DOUTRINAS

Regulatory competition theory: the case of environmental regulation

REGULATORY COMPETITION THEORY: THE CASE OF ENVIRONMENTAL REGULATION

Fábio Morosini

Professor, Federal University of Rio Grande do Sul School of Law, Porto Alegre, Brazil. Ph.D. (2007), LL.M. (2001), (University of Texas at Austin); LL.M. (Honors), (University of Paris 1/ Institute > of Political Studies of Paris); LL.B. (2000), (Catholic University of Rio Grande do Sul).

e-mail: fmorosini@hotmail.com

RESUMO

Este artigo revisa a literatura sobre a teoria da competição regulatória, baseada na contribuição de Charles Tiebout, que apresenta uma solução para o nível de despesas para bens públicos que reflita as preferências da população mais adequadamente do que podem ser refletidas em nível nacional. A teoria da competição regulatória sustenta que a harmonização regulatória pode reduzir o nível de proteção ambiental, e que a regulação ambiental tende a ser mais efetiva quando se atribui às jurisdições adotarem formas competitivas de regulação. A primeira parte do artigo examina os fundamentos econômicos da teoria e a segunda parte revisa como a teoria da competição regulatória tem sido aplicada no direito, particularmente na regulação ambiental. Este artigo conclui que existe um padrão similar de interpretação entre economistas e juristas relativamente à regulação e seus efeitos no meio ambiente.

ABSTRACT

This article reviews the literature on regulatory competition theory, based on the work of Charles Tiebout, who presents a solution for the level of expenditures for local public goods which reflects the preferences of the population more adequately than they can be reflected at the national level. Regulatory competition theory asserts that regulatory harmonization may actually reduce the level of environmental protection, and that environmental regulation is likely to be most effective when jurisdictions are allowed to adopt competing regulatory approaches. The first part of the article examines the economic foundations of the theory and the second part of the article reviews how the theory of regulatory competition has been applied in law, with an emphasis on environmental regulation. This article concludes that there exists a similar interpretation pattern concerning regulation and its effects on the environment both among economists and lawyers.

Palavras-chave: teoria da competição regulatória, regulação ambiental.

1. Introduction

Regulatory competition theory asserts that there are significant welfare gains to be derived from allowing a proliferation of different standards to be adopted by different governmental authorities. This article reviews the most relevant literature on the theory of regulatory competition from both economic and legal perspectives. The first part of this article explains the foundational elements of that theory in economic terms. One school of thought defends that interjurisdictional competition is a beneficent force that, similar to its function in the market for private goods, compels public agents to make efficient decisions. On the other hand, others argue that the conditions under which interjurisdictional competition produces an equilibrium that is Pareto optimal are quite limited.

The second part of this article examines the theory of regulatory competition in law, particularly environmental regulation. It starts by explaining the rationale behind the first-generation thinking on environmental regulation, which argues that interjurisdictional competition decreases social welfare. It then addresses the arguments of the second-generation thinking on environmental regulation, which asserts that interjurisdictional competition produces efficient environmental decision-making and enhances social welfare. Finally, third-generation thinking on environmental regulation emerges and breaks with unidirectional conclusions about the proper governmental level of environmental policymaking.

2. The economics of the regulatory competition theory

Two contrasting views on interjurisdictional competition divide the literature on local public finance.[1] The seminal work of Charles Tiebout[2] contends that interjurisdictional competition is a beneficent force that, similar to its function in the market for private goods, compels public agents to make efficient decisions.[3] Tiebout's economic model for public expenditures assumes that[4] consumer-voters are fully mobile and will move to a community that best satisfies their preferences patterns. In this model, differences across residents in preferences for environmental quality are not taken into account, because migration ("voting with one's feet") should eliminate such differences, giving rise to jurisdictions defined by constituents' preferences for environmental standards and other public goods.[5] Tiebout's model also assumes that consumer-voters are fully informed about revenue and expenditure patterns, consumer-voter are free to live in a variety of communities, there are no restrictions due to employment opportunities and everyone is assumed to live on dividend income. Under the model, public services supplied show no external economies or diseconomies between communities and there is an optimum community size for every pattern of community services, whereas the older residents of the community set community services and the number of residents for which services can be produced at the lowest average cost defines optimality. Finally, the model assumes that communities below the optimum size seek to attract new consumer-voters to lower the average costs of providing services.

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[1] *See* Wallace E. Oates & Robert M. Schwab, *Economic Competition among Jurisdictions: Efficiency Enhancing or Distortion Inducing?*, 35 J. PUB. ECON. 333 (1988) (arguing that local choices under simple-majority rule will be socially optimal for jurisdictions homogeneous in workers and that distortions in local fiscal decisions and in local environmental choices arise in cases where jurisdictions are not homogeneous).

[2] *See* Charles M. Tiebout, *A Pure Theory of Local Expenditures,* LXIV THE JOURNAL OF POLITICAL ECONOMY 416 (1956) ; *But see* Truman F Bewley, *A Critique of Tiebout's Theory of Local Public Expenditures*, 49 ECONOMETRICA 713 (1981) (arguing that the conditions under which interjurisdictional competition produces an equilibrium that is Pareto optimal are quite limited).

