

# TOWARD AN INTERNATIONAL AVIATION EMISSIONS AGREEMENT

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## INTRODUCTION

Global climate change is a catastrophe unfolding or a myth. Humans are responsible or they are not. The science behind these claims is “hard” or is “pseudo.” Humankind still has time to act or is already doomed.

The dichotomies embedded in the debates about global warming are now part of political life. While the 2009 “climategate” scandal tarnished climate science for a time,<sup>1</sup> the Intergovernmental Panel on Climate Change (“IPCC”) — an international scientific body established jointly by the United Nations (“U.N.”) and the World Meteorological Organization — has stood by its claim that global temperatures are rising because of rapid increases in greenhouse gas emissions caused by human activity.<sup>2</sup> Although the scientific merits of this claim remain contested,<sup>3</sup> global warming has become a politically dominant trope and has prompted states to consider significant remedial responses.<sup>4</sup> Accepting the IPCC’s claim, therefore, the

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<sup>1</sup> See, e.g., ROY W. SPENCER, *THE GREAT GLOBAL WARMING BLUNDER: HOW MOTHER NATURE FOOLED THE WORLD’S TOP CLIMATE CHANGE SCIENTISTS* 142 (2010).

<sup>2</sup> See IPCC, *CLIMATE CHANGE 2007: SYNTHESIS REPORT: SUMMARY FOR POLICYMAKERS* (2007), available at [http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4\\_syr\\_spm.pdf](http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_spm.pdf). On the potential adverse effects of global warming, see IPCC, *CLIMATE CHANGE 2007: IMPACTS, ADAPTATION AND VULNERABILITY* (Martin Parry et al. eds., 2007), available at [http://www.ipcc.ch/publications\\_and\\_data/ar4/wg2/en/contents.html](http://www.ipcc.ch/publications_and_data/ar4/wg2/en/contents.html). The IPCC has scheduled the release of its next inclusive report for 2014.

<sup>3</sup> See generally, e.g., S. FRED SINGER & DENNIS T. AVERY, *UNSTOPPABLE GLOBAL WARMING: EVERY 1,500 YEARS* (2007); JOHN ZYKROWSKI, *IT’S THE SUN, NOT YOUR SUV: CO2 WILL NOT DESTROY THE EARTH* (2008).

<sup>4</sup> As a *political* matter, and in order to support its exposition of a multilateral response, this Article assumes that the IPCC’s conclusions are correct: that global warming is a real phenomenon; that projected temperature increases are likely to have detrimental, if not catastrophic, effects on many countries in the world in the decades to come; and that these outcomes are due to anthropogenic greenhouse gas emissions. See generally IPCC, *CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS* (Susan Solomon et al. eds., 2007), available at [http://www.ipcc.ch/publications\\_and\\_data/publications\\_ipcc\\_fourth\\_assessment\\_report\\_wg1\\_report\\_the\\_physical\\_science\\_basis.htm](http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_wg1_report_the_physical_science_basis.htm). Though the problem is noticeably exacerbated by deforestation, see Toni Johnson, *Backgrounder: Deforestation and Greenhouse-Gas Emissions*, COUNCIL ON FOREIGN RELATIONS (Dec. 21, 2009), [http://www.cfr.org/publication/14919/deforestation\\_and\\_greenhousegas\\_emissions.html](http://www.cfr.org/publication/14919/deforestation_and_greenhousegas_emissions.html), and modern agricultural and land-use processes, see IPCC, *SPECIAL REPORT ON EMISSIONS SCENARIOS* 141–45 (2000), industrial emissions have driven the worldwide public debate concerning what (if anything) should be done to offset the environmental harm wrought by humanity. And while future negotiations for a comprehensive climate treaty cannot ignore any of the measurable contributors to global warming, we expect that more immediate attention will be paid to the manufacturing and

international community of states adopted an initiative that envisions a global governance structure to respond to climate change. They endorsed a consultative agreement, the U.N. Framework Convention on Climate Change (“UNFCCC”), which establishes a non-binding intergovernmental process to develop numerical targets for carbon dioxide emissions reduction.<sup>5</sup>

But the drafters of the UNFCCC expressly excluded the international aviation sector, which historically has been regulated separately from the rest of world trade.<sup>6</sup> Instead, the drafters assigned the development of targets for international aviation emissions reduction to a U.N. body, the International Civil Aviation Organization (“ICAO”).<sup>7</sup> ICAO has been the international aviation industry’s chief global regulator (primarily on technical issues of air navigation and safety) since its establishment in 1944 under the Convention on International Civil Aviation (the “Chicago Convention”).<sup>8</sup>

As the 2010 Copenhagen and 2011 Mexico City summits demonstrated, the UNFCCC process has been stalled and in some respects defeated by its quest for a binding, multilateral, and multisectoral emissions reduction strategy.<sup>9</sup> The most recent round of U.N.-sponsored climate talks, held in Durban, South Africa at the close of 2011, produced little more than an agreement to pursue an agreement, the fruits of which will not emerge until at least 2020.<sup>10</sup> Some commentators have, unsurprisingly, despaired of any possibility that a comprehensive global climate treaty can be achieved.<sup>11</sup>

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service (specifically transport) sectors that have a more visible role in emitting greenhouse gases.

