulation aimed at maximizing net gains or merely as an indicator of how much of the effects of a domestic measure are felt externally (i.e., as a proxy to detect discrimination)?

While the first kind of expanded cost-benefit analysis seems global, or universal, in scope ('global cost-benefit analysis'), the second is more limited as it acts as a mere proxy to detect externalization, i.e., costs on outsiders ('international cost-benefit analysis'). To test the differences between these two forms of cost-benefit analysis, let us assume a domestic regulation whose cost side falls mostly on non-residents and that it is *ceteris paribus* with regard to benefits. Under global cost-benefit analysis, this regulation, although imposing most of its costs on outsiders, might still be justified on a net global efficiency criterion. Conversely it could never be the case under international cost-benefit analysis.

The embryonic forms of expanded cost-benefit analysis developed thus far in the framework of international regulatory cooperation experiences seem to have embraced 'international' rather than 'global cost-benefit analysis'. Indeed, they have been rather narrow in scope and do not seem to nurture any global vocation. Although it is not the product of any international regulatory initiative, the recently adopted U.S. approach vis-à-vis the social cost of carbon represents an interesting exception in this regard. When incorporating into cost-benefit analyses the social benefits of climate change regulatory actions versus the costs of the economic damages associated with carbon dioxide,

the U.S. agencies do not limit their analysis to the impacts of climate change experienced within U.S. borders. Rather, they rely on global measurements.³⁸

A comparative overview of 'international cost-benefit analysis' experiences

Following the conclusion of international regulatory cooperation agreements, several industrialized countries have expanded the scope of their regulatory analysis. As a result, these are no longer limited to domestic impacts of regulation but they also seek to include some international impacts.

In the U.S., *EO 12866* is silent on international impacts. Under *Circular A-4*, analysis of economically significant proposed and final regulations from the domestic perspective is required, while analysis from the international perspective is optional. In particular, *Circular A-4* seems to rule international impacts out when it states that a regulatory impact analysis "should focus on benefits and costs that accrue to citizens and residents of the United States."³⁹ Nevertheless the the same document acknowledges that "new U.S. rules could act as non-tariff barriers to imported goods" and therefore recommends that these concerns be "evaluated carefully,"⁴⁰ but it does not offer clear guidance on how to consider the international trade and investment effects of U.S. regulation. *Circular A-4* also adds, "Where you choose to evaluate a regulation that it is likely to have effects beyond the borders of the United States, these effects should be reported separately."⁴¹ In practice, the current U.S. approach is to have regulatory impact analyses take into account only those direct impacts on foreign entities that are passed on to the U.S. economy.⁴² Thus, for instance, if a regulation raises the costs of importing a product, and as a result it increases domestic prices, the costs to domestic consumers due to those

³⁸ See, Technical Support Document: —Social Cost of Carbon for Regulatory Impact Analysis — Under Executive Order 12866 —Interagency Working Group on Social Cost of Carbon, United States Government.

³⁹ Circular A-4, p. 15.

⁴⁰ Circular A-4, p. 6.

⁴¹ Circular A-4, p. 15.

⁴² There are, however, some legislative texts expressly ruling out the possibility to broaden the analysis to extraterritorial effects. See, e.g., the Unfunded Mandates Reform Act of 1995, Pub. L. No. 104-4, 109 Stat. 48, §§ 202, 205 (excluding effects on foreign governments, and perhaps implicitly including only U.S. private sector effects).

price increases tend to be considered in the impact analysis.⁴³ This is clearly not global cost-benefit analysis as it was previously defined. Yet as illustrated by the current efforts aimed at determining the monetized damages associated with an incremental increase in carbon emissions via a global measure of SCC, U.S. agencies seem disposed to depart from past practices, which tended to put greater emphasis on a domestic measure of SCC. Indeed, to ensure consistency in how benefits are evaluated across agencies, the Administration recently sought to develop a transparent method, specifically designed for the rulemaking process, to quantify avoided climate change damages from reduced CO₂ emissions.⁴⁴

In the EU, the *Impact Assessment Guidelines* explicitly require that impacts on international (extra-EU) trade and on third countries are taken into account. This requires inter alia an assessment of whether the proposal places EU companies at an advantage or disadvantage vis-à-vis external competitors. In practice, as often emphasized by the Impact Assessment Board, the EU's regulatory oversight body,⁴⁵ Commission proposals often lack consideration of international impacts and, when they do so, the analysis is limited to the impact of regulation on the WTO obligations of the EU.