[3] *See* Oates and Schwab, *supra* note 1.

[4] Tiebout, *supra* note 2, at 419.

[5] *See* John Douglas Wilson, *Capital Mobility and Environmental Standards: Is There a Theoretical Basis for a Race to the Bottom*?, *in* 1 FAIR TRADE AND HARMONIZATION: PREREQUISITES FOR FREE TRADE? 393, 400 (Jagdish N. Bhagwati & Robert E. Hudec eds., 1996).

Under the Tiebout's economic model, perfect mobility is assumed and it is subject to preferences of consumer-voters, who will move from communities with greater than optimal size to communities with less than optimal size. His model implies that each community has a revenue and expenditure pattern that reflects the desires of its residents.[6] Tiebout's model also assumes that local governments do not adapt to consumer-voter's preferences; on the contrary, the local governments that attract the optimum number of residents are viewed as being adopted by the economic system.[7] Finally, Tiebout's model compares prices in the private market with taxes in the community.[8] Tiebout concludes that interjurisdictional competition is desirable[9] and that a race to the bottom is precluded because local governments have a considerable ability to use tax instruments to effectively charge efficient cash payments from firms.[10]

William Fischel extended Tiebout's economic model to the environmental protection versus firms' location debate, to conclude that interjurisdictional competition is desirable whenever externalities are internalized; that is, polluters compensate local residents for forgone environmental quality.[11]

An influential article by Wallace Oates and Robert Schwab concluded that interjurisdictional competition might be a source of distortion in public choices.[12] One strand of this line of argument suggests that public agents, in competition for new industry, will lower taxes and other sources of costs to consumer-voters to such a point that public outputs will be provided at suboptimal levels.[13] In this scenario, Oates and Schwab conclude that a race to the bottom is likely to occur if capital is taxed at a positive rate, considering the optimal rate is zero.[14] On the other hand, a race to the top is expected when capital is taxed at inefficiently low rates.[15]

These authors make two distinct contributions with regard to economic competition among jurisdictions. First, "for jurisdictions homogeneous in workers, local choices under simple majority rule will be socially optimum; such jurisdictions select a zero tax rate on capital and set a standard for local environmental quality such that marginal willingness-to-pay equals the marginal social costs of a cleaner environment."[16] For this homogeneous group, "competition among jurisdiction is thus conductive to efficient outcomes."[17]

Second, "in cases where jurisdictions are not homogeneous or, where, for various reasons, they set a positive tax rate on capital, distortions arise not only in local fiscal decisions, but also in local environmental choices."[18] Thus, Oates and Schwab's investigation points at three different sources of potential distortion in local decision-making.[19] If the jurisdiction in competition for new industry and jobs does not have access to efficient tax instruments, distortions will occur in the fiscal and environmental decisions. Another potential distortion addresses the incompatibility of public decisions with the will of the consumer-voter, i.e the

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[6] *Id.* at 420.
[7] *Id.*
[8] "Just as the consumer may be visualized as walking to a private market place to buy his goods, the prices of which are set, we place him in the position of walking to a community where the prices (taxes) of community services are set." *Id.* at 422.
[9] *Id.* at 418.
[10] *See* Wilson, *supra* note 5, at 402.
[11] *See* William A. Fischel, *Fiscal and Environmental Considerations in the Location of Firms in Suburban Communities*, *in* FISCAL ZONING AND LAND USE CONTROLS 119 (Edwin S. Mills & Wallace E. Oates eds., 1975) (provided that consumer-voters are fully mobile and are not sensitive to employment opportunities).
[12] *See* Oates and Schwab, *supra* note 1, at 334.
[13] WALLACE E. OATES, FISCAL FEDERALISM 142-43 (1972).
[14] *Id.* at 408 ("Governments will view capital as being undersupplied because of the tax distortion, and they will possess incentives to lower environmental quality to inefficiently low levels to attract scarce resource.").
[15] Wilson, *supra* note 5, at 394-95, 403.
[16] *See* Oates and Schwab, *supra* note 1, at 333.
[17] *Id.* at 338-39 and n.10.
[18] *Id.*
[19] *Id.* at 350-51.

public choice problem. Finally, distortion in local decision-making will likely occur in the presence of conflicts of interest within a heterogeneous community.

Distortions in environmental decisions are expected to occur because, in competing for new businesses, states will lower their environmental standards to reduce costs of potential entrants.[20] This scenario allowed Cumberland to conclude that "local setting of standards for environmental quality would be subject to 'destructive interregional competition.'"[21] Accordingly, centralized governance at the central level is needed to avoid environmental degradation originated from local or state regulation.[22]

A more recent study conducted by John Douglas Wilson[23] examines the theoretical literature on the race-to-the-bottom over environmental standards. Built on the premise that no race can occur if there are no constraints in tax instruments and the economy is free of distortions and competitive,[24] he concludes that the chances for a race-to-the-bottom to occur are at best mixed.[25] According to Wilson's reading of the local-public-economics literature, a race to the bottom "is not a generic feature of the system of independent governments. Models of a 'race' tend to be incomplete, because they fail to justify the absence of more direct means of attracting capital to a jurisdiction, most notably direct subsidies or at least reduced tax rates on capital. Other models give rise to the opposite problem, NIMBY, where environmental standards are inefficiently restrictive."[26]