<sup>5</sup> See United Nations Framework Convention on Climate Change, *opened for signature* May 9, 1992, 1771 U.N.T.S. 107.

<sup>6</sup> See Brian F. Havel & Gabriel S. Sanchez, *The Emerging Lex Aviatica*, 41 GEO. J. INT’L L. 639, 642–43 (2011).

<sup>7</sup> See ICAO, <http://www.icao.int> (last visited June 14, 2012) (on file with the Harvard Law School Library). For a detailed discussion of ICAO’s history, organizational structure, and functions, see LUDWIG WEBER, *INTERNATIONAL CIVIL AVIATION ORGANIZATION: AN INTRODUCTION* (2007).

<sup>8</sup> See Convention on International Civil Aviation, *opened for signature* Dec. 7, 1944, 15 U.N.T.S. 295 [hereinafter Chicago Convention].

<sup>9</sup> These stages in the negotiating process failed to achieve consensus on specific reduction targets. For a full archive of videos, documents, and other statements released during the 16th Conference of the Parties to the UNFCCC, see *Cancun Climate Change Conference — November 2010*, UNFCCC, [http://unfccc.int/meetings/cop\\_16/items/5571.php](http://unfccc.int/meetings/cop_16/items/5571.php) (last visited June 14, 2012) (on file with the Harvard Law School Library).

<sup>10</sup> See *Establishment of an Ad Hoc Working Group on the Durban Platform for Enhanced Action*, Draft Decision -/CP.17 (Dec. 2011), available at [http://unfccc.int/files/meetings/durban\\_nov\\_2011/decisions/application/pdf/cop17\\_durbanplatform.pdf](http://unfccc.int/files/meetings/durban_nov_2011/decisions/application/pdf/cop17_durbanplatform.pdf). While Durban promises a comprehensive climate change treaty to be completed by 2015, the proposed accord would not come into effect any sooner than 2020.

<sup>11</sup> See, e.g., William Yeatman, *Why a Climate Treaty is Impossible*, GLOBAL WARMING. ORG (Aug. 24, 2009), <http://www.globalwarming.org/2009/08/24/why-a-climate-treaty-is-impossible>; see also Ole Røgeberg et al., *International Climate Treaties: The Case for Pessimism*, 1 CLIMATE L. 177 (2010). Others, however, hold out hope. See, e.g., Press Release, U.N., UN Climate Change Conference in Cancun Delivers Balanced Package of Decisions, Restores Faith in Multilateral Process (Dec. 11, 2010), available at [http://unfccc.int/files/press/news\\_room/press\\_releases\\_and\\_advisories/application/pdf/pr\\_20101211\\_cop16\\_closing.pdf](http://unfccc.int/files/press/news_room/press_releases_and_advisories/application/pdf/pr_20101211_cop16_closing.pdf).

Certainly, no issue of shared global significance has ever been tackled on such a comprehensive scale.<sup>12</sup>

Viewed abstractly, negotiations for any sector-specific emissions treaty would likely be less fractious, since they would involve a narrower constellation of shareholders. This is even more true if there already exists significant political will among the stakeholders for serious emissions reduction. And if a sector-specific approach caps emissions in the sector at a level proportionate to the industry's contribution to global warming, then perhaps additional sectors could be disciplined along similar lines. These limited successes may, in time, yield more robust international cooperation on combating climate change.

We propose that a sectoralized treaty to reduce the emissions produced by international civil aviation is both feasible and normatively desirable. It is feasible because the principal stakeholders have acted publicly to make it so. The member states of ICAO, cooperating under the auspices of that organization, have already agreed in principle to develop market-based measures ("MBMs"), including taxes and carbon trading schemes,<sup>13</sup> to cut aviation emissions at the global level.<sup>14</sup> The International Air Transport Association ("IATA")<sup>15</sup> — the representative trade group for most of the

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<sup>12</sup> Such a treaty, presumably, would require consensus on apportioning the burdens of greenhouse gas reduction across the world's 194 states. Regions facing the greatest economic, ecological, and social harms from rising temperatures — for example, Africa and Southern Asia — are the least likely to accept onerous *ex ante* obligations to reduce emissions for *ex post* benefits. Rising powerhouses like China, Brazil, and Russia are also reluctant to assume emissions reduction obligations and have even advanced a doctrine — "common but differentiated responsibilities" — holding that the common goal of overcoming climate change must also recognize that nations such as the United States and the members of the European Union should bear much greater reduction costs because of their history of atmospheric pollution since the Industrial Revolution. Eric A. Posner & Cass R. Sunstein, *Climate Change Justice*, 96 GEO. L.J. 1565, 1583–1602 (2008). Embedded in this doctrine is a claim for reparations to be paid by historical polluters to current or potential victims of global warming. This Article does not address further whether any climate change treaty *ought* to address the politically contentious demands of distributive justice. Economic transfer arguments of this kind are powerfully criticized in Posner and Sunstein's *Climate Change Justice*. *Id.* For detailed discussion of the geopolitical divisions identified here, along with critical commentary, see Symposium, *Responses to Global Warming: The Law, Economics, and Science of Climate Change*, 155 U. PA. L. REV. 1353 (2007).