The main focus of the 2007 *Canadian Cabinet Directive on Streamlining Regulation* is on the identification and assessment of "the potential positive and negative economic, environmental, and social impacts on Canadians, business, and government of the proposed regulation and its feasible alternatives."⁴⁶ Yet the *Canadian Cost-Benefit Analysis Guide*, which

⁴³ Since an analysis of the direct costs on foreign entities is a useful proxy of the costs on the U.S. economy, many U.S. RIAs incorporate this approach in order not to underestimate the costs of rulemaking.

⁴⁴ See, Technical Support Document: —Social Cost of Carbon for Regulatory Impact Analysis — Under Executive Order 12866 —Interagency Working Group on Social Cost of Carbon, United States Government.

⁴⁵ This board consists of an internal group of five high-level officials with IA experience acting in personal capacity under the authority of the Commission President and is chaired by the Deputy Secretary General of the European Commission. The IAB provides not only quality support but also reviews, independently from the author services, draft Impact Assessments in order to assess the quality of the analysis and the coverage of all relevant impacts. See WIENER, Jonathan; ALEMANNO, Alberto. Comparing regulatory oversight bodies across the Atlantic: the Office of Information and Regulatory Affairs in the U.S. and the impact assessment board in the EU. Forthcoming in ROSE-ACKERMAN, Susan; LINDSETH, Peter (eds). *Comparative administrative law*. Edward Elgar, 2010. p. 331-333.

⁴⁶ The only explicit commitment towards "international impact" relates to the duty to publish proposals for new or changed technical regulations, conformity assessment procedures, and sanitary and phytosanitary measures "that may affect international trade" for a comment period of at least 75 days and take into account the comments received. A similar commitment

complements the Directive, requires regulators to consider “the international impacts of their regulations.”⁴⁷ However, this duty not only lacks operational guidelines but also seems to be contradicted by the following statement: “It is the benefits and costs accruing to the individual residents of Canada that are totaled to generate the aggregate net benefit for the country in any period. If the benefits are accrued to non-residents or to third countries, those benefits are usually excluded from the total benefits for the implementation of the regulation in question.”⁴⁸

In Australia, the *Best Practice Regulation Handbook* explicitly requires a “Trade Impact Assessment where a proposed regulation has a direct bearing on export performance.”⁴⁹ This is the only reference made to the international impacts of regulation in this document.

As clearly exemplified by the U.S. and Australian examples, the kind of expanded cost-benefit analysis which is promoted within an international regulatory cooperation framework tends to be limited to “domestic trade impacts,” i.e., those international, direct or indirect, impacts on domestic or foreign entities which are passed on to the domestic economy. Perhaps this is not a surprising outcome. States willing to cooperate on regulatory issues have no incentives in subjecting themselves to a “global” cost-benefit analysis aimed at determining the overall (trade) efficiency of their measures. Rather, they prefer to identify those trade impacts which may affect their closest trade partners and which may ultimately be felt on their economies. International cost-benefit analysis is therefore designed to guarantee that the external costs of regulation are considered by the domestic legislator only insofar as they are borne by a trade partner or by the domestic economy. The drive behind international cost-benefit analysis is not global economic efficiency but merely the economic interests to the parties of the agreement. In any event, it is needless to say that difficult normative, institutional, methodological, and legitimacy questions lie behind any effort aimed at developing a form of ‘global cost-benefit analysis.

of exchange of information exists in the Cooperation Agreement between Australia and New Zealand on Trans-Tasman issues, i.e., those which refer to commerce between these two countries.

⁴⁷ Canadian Cost-Benefit Analysis Guide: Regulatory Proposals, p. 9.

⁴⁸ Canadian Cost-Benefit Analysis Guide: Regulatory Proposals, p. 12.

⁴⁹ BEST practice regulatory handbook. June 2010 ed. Available at: <www.finance.gov.au/obpr/proposal/handbook/docs/Best-Practice-Regulation-Handbook.pdf>.