Arik Levinson's contribution to environmental regulations and industry location concludes that despite "anecdotal evidence that political jurisdictions (national or sub-national) pass environmental laws with an eye toward attracting (or retaining) industry, there is no evidence that industry responds to differences in these laws in significant ways."[27] As for the relation between international environmental regulation and industrial flight, Levinson concludes that survey evidence does not support the claim that strict environmental standards gives rise to industrial flight, nor that lax environmental regulation creates pollution havens.[28] This conclusion is attributable to his findings that there is a large difference from what firms say they do in a survey to what they actually do in practice.[29] In addition, international studies on environmental regulation and competitiveness suffer from lack of information about relative environmental compliance costs and/or they rely on aggregate data.[30] As to the relation between US environmental regulation and industrial flight, Levinson contends that, just like the related international experience, it is difficult to find direct evidence of firms relocating within the country[31] or that environmental regulation affect investment to a degree that is statistically or economically relevant.[32] Finally, he offers three possible explanations for the discrepancy between the industrial flight rhetoric caused by lax environmental standards and the lack of economic evidence in that regard.[33] One explanation is that environmental regulation in developing countries promotes foreign direct investment, rather than deter it. Another is that

[20] *See* Oates and Schwab, *supra* note 1, at 334.
[21] John H. Cumberland, *Interregional Pollution Spillovers and Consistency of Environmental Policy*, *in* REGIONAL ENVIRONMENTAL POLICY: THE ECONOMIC ISSUES 255-81 (H. Siebert et al. eds., 1979); *Efficiency and Equity in Interregional Environmental Management* , REV. OF REGIONAL STUD., No. 2, 1-9 (1981).
[22] *Id.*
[23] *See* Wilson, *supra* note 5, at 393.
[24] *Id.* at 394.
[25] *Id.* at 396.
[26] *See id.* at 423-24.
[27] Arik Levinson, *Environmental Regulations and Industry Location: International and Domestic Evidence*, *in* 1 FAIR TRADE AND HARMONIZATION: PREREQUISITES FOR FREE TRADE? 430, 430 (Jagdish N. Bhagwati & Robert E. Hudec eds., 1996).
[28] *Id.* at 435.
[29] *Id.*
[30] *Id.* at 442.
[31] *Id.* at 443.
[32] Arik Levinson, *Environmental Regulations and Industry Location: International and Domestic Evidence*, *in* 1 FAIR TRADE AND HARMONIZATION: PREREQUISITES FOR FREE TRADE? (Jagdish N. Bhagwati & Robert E. Hudec eds., 1996) 450 ("[T]he literature as a whole presents fairly compelling evidence across a broad range of industries, time periods, and econometric specifications, that regulations do not matter to site choice.").
[33] *Id.* at 452.

large pollution-intensive industry exists in oligopolistic markets, where firms are not sensitive to competitive forces such as differences in environmental standards. Levinson also contends that:

> *[P]oliticians receive support from many sources, including industry groups using pollution-intensive production processes. One convenient and credible way of justifying favorable treatment for these industries is to argue that regulations threaten their competitive position and that those industries might be forced to relocate.*[34]

Alvin K. Klevorick argues that, regardless of whether the concern over the race to the bottom is justified or not, harmonization of environmental standards will not remedy the problems attributable to interjurisdictional competition.[35] He contends that the concerns behind criticism to the race to the bottom are not associated with interjurisdictional competition, but with the failure of individual states to achieve certain standards.[36] Klevorick presents six rationales for preferring diversity of standards, as opposed to harmonization/uniformity.[37] First, diversity of standards provides room for competitive advantages. Second, equilibrium may be reached efficiently in a context of diverse levels of legal and capital infrastructure. Third, in a model of tax competition, uniform tax rates are not generally required by governments to attain joint revenue maximization. Fourth, diversity of standards is associated with the collective uncertainty over the correct standard and the risk of imposing one single and possibly wrong standard on all jurisdictions. Fifth, "imposing a uniform standard diminishes the wealth of those countries that have the capacity – because either the technology they possess or their predilection – to do perfectly well with a lower standard."[38] Sixth, imposing uniformity of standards raises the potential problem of overlooking the fact that differences in standard setting may be based on differences in the values of different populations, i.e. a moral philosophy problem.

3. Legal implications of the regulatory competition theory for the environment

Regulatory competition has generated a significant amount of legal scholarship in different areas of the law.[39] As in the debate among economists, legal scholars have not reached a consensus as to the effects of regulatory competition. As for environmental regulation, there is no agreement among those who contend that centralized regulation will