<sup>13</sup> By this we mean a system where a governmental authority establishes a ceiling on the amount of carbon a particular industrial sector (or sectors) may release during a specified period of time. Firms within the capped industry are then allocated a set number of discharge permits or credits which they are then free to trade in a secondary market to other firms seeking to emit beyond their allotted permits. Such schemes may allow for either "open trading" whereby firms across multiple capped industries may engage in cross-sectoral trading or "closed" whereby firms are limited to intra-sectoral trading. See generally THOMAS H. TIETENBERG, *EMISSIONS TRADING: PRINCIPLES AND PRACTICE* (2006).

<sup>14</sup> See ICAO, *Consolidated Statement of Continuing ICAO Policies and Practices Related to Environmental Protection*, app. A, Assemb. Res. A36-22 (2007), compiled in *Assembly Resolutions in Force*, at 1-54, ICAO Doc. 9902 (2007) [hereinafter *Assembly Resolution A36/22*]. ICAO remains wedded to the idea of creating a multilateral carbon-trading market for aviation, though for reasons discussed in Part II, *infra*, we are skeptical of its prospects.

<sup>15</sup> See IATA, <http://www.iata.org> (last visited June 14, 2012) (on file with the Harvard Law School Library). For more on IATA, see Brian F. Havel & Gabriel S. Sanchez, *Internationa-*

world's international airlines — has pledged carbon-neutral growth in the sector from 2020 onward and to halve carbon emissions by 2050 compared to 2005 levels.<sup>16</sup> Controversially, the European Union has begun unilaterally to sweep all flight operations touching any EU airport into its carbon trading system, the Emissions Trading Scheme (“ETS”), in January 2012.<sup>17</sup>

As to the question of normative desirability, several justifications exist for a sector-specific emissions reduction treaty for international aviation. Before reaching these justifications, we make two preliminary points to give further context to our focus on this sector. First, while it is true that aviation's share of global carbon emissions has never been estimated at higher than three percent,<sup>18</sup> our proposal is not framed as an effort to catch the biggest carbon culprits. And second, while it is also true that aviation has become a convenient political target (especially within the European Union) for environmentalist groups and even for some church congregations,<sup>19</sup> a perception of aviation's moral turpitude is irrelevant to the design of this proposal.

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*tional Air Transport Association*, in HANDBOOK OF TRANSNATIONAL ECONOMIC GOVERNANCE REGIMES 755, 755–64 (Christian Tietje & Alan Brouder eds., 2009).

<sup>16</sup> See IATA, A GLOBAL APPROACH TO REDUCING AVIATION EMISSIONS: FIRST STOP: CARBON-NEUTRAL GROWTH FROM 2020 (2009), available at [http://www.iata.org/SiteCollection/Documents/Documents/Global\\_Approach\\_Reducing\\_Emissions\\_251109web.pdf](http://www.iata.org/SiteCollection/Documents/Documents/Global_Approach_Reducing_Emissions_251109web.pdf). Consistent with our strictly “political” view of global warming, see *supra* note 4, we need not consider whether the reduction benchmarks established by IATA in 2009, or ICAO's more modest 2010 pledge for a two percent annual fuel efficiency improvement through 2050, could either meet or exceed an optimal level for capping aviation emissions proportionate to the industry's contribution to global warming. ICAO, *Consolidated Statement of Continuing ICAO Policies and Practices Related to Environmental Protection — Climate Change*, Assemb. Res. A-37/19, compiled in *Resolutions Adopted by the Assembly: Provisional Edition*, at 58, ¶ 4 (2010) [hereinafter Assembly Resolution A-37/19].

<sup>17</sup> See generally Martin Staniland, *Air Transport and the EU's Emissions Trading Scheme: Issues and Arguments*, 8 ISSUES AVIATION L. & POL'Y 153 (2009). For more on opposition to the application of the ETS to non-EU airlines, see *infra* Part I.B.