Notwithstanding their differences in the level of individual commitment to international cost-benefit analysis, these jurisdictions are increasingly cooperating to improve the way in which they can incorporate international trade impacts in their regulatory analysis. In particular, the EU and the U.S. have been working together, although with limited success, to ensure that assessment of future regulations takes into account impacts on international trade.⁵⁰ Similarly, the Canada, the U.S. and Mexico have taken a commitment, within the 2005 Security and Prosperity Partnership of North America (SPP) Regulatory Cooperation Framework, to “identify, develop and conduct pilot project(s) in joint regulatory impact analysis, including cost-benefit analysis and/or risk assessment”.⁵¹

The next sections aim at analyzing the main benefits and costs stemming from the implementation of cost-benefit analysis beyond the nation-state via regulatory cooperation mechanisms.

IV. The benefits of international cost-benefit analysis

The spread of cost-benefit analysis via international regulatory cooperation could provide several important advantages and benefits. Although it is not a panacea, cost-benefit analysis is widely believed to play an important role in policymaking. It is often argued that domestic cost-benefit analysis has two virtues: (i) it enhances the evidence base, thus optimizing the decisionmaking process; and (ii) it improves the representation of the public interest by promoting transparency. In particular, by quantifying the costs and benefits of regulation in economic terms, cost-benefit analysis is believed to favor a democratic, participatory and deliberative decisionmaking process, in which all stakeholders (policy makers, experts, interest groups and citizens at large) contribute collectively to the shaping of policies.⁵² But to what extent may

⁵⁰ See Review of the Application of the EU and U.S. Regulatory Impact Assessment Guidelines on the Analysis of Impacts on International Trade and Investment, Final Report and Conclusions. Prepared by the Office of Management and Budget and the Secretariat General of the European Commission, Brussels/Washington DC, May 13, 2008.

⁵¹ Security and Prosperity Partnership of North America (SPP) Regulatory Cooperation Framework, signed on March 23, 2005, available at: <www.spp-psp.gc.ca/eic/site/spp-psp.nsf/eng/00095.html>.

⁵² See, e.g., REVESZ, Richard; LIVERMORE, Michael. *Retaking rationality*. Oxford: Oxford University Press, 2009. p. 190. For a critical view, see, e.g., ACKERMAN, Frank; HEINZERLING, Lisa. *Priceless: on knowing the price of everything and the value of nothing*. New York: the

these virtues of cost-benefit analysis also be ascribed to a form of cost-benefit analysis that goes beyond the nation-state?

Although the scope of existing 'international cost-benefit analysis' is limited, its optimization benefits on the overall efficiency of regulatory outcomes seem promising. Similar to what occurs at the domestic level, international cost-benefit analysis may reveal tradeoffs, foster transparency, and even promote participation and accountability.⁵³ In particular, it may:

- provide information to help clarify trade-offs derived from trade liberalization and the limits of trade negotiation positions;⁵⁴
- prevent tunnel vision and biases towards certain regulatory options;
- foster participation by including into the decisionmaking process a greater number of stakeholders and foreign authorities;
- build an open process of consultation around trade policy creating a basis for an informed discussion with a broad range of stakeholders;
- enhance transparency so that foreign governments, including developing countries, and the public could (more easily) monitor domestic decisionmaking. Moreover, due to its rationalistic and comprehensiveness commitments, international costbenefit analysis may promote the exchange and pooling of expertise among countries facing similar methodological and substantive policy issues.

Even more significantly, it seems that the most valuable benefit of international cost-benefit analysis relates to its ability to address the legitimacy claim that is increasingly raised with reference to the emerging gap existing between 'regulatory jurisdiction' and 'regulatory impact', which is particularly significant when it comes to the actions of industrialized states. Since the internal political process is insufficient to legitimize the application of domestic law to the disadvantage of foreigners, who, by definition, cannot participate in the internal political process, international cost-benefit analysis opens up this internal political process by being both transparent and

New Press, 2004 and WAGNER, W. The CAIR RIA: advocacy dressed up as policy analysis. In: HARRINGTON, W.; HEINZERLING, L.; MORGENSTERN, R. Reforming regulatory impact analysis. Washington DC: RFF, 2009, p. 57.

⁵³ ARROW, Kenneth J. et al. Is there a role for cost-benefit analysis in environmental, health, and safety regulation? *SCI*, v. 272, p. 221, 1996 (suggesting that cost-benefit analysis can play an important role in helping to inform regulatory decisionmaking if utilized appropriately) and Revesz & Livermore, *supra* note 53, p. 190.