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[34] *Id.* at 453.
[35] *See* Alvin K. Klevorick, *Reflections on the Race to the Bottom*, *in* 1 FAIR TRADE AND HARMONIZATION: PREREQUISITES FOR FREE TRADE? 459 (Jagdish N. Bhagwati & Robert E. Hudec eds., 1996).
[36] *Id.* at 460.
[37] *Id.* at 464-66.
[38] *Id.* at 465.
[39] For vigorous discussions on regulatory competition in law, see HORATIA MUIR WATT, *Aspects Économiques du Droit International Privé*, *in* RECUEIL DES COURS: COLLECTED COURSES OF THE HAGUE ACADEMY OF INTERNATIONAL LAW 39 (2005); WILLIAM BRATTON ET. AL, INTERNATIONAL REGULATORY COMPETITION AND COORDINATION (1996); GEORGE A. BERMANN ET AL., TRANSATLANTIC REGULATORY COOPERATION (2000); DANIEL C. ESTY & DAMIEN GERADIN, REGULATORY COMPETITION AND ECONOMIC INTEGRATION (2001); George A. Bermann, *Regulatory Federalism: A Reprise and Introduction*, 2 COLUM. J. EUR. L. 395 (1996); Symposium, *Regulatory Competition in Focus*, 3 J. OF INT'L ECON. L. 215 (2000); Roberta Romano, *The Need for Competition in International Securities Regulation*, 2 THEORETICAL INQUIRIES L. 387 (2001); Frederick Tung, *Passports, Private Choice, and Private Interests: Regulatory Competition and Cooperation* in *Corporate, Securities, and Bankruptcy Law*, 3 CHI. J. INT'L L. 369 (2002); Andrew T. Guzman, *Is International Antitrust Possible?*, 73 N.Y.U. L. REV. 1501 (1998); Andrew T. Guzman, *Introduction – International Regulatory Harmonization*, 3 CHI. J. INT'L L. 271 (2002); Andrew T. Guzman, *Antitrust and International Regulatory Federalism*, 76 N.Y.U. L. REV. 1142 (2001); Andrew T. Guzman, *Public Choice and International Regulatory Competition*, 90 GEO. L. J. 971 (2002); David Charny, *Competition Among Jurisdictions in Formulating Corporate Law Rules: American Perspective on the "Race to the Bottom" In European Communities*, 32 HARV. INT'L L. J. 423 (1991); Joel P. Trachtman, *International Regulatory Competition, Externalization, and Jurisdiction*, 34 HARV. INT'L L. J. 47 (1993); Michael Abramowicz, *Speeding Up the Crawl to the Top*, 20 YALE J. on REG. 139 (2003); Kal Raustiala, *Compliance & Effectiveness in International Regulatory Cooperation*, 32 CASE W. RES. J. INT'L L. 387 (2000); Damien Geradin, *Competition Between Rules and Rules of Competition: A Legal and Economic Analysis of the Proposed Modernization of the Enforcement of EC Competition Law*, 9 COLUM. J. EUR. L. 1 (2002).

avoid environmental degradation[40] and those who state that the race to the bottom[41] argument has no support in existing models of interjurisdictional competition.[42]

3.1. First-Generation Thinking:[43] state environmental regulation decreases social welfare

Professor Richard Stewart summarizes the argument in favor of centralized environmental decision-making in four rationales:[44] the tragedy of the commons and national economies of scale,[45] disparities in effective representation, spillovers, and moral ideals and the politics of sacrifice.

The tragedy of the commons rationale arises in an interjurisdictional competition structure where public decisions, adopted by self-interested bureaucrats leave all bureaucrats worse off than they would have been had they adopted policies formulated collectively.[46] Besides environmental quality, constituents also value employment and economic growth.[47] Stringent environmental standards of one community against lax environmental standards of others may drive businesses and jobs away of the former to the latter. In the name of employment and economic growth, communities with high environmental standards may decide to lower their demands for environmental quality in an attempt to attract or hold industry, leading to the creation of jobs, and consequently increases in wages and taxes.[48] Similar moves in neighboring communities will lead to a race to the bottom in environmental regulation, in the name of jobs and economic development.[49] Stewart argues that the race to the bottom argument would be corrected by the imposition of nationwide stringent environmental standards.[50] Moreover, economies of scale benefits would justify centralized environmental decision-making for data collection and analysis, and other technical issues.[51]

The second rationale listed by Stewart for preferring environmental decision-making at the national level relates to claims of disparities in effective environmental groups' representation vis-à-vis industry and unions.[52] Stewart's central contention is that environmental groups have a greater impact on policy decisions taken at the national level, for environmental groups are weakly represented locally and transaction costs for concerted action are exacerbated by technical complexities of environmental issues.[53] These comparative disadvantages will often be reduced, however, if decisions are taken at the national level,