<sup>18</sup> The latest estimates on aviation's contribution to climate change indicate that approximately three percent of world carbon emissions are attributable to the sector. When other greenhouse gases are measured, however, air transport is apportioned six percent of the blame. Werner Rothengatter, *Climate Change and the Contribution of Transport: Basic Facts and the Role of Aviation*, 15 TRANSP. RESEARCH PART D 5, 11 (2010). But see Karen Mayor & Richard S.J. Tol, *Scenarios of Carbon Dioxide Emissions From Aviation*, 20 GLOBAL ENV'T CHANGE 65, 65 (2010) (stating that aviation accounts for only three percent of global emissions). There is considerable disagreement about how to measure aviation's impact on the earth's atmosphere, although it does appear that estimates which only assess air transport's “carbon footprint” and overlook the detrimental effects of other aircraft emissions do not provide a fully accurate picture. Cf. David McCollum et al., *Greenhouse Gas Emissions From Aviation and Marine Transportation: Mitigation Potential and Policies* 11–12 (Inst. Transp. Stud. Solutions White Paper Series, Jan. 1, 2010), available at <http://escholarship.org/uc/item/5nz642qb>. Commentators worry that the sizeable increases in aviation emissions since the 1990s, see Rothengatter, *supra* note 18, at 11, coupled with the sector's projected growth in the coming decades, see *2035: A Vision*, AIRLINE BUS., Dec. 2010, at 90, present air transport as a not insignificant contributor to global warming.

<sup>19</sup> See Steve Hucklesby, *Emissions From Aviation — Battle Lines Are Drawn*, PRAXIS (June 23, 2011, 3:40 PM), <http://jointpublicissues.blogspot.com/2011/06/emissions-from-aviation-battle-lines.html> (“UK churches and many church members have called for emissions from international aviation and shipping to be taken into account in international targets.”).

Instead, our justifications for proposing international aviation as a lead sector for a global carbon emissions reduction agreement are (in the broadest sense) political. The support for emissions reduction in this sector from government leaders and industry stakeholders indicates an opportune alignment of political will for a sector-specific approach. No comparable alignment of interests appears to exist in any other global industry. From the industry's perspective, while the policy drivers for an emissions reduction agreement are not entirely altruistic, they have no need to be. This is an industry that has enjoyed trade "exceptionalism," and has been comfortable with it, since the signing of the Chicago Convention nearly seventy years ago. And industry stakeholders acknowledge that a sectoralized agreement can ensure the economic sustainability of international aviation, even though the participating states must also seek an optimal level for emissions reduction.<sup>20</sup> For governments, there is manifest political advantage to supporting a sectoral response by what is arguably the world's most visible services industry. Through whichever lens it is scrutinized by public opinion, aviation has huge symbolic purchase. Emissions reductions pursued by one of the great enablers of globalization would have powerful demonstration effects for other industries, as well as for states.<sup>21</sup>

But we are mindful also of *Realpolitik*. We do not expect to reach a global "big bang" solution<sup>22</sup> in the fraught arena of carbon emissions policy

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<sup>20</sup> See IATA, *supra* note 16, at 6. It might be contended that one of the virtues of a multisectoral agreement is that objective benchmarks could be set without paying heed to special interest squabbling. But it is also true that international aviation, an industry almost uniquely susceptible to exogenous shocks, remains more economically fragile than more geographically "fixed" industries (coal power generation, for example). It is also true that a "one size fits all" approach in an industry like aviation — which has significant collateral effects on most national economies and the functioning of the world trade system — could also inflict undue harm on other significant sectors (intermodal travel and tourism, for example). See generally OXFORD ECON., *AVIATION: THE REAL WORLD WIDE WEB* (2009) (discussing the singular role of aviation in the global economy).

<sup>21</sup> The industry could also use its embrace of MBMs to spur governments toward a "holistic" policy for emissions reduction for this sector. For example, although there are ideological and political differences over public funding for infrastructure and research and development that primarily benefit private market actors, see, e.g., CATO INST., *CATO HANDBOOK FOR POLICYMAKERS* 75–76 (7th ed. 2008) (suggesting that airports and air traffic management services should be privatized), many industry stakeholders believe that governments, not airlines, bear responsibility for air routing inefficiencies (and emissions) that result from antiquated air traffic management systems, see generally OMEGA, *CLIMATE RELATED AIR TRAFFIC MANAGEMENT: FINAL REPORT* (2009); idling (and emissions) caused by airport congestion, see generally Ioannis Simaiakis & Hamsa Balakrishnan, *Impact of Congestion on Taxi Times, Fuel Burn, and Emissions at Major Airports*, 2184 *TRANSP. RESEARCH REC.* 22 (2010); and deficient public research and development programs in "green" technologies for transport (including biofuels). For further discussion on how to create a "greener" air transport industry, see Sam Capocci et al., *Aviation Industry — Mitigating Climate Change Impacts Through Technology and Policy*, 5 *J. TECH. MGMT. & INNOVATION* 66, 69–73 (2010); Robbert Kivits et al., *A Post-Carbon Aviation Future: Airports and the Transition to a Cleaner Aviation Sector*, 42 *FUTURES* 199 (2010).