⁵⁴ SULLIVAN. The Supreme Court, 1991 term — foreword: the justices of rules and standards. *Harvard Law Review*, v. 106, p. 24, 1992 ("standards make visible and accountable the inevitable weighing process that rules obscure").

inclusive to external constituencies. By having vocation to also evaluate the trade impact on individuals who live in different polities, yet whose life is affected by the domestic choice of other countries, cost-benefit analysis might, at least in principle, reduce that “external accountability gap”.⁵⁵

Overall, it seems that international cost-benefit analysis might help diminish regulatory divergence because, as a result, the decisionmaking process gets more open and transparent. International cost-benefit analysis can be seen as a discovery process of proposed regulations for all the parties involved. In particular, by increasing the share of information states exchange, international cost-benefit analysis might ensure that cooperating states receive “early warnings” on forthcoming legislation. In certain circumstances, as illustrated by the case of climate change, only a form of global or universal cost-benefit analysis might provide an in-depth assessment of likely changes ensued by a new regulation on economies, social development, and the environment, in any potential affected geographical area. Yet this does not necessarily imply that a supranational entity conducts cost-benefit analysis and on that basis governments do regulate. Rather it suggests that governments, when assessing the cost and benefits of the available regulatory options, rely (insofar as possible) on global measurements instead of limiting their analysis to the impact experienced within domestic borders.

V. The costs of international cost-benefit analysis

The promise of international cost-benefit analysis to promote rational decisionmaking through regulatory cooperation is not without its own risks and costs. Taking reality into consideration, the most immediate obstacle to the use of cost-benefit analysis beyond the nation-state is the different levels of penetration, development and implementation of cost-benefit analysis across countries.⁵⁶ If 31 out of 34 OECD countries require RIA of regulatory proposals, only a few boast a full cost-benefit analysis system⁵⁷. Although some developing countries are beginning to apply some form of regulatory

⁵⁵ Robert Keohane, *Global governance and democratic accountability*, op. cit.

⁵⁶ See OECD. *Building an institutional framework for regulatory impact analysis, guidance for policy-makers*. 2008. at 11.

⁵⁷ Regulatory Managements Systems indicators (2009), at: <www.oecd.org/dataoecd/44/37/44294427.pdf>.

assessment, their methods are generally incomplete and not applied systematically across policy areas.⁵⁸ In any event, few studies have considered the potential for using RIA in developing countries.

Further, each domestic version of cost-benefit analysis conceals considerable latitude for heterogeneity and to include international impacts represents a further challenge. If cost-benefit analysis means different things to different stakeholders, international cost-benefit analysis adds an additional layer of complexity. Indeed, the objectives, design and role of administrative processes differ considerably among countries and among regulatory policy areas. Moreover, even among industrialized countries, the “first generation” debate about cost-benefit analysis’ normative desirability is ongoing and questions concerning “second generation” issues related to how to implement cost-benefit analysis have not yet been addressed.⁵⁹ This reminds us that an additional obstacle to the use of cost-benefit analysis beyond the nation-state might be represented by the debate on the inherent limits of the practice of cost-benefit analysis today. As a growing body of literature has illustrated in recent years, cost-benefit analysis is vulnerable to a significant number of philosophical and moral objections.⁶⁰ Regardless of where states stand on this debate, the incorporation of cost-benefit analysis for the purposes of international regulatory cooperation cannot transcend this debate at the domestic level.

There also exist inherent methodological and institutional design complexities to an expanded use of cost-benefit analysis. Although the cosmopolitan vocation of cost-benefit analysis may seem to render this policy tool ideal to be used outside of the domestic boundaries of the nation-state, when translated into applied methodologies, it has “to be deployed by policy

⁵⁸ KIRKPATRICK, C.; ZHANG, Y. Regulatory impact assessment in developing and transition economies: a survey of current practice. *Working Paper Series*, No. 83, Centre on Regulation and Competition, Institute for Development Policy and Management, University of Manchester, UK, 2004; KIRKPATRICK, C.; PARKER, D. Regulatory impact assessment and regulatory governance in developing countries. *Public Administration and Development*, n. 24, pp. 333-344, 2004.

⁵⁹ KYSAR, Douglas. *Regulating from nowhere*. Yale University Press, 2010. p. 10.