40 The most representative scholarship of this argument was developed by Professor Richard B. Stewart. See Richard B. Stewart, Pyramids of Sacrifice? Problems of Federalism in Mandating State Implementation of National Environmental Policy, 86 YALE L. J. 1196 (1977) [hereinafter Pyramids of Sacrifice]; Richard B. Stewart, The Development of Administrative and Quasi-Constitutional Law in Judicial Review of Environmental Decision-making: Lessons from the Clean Air Act, 62 IOWA L. REV. 713 (1977).
41 Race-to-the-bottom "is a race from the desirable levels of environmental quality that states would pursue if they did not face competition for industry to the increasingly undesirable levels that they choose in the face of such competition." Richard L. Revesz, Rehabilitating Interstate Competition: Rethinking the "Race-to-the-bottom" Rationale for Federal Environmental Regulation, 67 N.Y.U. L. REV. 1210 (1992) [hereinafter Rehabilitating Interstate Competition].
42 Professor Richard L. Revesz is the best account of this line of argument. See id. at 1210, 1211-12 (arguing that "competition among states for industry should not be expected to lead to a race that decreases social welfare; indeed, as in other areas, such competition can be expected to produce efficient allocation of industrial activity among states.").
43 The term is coined by Daniel Esty. See Daniel C. Esty, Revitalizing Environmental Federalism, 95 MICH. L. REV. 570, 600 (1996).
44 See Stewart, Pyramids of Sacrifice, supra note 40, at 1211.
45 Economies of scale are defined as "a situation in which a firm can increase its output more than proportionally to its total input cost." See EDGAR K. BROWNING & MARK A. ZUPAN, MICROECONOMICS: THEORY & APPLICATION 208 (7th ed. 2001).
46 Stewart, Pyramids of Sacrifice, supra note 40, at 1211.
47 Id.
48 See Revesz, Rehabilitating Interstate Competition, supra note 42, at 1215.
49 Stewart, Pyramids of Sacrifice, supra note 40, at 1212.
50 Id.
51 Id.
52 Id. at 1213.
53 Id.

because aggregate costs will be reduced and critical mass will be achieved. Moreover, centralized environmental decision-making affords scale economies in fundraising and greater political support from Washington bureaucrats.[54]

Interstate spillovers/externalities appear as the third rationale for centralized environmental decision-making.[55] Stewart contends that physical, psychic or economic spillovers are associated with the regulatory model based on decision-making at the state or local level. Provided that the methods available to the states involved to correct these distortions have proven ineffective under state regulation, federal intervention appears as the best form of eliminating the more problematic types of spillovers.[56]

The fourth rationale in favor of centralization of environmental decision-making is related to moral ideals and the politics of sacrifice,[57] which, in the words of Stewart, "reflects the sacrifice of preference-satisfaction in order to fulfill duties to others, or to transform existing preference structures in the direction of lessened dependence upon consumption of material goods and greater harmony with the natural environment."[58] In other words, Stewart's sacrifice is translated into renunciation of maximum economic growth to preserve and promote non-economic goals, such as the life and health of plants and animals for future generations. These objectives, however, cannot be achieved under a model of state regulation. States will find it harder to undertake sacrifices if competing jurisdictions do not.[59] Furthermore, sacrifices undertaken in response to a national measure will dilute the costs in local expenditures.[60] In addition, public reaction against measures taken pursuant environmental objectives will have less of an impact on Washington bureaucrats than at the local/state level, making it harder for states to abandon it.[61] Finally, in the face of public choice concerns,[62] it is assumed that groups seeking higher levels of environmental protection are more effective at the federal level than at the state/local level, which leads to the conclusion that federal regulation is arguably more protective of the environment.[63]

But if the arguments in favor of nationally decided environmental standards raised by Stewart seem convincing, it should not go without saying that they are not free of criticism, as readily offered by Stewart himself[64] and other influential legal scholars.

3.2. Second-Generation Thinking:[65] State environmental regulation increases social welfare

Stewart identifies several potential sources of local resistance to national environmental policies: diseconomies of scale,[66] impairment of self-determination, and national ideals as "Pyramids/politics of Sacrifice." Esty addresses arguments related to the benefits of diversity, public choice, and transboundary pollution spillovers.[67] Finally, Revesz challenges

[54] Stewart, Pyramids of Sacrifice, supra note 40, at 1213-14.
[55] Id. at 1215.
[56] Id. at 1216.
[57] Id. at 1217.
[58] Id.
[59] Stewart, Pyramids of Sacrifice, supra note 40, at 1217.
[60] Id. at 1218.
[61] *Id.*
[62] *See infra* p. 15.
[63] Revesz, Rehabilitating Interstate Competition, supra note 42, at 1223.
[64] See Stewart, Pyramids of Sacrifice, supra note 40, at 1219-22.
[65] See Esty, Revitalizing Environmental Federalism, supra note 422, at 605.
[66] Diseconomies of scale are defined as "a situation in which a firm's output increases less than proportionally to its total input costs." See BROWNING & ZUPAN, supra note 45, at 208.
[67] See Esty, Revitalizing Environmental Federalism, supra note 43, at 605.

race-to-the-bottom fears, and argues that interjurisdictional competition produces efficient environmental decision-making and enhances social welfare.[68]

The diseconomies of scale argument arise whenever the costs to the state government in implementing and complying with a particular environmental policy is higher than the benefits perceived by them. It is typical of a federal regulatory authority to implement uniform standards across the federal states. In developing a uniform environmental policy designed to correct interstate externalities, it is not surprising that some states will end up bearing greater costs than benefits associated with such a policy. Even if total gains of the policy compensate total costs, some states will not be motivated to enforce the policy that entails greater local burdens than benefits.[69]

While recognizing that environmental interests are likely to have greater policy impact if shifted from states to the federal government, Stewart acknowledges that this is only possible at the expense of the impairment of state-determination.[70] Problems arise whenever decisions about environmental quality have notable impacts on other sectors of the economy that touch state citizens' interests directly.[71] Moreover, federal environmental measures decrease local participation considerably.[72]