<sup>22</sup> On the "big bang" approach, see *infra* note 102 and accompanying text.

without first achieving a narrower collaboration of like-minded states.<sup>23</sup> In our view, even if a comprehensive treaty encompassing every nation is not immediately practicable, then an incremental — but not insubstantial — approach is still possible. While several plausible transnational contexts could be proposed for this kind of initiative, in our view the most promising setting is the landmark Air Transport Agreement signed by the United States and European Union in 2007 (“U.S.-EU Agreement”).<sup>24</sup> Among other things, the U.S.-EU Agreement (together with its consolidating protocol signed in 2010)<sup>25</sup> establishes a program for transatlantic cooperation on environmental issues affecting civil aviation as well as the institutional machinery to sustain that cooperation. In the end, the goal of an aviation emissions reduction agreement is to offset the industry’s contribution to global warming — not to reorder the sector’s commercial landscape. Disparities in wealth, political orientation, and public support, along with the diversity of individual airlines’ beliefs in the proper level of public/private control over the industry, render finding an acceptable solution to infrastructure and research and development challenges through an emissions-oriented treaty implausible. As such, whatever policies states *ought* to adopt — in an “absolute” sense — toward air transport will be bracketed off from further consideration in our argument for a framework for an international agreement to reduce aviation emissions.

In the absence of any immediate prospect of multisectoral success, this Article views the exceptional status of international aviation, both historically and under the UNFCCC, as an opportunity to transcend the limitations of the UNFCCC and to envision a truly radical project of global governance. Such an approach, in turn, can demonstrate that collaborative projects for strong global governance are not doomed to endless stalemate.<sup>26</sup>

We turn first to the international legal order governing air transport. Our aim is to show that, despite the primacy apparently accorded to ICAO by the Kyoto Protocol, the international law of civil aviation provides regulatory space for the global approach to reducing aviation emissions proposed in this Article. Part II assesses a “big bang” aviation emissions treaty’s feasibility through the lens of International Paretianism, the pragmatic principle which holds that states will not commit to an agreement unless they are

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<sup>23</sup> This incremental approach to global cooperation is not an unprecedented venture in the realm of international law. The original General Agreement on Tariffs and Trade had 23 state parties in 1947, expanding to 128 in 1994 when it was succeeded by the World Trade Organization (“WTO”). Since 1994, the Organization’s membership has expanded to 155 states. *See Members and Observers*, WTO, [http://www.wto.org/english/thewto\\_e/whatis\\_e/tif\\_e/org6\\_e.htm](http://www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm) (last visited June 14, 2012) (on file with the Harvard Law School Library).

<sup>24</sup> *See infra* Part III.B.

<sup>25</sup> *See* Air Transport Agreement, U.S.-EU, Apr. 30, 2007, 46 I.L.M. 470 [hereinafter U.S.-EU Agreement], *as amended by* Protocol to Amend the Air Transport Agreement, U.S.-EU, Mar. 25, 2010, 2010 O.J. (L 223) 3 [hereinafter U.S.-EU Protocol].

<sup>26</sup> *See infra* Part III.

made better off by its terms.<sup>27</sup> The principle supplies a useful indicator of the types of agreements to which states will adhere, and we argue that it does not defeat the sector-specific accord proposed herein. Part III focuses on the potential of leveraging the cooperative environ established by the aforementioned U.S.-EU Air Transport Agreement for developing an incremental aviation emissions reduction agreement — one with the potential to attract third-party states. Finally, Part IV assuages potential concerns that a sector-specific emissions reduction agreement will exacerbate the perceived problem of growing fragmentation in international law.

## I. INTERNATIONAL LAW AND STATE CONTROL OF AIRCRAFT EMISSIONS

In what may be international law's only incontrovertible doctrine, a state has sovereignty "over its territory and general authority over its nationals[.]"<sup>28</sup> Since the advent of the modern international legal order following World War II, sovereignty has been increasingly revealed as a perfectly rational paradox, manifest not only in its traditional idea of exclusion but also in its capacity to be given away. Submission to the disciplines of the world trade system implicates the right of every state to regulate its economy and the actors within that economy by freely accepting restraints on its commercial sovereignty.<sup>29</sup> States regularly take on positive and negative obligations to pursue cooperation with other states on matters no single country can adequately address alone. Global civil aviation was one of the first sectors in the modern era to reveal the paradox of how states can (and often must) exercise sovereignty through surrendering some aspects of it. To maintain order in the skies and uniform rules governing international air traffic, 190 states have ratified the 1944 Chicago Convention,<sup>30</sup> which also established ICAO.

The drafters of the Convention did not foresee a need to vest ICAO with any explicit authority over the regulation of aircraft emissions. But the Organization is nonetheless charged with developing and updating annexes to the Convention which set universal "Standards and Recommended Practices" ("SARPs") with respect to rules of the air, aeronautical telecommunications standards, the provision of air traffic management services, and the

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<sup>27</sup> For another application of this principle to international aviation, see Brian F. Havel & Gabriel S. Sanchez, *Do We Need a New Chicago Convention?*, 11 *ISSUES AVIATION L. & POL'Y* 7 (2011).