⁶⁰ This paper cannot contribute to the debate regarding the utility, desirability and morality of cost-benefit analysis generally as a technique of policy analysis, but simply refer to some of the concerns raised by others. For an analysis of ‘standard objections’ to cost-benefit analysis, see, e.g., ADLER, Matthew; POSNER, Eric. *New foundations of cost benefit analysis*. p. 154 et seq. For a sample of the critical literature refuting cost-benefit analysis, see Frank Ackerman and Lisa Heinzerling, *Priceless*, op. cit.

makers who serve as agents for a particular confined community.”⁶¹ This partly explains the current struggle in developing and applying a common methodology to evaluate the extraterritorial impact of policies. As predicted, this question “cannot be resolved from within cost-benefit methodology itself,”⁶² but requires a clear, resounding political commitment.

In the case of developing countries, designing and implementing international costbenefit analysis requires special consideration of a number of issues. First, without a credible and operational pre-existing domestic cost-benefit analysis system, developing countries will not be given the chance to enter the international cost-benefit analysis regulatory cooperation experiment. Second, methodological and operational difficulties can easily arise in the decisionmaking processes of developing countries. Third, the use of regulatory tools, such as cost-benefit analysis, requires a high level of expertise and access to extensive resources and information. Most developing countries do not yet meet these pre-conditions. Finally, although developing countries could greatly benefit from the creation of international cost-benefit analysis frameworks, by gaining access to the developed world’s internal decisionmaking processes, they might struggle in setting up their own domestic cost-benefit analysis first. Policymakers in these countries have to evaluate and assess the weight of the tools they have available, and determine how to best use and combine them to achieve concrete results.

VI. Conclusion

Although cost-benefit analysis, following the successful diffusion of RIA, is statutorily required in an increasing number of countries throughout the world, it is not mandated at the international level. This should not come as a surprise as cost-benefit analysis has developed as a policy tool whose main concern has essentially been the domestic, rather than international, impact of regulatory action. Yet there seems to be an emerging belief that, despite this policy tool’s adoption and use domestically, it might—should it become part of the international regulatory cooperation agenda—help overcome regulatory divergence, thus leading to the greater efficiency and effectiveness

⁶¹ Douglas Kysar, *Regulating from nowhere*, op. cit., p. 18.

⁶² Ibid.

of regulatory policy at both the domestic and international level. However, to be meaningful in an international cooperation context, cost-benefit analysis has to be broadened in scope so as include also extra-territorial impacts. As illustrated above, to define the exact scope of an international cost-benefit analysis is an eminently political decision that clearly faces methodological and institutional challenges. Overall, it seems that the use of cost-benefit analysis in the context of international regulatory cooperation might face a similar fate as within the domestic context: although it might promote benefits across jurisdictional lines, cost-benefit analysis might also encounter vivid resistance and methodological conundrums.

On the positive side, the introduction and diffusion of international cost-benefit analysis through international regulatory cooperation may —in several regulatory realities— help reduce regulatory divergence because the decisionmaking process is believed to become more open and transparent. In particular, by increasing the share of information states exchange during the decisionmaking process, international cost-benefit analysis might ensure that states receive ‘early warnings’ on forthcoming legislation. This might contribute to a more inclusive and reflexive regulatory process, which might address the emerging gap between ‘regulatory jurisdiction’ and ‘regulatory impact’ which accompanies the globalization of markets. On the negative side, there are clear limits to how far cost-benefit analysis might be developed and used beyond the nation-state. Although cost-benefit analysis seems potentially useful in checking the economic optimality of domestic trade-offs having extraterritorial effects, there are latent problems in turning this promise into reality. International cost-benefit analysis, as it is developing within the international regulatory cooperation framework, is not “global” in scope and it is eminently used as a “fire-alarm” for trade partners affected by proposed regulation. Yet the emergence of an increasing number of policy challenges of global scope, such as those raised by climate change, may provide incentives to policymakers to depart from past practices, which tended to limit their analysis to impacts experienced within domestic borders, and to develop global measurements.⁶³

The regulatory cooperation experience, which has developed around cost-benefit analysis during recent years, is still in its infancy and has brought

⁶³ For a skeptical view on the possibility to use cost-benefit analysis in tackling global issues such as climate change, see, e.g., ROSE-ACKERMAN, Susan. Putting cost-benefit analysis in its place: rethinking regulatory review. *U. Miami L. Rev.*, Winter 2011.

about mixed results. It is not only recent but also incomplete. It is part of a broader transnational dialogue on regulatory reform, whose declared goal is to develop shared substantive standards of impact assessment, but which thus far has not delivered its promises. On the exact role that cost-benefit analysis may play beyond the nation-state, the jury is still out.

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