Stewart's idealized "Pyramids/politics of Sacrifice" is likely to find shortcomings, which may well compromise the enforcement of national environmental measures.[73] To some, the sacrifices undertaken in the name of a federal environmental policy may be excessive as the case when the poor face increased utility bills.[74] In the words of Stewart, "[r]esistance and resentment may be heightened by the fact that many environmental programs distribute the costs of controls in a regressive pattern while providing disproportionate benefits for the educated and wealthy, who can better afford to indulge an acquired taste for environmental quality than the poor, who have more pressing needs and fewer resources with which to satisfy them."[75] Even more problematic, perhaps, is Stewart's flawed presumption that it is moral for the federal government to force people to pay for goods they don't want.[76]

Daniel Esty summarizes additional arguments in favor of decentralized environmental policy making: benefits of diversity, public choice and transboundary pollution spillovers. First and foremost, decentralized regulatory decision-making encourages diversity in environmental regulation, which has two main advantages: from the standpoint of economics, diversity of environmental background conditions, emissions levels, risk preferences, climate, policy priorities, income levels and weather, accompanied by regulation that takes these differences into account, increases social welfare.[77] From much of the legal and political standpoint, regulatory diversity across states or localities encourages policy innovation, as each state or locality is a different "laboratory" for public policies.[78]

Furthermore, Esty notes, theorists who contend that decentralized environmental regulation is welfare increasing quite often base their claim on the theory of public choice or interest group:[79]

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[68] Revesz, Rehabilitating Interstate Competition, supra note 42, at 1244.
[69] See Stewart, Pyramids of Sacrifice, supra note 419, at 1220.
[70] Id.
[71] Id.
[72] Id.
[73] Id. at 1221.
[74] Stewart, Pyramids of Sacrifice, supra note 419, at 1221.
[75] See id.
[76] See Henry N. Butler & Jonathan R. Macey, Externalities and the Matching Principle: The Case for Reallocating Environmental Regulatory Authority, Symposium, Constructing a New Federalism, YALE J. on REG. & YALE L. & POL'Y. REV. (1996).
[77] See Esty, Revitalizing Environmental Federalism, supra note 43, at 606-07.
[78] Id. at 606.
[79] I rely on Dennis Mueller's definition of public choice as "the economic study of nonmarket decision making, or simply the application of economics to political science." See DENNIS MUELLER, PUBLIC CHOICE II 1 (1989); DANIEL A. FARBER & PHILIP P. FRICKEY, LAW AND PUBLIC CHOICE: A CRITICAL INTRODUCTION 7 (1991).

In the economists' version of the interest-group theory of government, legislation is supplied to groups or coalitions that outbid rival seekers of favorable legislation. The price that the winning group bids is determined both by the value of legislative protection to the group's members and the group's ability to overcome free-rider problems that plague coalitions. Payments take the form of campaign contributions, votes, implicit promises of future favors, and sometimes outright bribes. In short, legislation is 'sold' by the legislature and 'bought' by the beneficiaries of the legislation.[80]

Theorists argue that decisions taken at higher and more remote levels of regulation tend to be less representative of constituents' will than policies scrutinized locally.[81] In addition, it is argued that "rent-seeking"[82] efforts are greater at the federal, rather than at the state regulatory level.[83] In other words, instead of federal regulation correcting distortions in disparities of political power representation between environmental groups and industry's interest; quite the contrary, it only works to augment it.

Esty also remarks that the relation between interstate pollution spillovers and federal regulation takes two different strands in the second-generation thinking. On the one hand, one line of thought acknowledges the existence of interjurisdictional externalities, but proceeds with policy prescriptions that does not address these externalities.[84] On the other, theorists contend that interstate pollution spillovers should not require governmental attention, because "[a]lthough externalities or other failures may arise, […] the capacity of government to regulate effectively is so limited that welfare losses are minimized by letting unregulated forces operate" (the Nirvana Fallacy).[85]

In a highly influential article that best represents second-generation thinking, Professor Richard Revesz challenges the settled understanding that interjurisdictional competition will lead states to a race to the bottom in environmental standards in an attempt to attract and retain industry.[86] Revesz claims that race-to-the-bottom arguments find no support in existing models of interjurisdictional competition, and that, on the contrary, state competition for industry can, indeed, produce an efficient allocation of industrial activity.[87] By comparing interstate competition for industrial activity with markets for traditional goods, Revesz finds no basis for the claim that the former will result in a competition that decreases welfare.[88] Finally, Revesz contends that federal regulation aimed at correcting a race-to-the-bottom over environmental standards is likely to create distortions elsewhere, by relaxing regulatory controls