<sup>28</sup> RESTATEMENT (THIRD) OF FOREIGN RELATIONS LAW OF THE UNITED STATES § 206(a) (1987). "Incontrovertibility" here does not imply a repackaging of the well-traveled doctrine of *jus cogens*. Rather, we are suggesting only that sovereignty is common ground shaping theories of international law across multiple jurisdictions. See generally Anu Bradford & Eric A. Posner, *Universal Exceptionalism in International Law*, 52 *HARV. INT'L L.J.* 1 (2011).

<sup>29</sup> See, e.g., M. SORNARAJAH, *THE INTERNATIONAL LAW ON FOREIGN INVESTMENT* 119 (3d ed. 2010).

<sup>30</sup> See *Convention on International Civil Aviation — Doc 7300*, ICAO, <http://www.icao.int/publications/Pages/doc7300.aspx> (follow "Status" hyperlink) (last visited June 14, 2012) (on file with the Harvard Law School Library).

environment.<sup>31</sup> Additionally, and in harmony with the general predicate of airspace sovereignty, several articles of the Chicago Convention set effective limits on the extent to which states may *unilaterally* impose caps on aircraft emissions.

In this Part, therefore, we measure the extent to which international law, through application of the Chicago Convention and the UNFCCC process, both enables and disables state action to reduce aviation pollution. We conclude that while ICAO is endowed under these instruments with some oversight powers over aviation emissions, it does not have exclusive stewardship; states remain free — within certain broad parameters — to work with or without the Organization to develop a consensual treaty-based approach to carbon emissions reduction. If modern sovereignty emphasizes cooperative surrender, however, a troubling question is presented by the decision of the EU member states — acting through the European Commission — unilaterally and nonconsensually to impose a carbon trading system on all airlines, irrespective of national origin, which operate to or from any EU airport. Here, as we will show, the European Union is usurping sovereignty. We conclude that, while the Chicago Convention appears to foreclose unilateral (and extraterritorial) application of national or supranational measures to reduce aviation emissions, it does not disallow cooperative sovereignty to achieve the same purpose through a bilateral or multilateral agreement.

#### A. ICAO's Limited Custody of Emissions Regulation

ICAO's direct authority to regulate aviation emissions can be characterized as weak or, more realistically, nonexistent. Annex 16 to the Chicago Convention, which addresses aircraft noise in addition to emissions, lays out limited standards for aircraft engines with respect to discharges of hydrocarbon, carbon monoxide, and nitrogen oxides. It does not cover carbon dioxide, which is the primary man-made contributor to global warming.<sup>32</sup> Although ICAO does have the legislative power to toughen the Convention's annexes, doing so with respect to emissions would likely be futile. States which fail to adhere to a promulgated SARP are required to give notice to ICAO, but incur no penalties for their defection.<sup>33</sup> And while a state may invoke the Convention's dispute settlement provisions if it disagrees with one or more state parties over the interpretation or application of an annex,<sup>34</sup>

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<sup>31</sup> See Chicago Convention, *supra* note 8, art. 37.

<sup>32</sup> See Heather Miller, *Civil Aircraft Emissions and International Treaty Law*, 63 J. AIR L. & COM. 697, 714 (1998). In addition to its weak regulation of gas discharges, Annex 16 mandates that aircraft engines must be built to prevent liquid fuel expulsions during operation ("fuel venting"). *Id.* at 713.

<sup>33</sup> See Chicago Convention, *supra* note 8, art. 38.

<sup>34</sup> See *id.* art. 84. In fact, the Chicago Convention's dispute settlement provisions lack the sophistication of the WTO Dispute Settlement Body or the International Tribunal for the Law of the Sea. See Gabriel S. Sanchez, *The Impotence of the Chicago Convention's Dispute Settlement Provisions*, 10 ISSUES AVIATION L. & POL'Y 27 (2010).

the treaty is silent on whether this provision can be applied against a state which properly notifies ICAO of its nonadherence to a newly amended annex.

Notwithstanding these limitations to its authority, ICAO has not been locked out of efforts to reduce aviation emissions at the international level. To the contrary, Article 2(2) of the Kyoto Protocol to the UNFCCC mandates that developed states which have ratified the instrument (so-called “Annex 1 Parties”) are to “pursue limitation or reduction of greenhouse gases from aviation [by] working through the International Civil Aviation Organization[.]”<sup>35</sup> At its triennial General Assembly meetings in 2007 and 2010,<sup>36</sup> ICAO’s member states passed Resolutions reaffirming the Organization’s legitimacy as the lead international body charged with developing a global response to aviation’s role in climate change.<sup>37</sup> It is true that ICAO resolutions, like U.N. General Assembly resolutions, can be disparaged as bloodless “soft law.”<sup>38</sup> More important in the present context than their quantum of legality, however, is how they signal the desire of the international community to pursue multilateralism in addressing the challenge of aviation emissions. Unfortunately, the Resolutions do not specify whether ICAO’s members imagine a global treaty imposing market-based measures like carbon trading or eco-taxes, or foresee only a nonbinding framework of MBMs and nothing more.<sup>39</sup>