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[80] See Richard Posner, Theories of Economic Regulation, 5 BELL. J. ECON. & MGMT. SCI. 335 (1974); FARBER & FRICKEY, supra note 79, at 15.
[81] See Esty, Revitalizing Environmental Federalism, supra note 43, at 609-10.
[82] "Rent-seeking refers to the attempt to obtain economic rents (i.e., payments for the use of an economic asset in excess of the market price) through government intervention in the market." See Jonathan R. Macey, Promoting Public-Regarding Legislation Through Statutory Interpretation: An Interest Group Model, 86 COLUM. L. REV. 223, 224 n.6 (1986).
[83] See Esty, Revitalizing Environmental Federalism, supra note 43, at 610.
[84] Id. at 612.
[85] *Id.* at 612-13. Note, however, that the Nirvana Fallacy argument is not a claim against federal governmental regulation, but a claim against governmental regulation altogether, grounded on the assumption that governments are ill equipped to design and implement regulatory policies that respond to market failures in a manner that increases social welfare.
[86] Revesz, *Rehabilitating Interstate Competition*, *supra* note 117, at 1211-12. *See generally* Richard L. Revesz, *The Race to the Bottom and Federal Environmental Regulation: A Response to Critics*, 82 MINN. L. REV. 535 (1997); Richard L. Revesz, *Federalism and Environmental Regulation: A Normative Critique*, *in* THE NEW FEDERALISM: CAN THE STATES BE TRUSTED? 97 (John Ferejohn & Barry R. Weingast eds., 1997); Richard L. Revesz, *Federalism and Environmental Regulation: Lessons for the European Union and the International Community*, 83 VA. L. REV. 1331 (1997). *See also* Richard L. Revesz, *Federalism and Interstate Environmental Externalities*, 144 U. PA. L. REV. 2341 (1996) (criticizing the manner in which the federal environmental statutes have dealt with the problem of interstate externalities). *But see* Kirsten H. Engle, *State Environmental Standard-Setting: Is There a "Race" and Is It "to the Bottom"?*, 48 HASTINGS L. J. 271 (1997); Joshua D. Sarnoff, *The Continuing Imperative (But Only from a National Perspective) for Federal Environmental Protection*, 7 DUKE ENVLT. L. & POL'Y F. 225 (1997); Peter P. Swire, *The Race to Laxity and the Race to Undesirability: Explaining Failures in Competition Among Jurisdiction in Environmental Law*, 14 YALE J. on REG. 67 (1996).
[87] Revesz, *Rehabilitating Interstate Competition*, *supra* note 42, at 1211-12.
[88] *Id.* at 1234.

in other areas.[89] In other words, even if the contention that state regulation favors a race-to-the-bottom in environmental standards holds true, federal regulation will have negative effects on other state regulatory matters (such as worker safety and minimum wage laws)[90] or fiscal interests.[91] Perhaps more problematic to a federal system are Revesz findings that the logic behind federal environmental regulation is a direct attack to the concept of federalism.[92]

3.3. Third-Generation Thinking:[93] Multi-Tier Environmental Regulation

More recently, Professor Daniel Esty has challenged the presumption that decentralized approaches to environmental policy are more welfare enhancing than centralized regulatory efforts.[94] However, his contribution is not intended to be a new defense of environmental policy decided at the federal level; it is intended to be a "break with unidirectional conclusions about the proper governmental level of environmental policymaking."[95]

Esty's study addresses three fundamental questions concerning decentralized environmental policy:[96] which governmental level best resolves technical issues (the technical argument), whether a more decentralized regulatory approach will ameliorate or aggravate the structural impediments to achieving least-social-cost environmental policies (the structural question), and whether public choice problems associated with environmental policymaking are reduced or worsened by decentralization.

The analysis of the question of which regulatory approach best addresses technical environmental problems does not support the supposedly settled second-generation decentralized regulation claim. In order to address this question, Esty breaks the analysis into four instances: problem identification,[97] data collection and analysis,[98] policy design,[99] and implementation, enforcement, and policy evaluation.[100] According to Esty, identification of risks and harms to the environment can benefit both from centralized and decentralized regulation, depending on the problem at hand.[101] Some problems are peculiar to certain localities, which economically may not justify having observers all over the country. However, other environmental problems may benefit from nation-wide purview, such as the case of identifying chlorine compounds (CFCs) that deplete the ozone layer.[102] Furthermore, economies of scale may justify data collection and analysis at the federal level.[103] For example, decentralized jurisdictions will likely conduct the same studies several times and will spend time agreeing on an efficient division of technical labor.[104] Poor jurisdictions may lack the capacity to conduct reliable data collection and analysis.[105] Esty also suggests that environmental policies designed nationally, implemented locally and following nonuniform standards are the best alternative to address welfare-reducing races to the bottom or top and risks of structural failures from

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[89] *Id.* at 1212.
[90] Esty, *Revitalizing Environmental Federalism*, *supra* note 43, at 653 n.144.
[91] Revesz, *Rehabilitating Interstate Competition*, *supra* note 42, at 1245.
[92] *Id.*
[93] *See generally* Esty, *Revitalizing Environmental Federalism*, *supra* note 43.
[94] *See id.* at 570 (arguing for a multi-tier regulatory structure to tackle the complexity and diversity of environmental problems).
[95] *Id.* at 571.
[96] *Id.* at 613.
[97] *Id.* at 614.
[98] *Id.*
[99] Esty, *Revitalizing Environmental Federalism*, *supra* note 43, at 618.
[100] *Id.* at 623.
[101] *Id.* at 614.
[102] *Id.*
[103] However, one may not forget that the benefits of diversity (state-as-laboratories argument) may downplay the power of the argument in favor of centralized data collection and analysis. This is arguably the case when states are able to identify more effective policy tools, when the competition generated among decentralized jurisdictions is welfare-increasing, and when the particular environmental problem is geographically heterogeneous. *Id.* at 614-17.
[104] *See* Esty, *Revitalizing Environmental Federalism*, *supra* note 43, at 614-15.
[105] *Id.* at 615.