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<sup>35</sup> Kyoto Protocol to the United Nations Framework Convention on Climate Change art. 2(2), *opened for signature* Dec. 11, 1997, 37 I.L.M. 22. The Protocol makes a distinction between Annex I and II Parties which commit to reduce greenhouse gas emissions, and non-Annex Parties comprising developing countries that are not directed to make any emissions reduction commitments unless they volunteer to join Annex I. Application of the doctrine of common but differentiated responsibilities, *see supra* note 12, means that three of the world’s leading greenhouse gas emitters — China, India, and Brazil — are not Annex I Parties. *See* LARRY PARKER & JOHN BLODGETT, CONG. RESEARCH SERV., RL 32721, GREENHOUSE GAS EMISSIONS: PERSPECTIVES ON THE TOP 20 EMITTERS AND DEVELOPED VERSUS DEVELOPING NATIONS 14 (2008).

<sup>36</sup> The ICAO triennial Assemblies are made up of delegates from all of the Chicago Convention’s state parties. In addition to hosting special working groups on pressing air transport issues, the Assembly typically results in non-binding resolutions which can be interpreted as signaling global attitudes on a range of issues, from aviation and climate change to counter-terrorism measures. For a comprehensive overview of the last Assembly, including video and working papers, *see ICAO Assembly*, ICAO, <http://legacy.icao.int/Assembly37> (last visited June 14, 2012) (on file with the Harvard Law School Library).

<sup>37</sup> *See* Assembly Resolution A36/22, *supra* note 14; Assembly Resolution A37/19, *supra* note 16.

<sup>38</sup> *Cf.* Alan E. Boyle, *Some Reflections on the Relationship of Treaties and Soft Law*, 48 INT’L & COMP. L.Q. 901, 905 (1999) (describing General Assembly resolutions as a form of soft law). Some commentators, however, have noted that “[m]any (and perhaps most) agreements between nations” take the form of soft law. Jack L. Goldsmith & Eric A. Posner, *International Agreements: A Rational Choice Approach*, 44 VA. J. INT’L L. 113, 114 (2003). Others have found that soft law possesses some utility for states wishing to solve, for instance, straightforward coordination problems. *See* Andrew T. Guzman & Timothy L. Meyer, *International Soft Law*, 2 J. LEG. ANALYSIS 171, 171 (2010).

<sup>39</sup> *See, e.g.*, Assembly Resolution A37/19, *supra* note 16, ¶ 13. The vagueness of the Resolutions mirrors the obstacles faced by the UNFCCC drafters in aligning carbon reduction goals with the multiple geopolitical agendas of the participating states. More cynical observers would also suggest that ICAO’s not-undeserved dilatory reputation makes it a congenial forum

Notably, ICAO's 2010 Resolution suggests that its member states no longer see the Organization (if they ever did) as the sole or exclusive agency for international aviation emissions control. The Resolution sets forth a series of "Guiding Principles" for the imposition of both bilateral and multilateral MBMs.<sup>40</sup> The adoption of these Principles implies that ICAO's member states contemplate the existence of other sites, whether bilateral or multilateral (including regional), for collaborative emissions regulation. While we will turn to the Guiding Principles in Part III, their adoption suggests that the member states have now denied ICAO whatever mantle of exclusivity it could claim from the terms of the Kyoto Protocol. Any such claim was always suspect; as previously noted, Kyoto summoned only a select number of its signatories to "work through" ICAO, without providing further details on what this summons might mean in practice. Presumably, so long as the Protocol's parties do not venture beyond the Organization's mandates as listed in the Chicago Convention and expressed through Assembly Resolutions, there would be no conflict if two states, certain clusters of states, or even all of the ICAO member states were to negotiate an emissions reduction treaty outside the Organization's auspices.

Moreover, evidence of "concept slippage" in ICAO's self-understanding of its preeminent role appeared as early as the 2007 Resolution. There, the Organization not only exhorted states "to refrain from environmental measures that would adversely affect the orderly and sustainable development of international civil aviation" and "to continue to cooperate closely with international organizations" on climate change issues,<sup>41</sup> but also advised that states should "not . . . implement an emissions trading system on other [Chicago Convention] Contracting States' aircraft operators except on the basis of mutual agreement between those States."<sup>42</sup> This language was directed at the European Commission's plan to bring non-EU air carriers under its ETS.<sup>43</sup> But it also represents a more general stance by ICAO's members against unilateralism with respect to aircraft emissions. In sum, the 2007 and 2010 Resolutions appear to condone bilateral and multilateral initiatives outside ICAO and definitively to reject unilateral action.