interstate externalities.[106] Finally, as a general rule, Esty states that implementation and enforcement of environmental measures are done best on a decentralized regulatory level, while policy evaluation is perceived to benefit from centralized regulation.[107]

Esty also addresses whether a more decentralized regulatory approach will ameliorate or aggravate the structural impediments to achieving least-social-cost environmental policies (the structural question). Esty concludes that structural problems are better dealt with a hybrid regulatory system.[108] Accordingly, "problems that are by-and-large local in scope (waste site cleanups, drinking water quality, and spending on playgrounds, for example) should be regulated at the local level. Problems that arise on regional scale (controlling pollution in a river system or an airshed, for example) should be managed on an ecosystem basis across states or even countries when necessary."[109] This structural question was analyzed under three different perspectives: physical externalities;[110] economic externalities;[111] and psychic externalities, internalities, and the choice of public.[112]

Decentralization of environmental regulation is grounded on the assumption that physical externalities are not worthy of attention.[113] However, scientific evidence has pointed to the contrary direction, showing various instances where pollution spillovers occur and decentralized environmental policies do very little to correct them.[114] The immediate question turns not on whether centralized regulation is required, but on what form of centralization is needed.

The economic externalities referred by Esty relate to the "race to the bottom" problem in environmental regulation, which is the fear that states/countries in competition for firms will lower their environmental standards to suboptimal levels in an attempt to attract or retain firms. Second-generation theorists consider that the fear of a race to the bottom in environmental regulation is unwarranted from a social welfare perspective.[115] Esty, on the other hand, concludes that "the scope for failure in the market for environmental-policy-determined location rights is significant enough to make untenable a presumption that regulatory competition in this domain will be welfare enhancing."[116] He asserts that "environmental regulation operates in a realm where quantitative welfare comparisons are difficult"[117] and contends that "politicians do not make environmental policy choices by equating the marginal costs and marginal benefits of lowering standards to gain a factory or to avoid losing one."[118] Esty also maintains that "governmental bodies are relatively weak instruments of market discipline."[119]

With regard to the choice of public, Esty notes that "a presumption in favor of decentralized environmental regulation cannot be justified because it prejudges the critical question of the relevant political community vis-à-vis the environmental problem at hand."[120] The sense of community in environmental regulation does not necessarily fit into the political subdivision (state/country) most closely connected to a given environmental policy. Needless to say environmental damages that take place in the Amazon, for instance, are everyone's concern, and not only to the concern of Brazilians. However, there are cases in which no harm

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[106] *Id.* at 619.
[107] *Id.*at 623-24.
[108] *Id.* at 647.
[109] *See* Esty, *Revitalizing Environmental Federalism*, *supra* note 43, at 648.
[110] *See id.* at 625-27.
[111] *Id.* at 627-38.
[112] *Id.* at 638-48.
[113] *Id.* at 625.
[114] This is the case of spillovers of DDT, SO2 and acid rain, heavy metals, and bioaccumulative toxics. *See* Esty, *Revitalizing Environmental Federalism*, *supra* note 43, at 625.
[115] *See id.* at 628.
[116] *Id.* at 634.
[117] *Id.* at 631-32.
[118] *Id.* at 632.
[119] *See* Esty, *Revitalizing Environmental Federalism*, *supra* note 43, at 633.
[120] *See id.* at 647.

is inflicted on a given community, even though they claim to have a legitimate interest into another country's environment.[121] Esty concludes that "the current devolutionary mood ignores this complex interdependence[,] [p]utt[ing] at risk some of the important benefits that accrue from having a broader political identity."[122]

The last question addressed by Esty is whether public choice problems associated with environmental policymaking are reduced or worsened by decentralization. In this regard, Esty finds no legitimate grounds to suspect that public choice problems would be accentuated by environmental regulation at the central level, and he notes that the opposite could be concluded provided that the media devotes much more attention to federal-level activities.[123]

4. Conclusion

This article has demonstrated that a similar interpretation pattern concerning regulation and its effects on the environment exists both among economists and lawyers. This consensus is divided into two main schools of thought. One school of thought concludes that interjurisdictional competition compels public agents to make efficient decisions that are welfare increasing. Another school of thought contends that diversity in environmental standards will not maximize welfare and will cause races to the bottom in environmental regulation. Under this approach, harmonization of environmental regulation will remedy the problems attributable to interjursidictional competition. A third sub-theory, led by Professor Esty, appears in the legal scholarship to contend that there isn't such thing as a one-size-fits-all regulatory approach to environmental policymaking and concludes that technical and structural matters will dictate the proper governmental approach. According to this sub-theory, it is often the case that a combination of interjurisdictional competition and harmonization creates the most efficient environmental decision-making structure.

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[121] *See* Panel Report, United States – Restrictions on Imports of Tuna, Aug. 16, 1991, GATT B.I.S.D. (39th Supp.) at 155, P 5.27 (unadopted Panel Report), *reprinted in* 30 I.L.M. 1594 (1991).
[122] *See* Esty, *Revitalizing Environmental Federalism*, *supra* note 43, at 643.
[123] *Id.* at 650.

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