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for those states that are either resisting climate change remediation measures or prefer non-MBM approaches (such as air traffic management improvements). While the United States, for example, could fall into either of those categories, Federal Aviation Administration ("FAA") officials typically argue that non-MBMs can be more effective and will not unduly burden airlines with additional costs. See Carl Burelson, Director, FAA Office of Env't and Energy, Greening U.S. Aviation, Presentation to the ICAO Colloquium on Aviation and Climate Change (May 12, 2010), [http://www.icao.int/CLQ10/Docs/Audio/0\\_CarlBurelson\\_13.mp3](http://www.icao.int/CLQ10/Docs/Audio/0_CarlBurelson_13.mp3).

<sup>40</sup> See Assembly Resolution A-37/19, *supra* note 16, annex.

<sup>41</sup> Assembly Resolution A36/22, *supra* note 14, at I-56.

<sup>42</sup> *Id.* at I-73.

<sup>43</sup> Portugal, acting on behalf of the EU member states and the members of the European Civil Aviation Conference, entered a reservation to this part of Assembly Resolution A36/22. *Id.* app. A, at A-1; see also *infra* Part I.B-C (discussing the legal and policy implications of the EU ETS).

B. *Reconciling Article 15 of the Chicago Convention with Emissions Regulation*

Having established that ICAO's policies do not impede autonomous state-to-state collaboration on emissions reduction, we now address whether the provisions of the Chicago Convention itself might constrain the means that could be selected by states to curb aviation emissions. The issue presented here is quite distinct from that of ICAO's primacy. Whereas ICAO might now tolerate bilateral or multilateral initiatives by its member states, some provisions of the Convention may still affect the *kinds* of reduction measures, including schemes for taxation and carbon trading, that ICAO or its member states might be able to apply. At first blush, the plan of the Convention does not seem to speak directly to these questions. The 100-odd articles promote multilateral cooperation and coordination on the provision of air services, including technical and safety standards,<sup>44</sup> aircraft registration and documentation,<sup>45</sup> and air navigation.<sup>46</sup> The treaty also restates and clarifies customary principles of international law related to airspace sovereignty<sup>47</sup> and delineates the rights of states to regulate their airspace.<sup>48</sup> But there are other provisions in the Convention that seek to circumscribe the sovereign's tax power with respect to international civil aviation. Closer inspection of these provisions, and in particular of the terms of Article 15, reveals a number of points of tension with the operation of tax-based aircraft emissions reduction policies.

Titled "Airport and similar charges," Article 15 permits states to impose charges on non-national airlines for the use of domestic airports and air navigation facilities.<sup>49</sup> Otherwise, no such impositions can be made "in respect solely of the right of transit over or entry into or exit from its territory of any aircraft of a [member] State[.]"<sup>50</sup> From this language ICAO has extrapolated a general principle that a state can levy "fees, duties, or other charges" on foreign airlines in respect of a rendered service (e.g., use of air traffic control) but not in gross (i.e., designed solely to raise revenue for the general fisc and not to recover the costs of providing facilities and services to airlines engaged in international air transport).<sup>51</sup> Under ICAO's strong

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<sup>44</sup> See Chicago Convention, *supra* note 8, arts. 37–42.

<sup>45</sup> See *id.* arts. 29–36.

<sup>46</sup> See *id.* art. 28.

<sup>47</sup> See *id.* art. 1.

<sup>48</sup> See *id.* art. 11.

<sup>49</sup> See *id.* art. 15.

<sup>50</sup> *Id.*

<sup>51</sup> See ICAO, *ICAO Policies on Charges for Airports and Air Navigation Services*, ICAO Doc. 9082/7 ¶ 8 (7th ed. 2004). This interpretation is supported by ICAO's own statement, in relation to Article 24 of the Convention, that customs duties levied by a state taxing authority on fuel, lubricants, or aircraft stores taken into a state via an international airline service cannot be imposed "except to the extent that they are based on the actual costs of providing airports or air navigation facilities and services and used to finance the costs of providing them[.]" ICAO, *Council Resolution on Taxation of International Air Transport, in Policies on Taxation*, ICAO Doc. 8632 ¶ 1(e) (Feb. 24, 1999) [hereinafter *Policies on Taxation*]. As the *Commen-*

reading, MBMs directed at offsetting emissions, such as carbon trading or taxation, which are unrelated to the provision of airport and air navigation services, would constitute a charge “in respect solely of the right of transit over or entry into or exit” and hence would be impermissible under the Convention.<sup>52</sup> A more moderate interpretation of Article 15 — one which takes account of modern environmental realities while remaining consistent with its overarching purpose — is that emissions-abating measures *are* part of the cost of providing airport and navigation services. So long as the additional cost imposed by the MBM is rationally related to the emissions reduction goal set by national authorities and not, rather, a cleverly disguised wealth transfer, states are free to recover abatement costs.<sup>53</sup>

Some, including the United Kingdom in its defense of a lawsuit in the English High Court challenging the application of the EU ETS to non-EU airlines,<sup>54</sup> have countered that since Article 15 refers only to “fees,” “du-

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*tary on the Resolution, in Policies on Taxation* also makes clear, the name attached to a levy (e.g., tax, charge, emissions trading) is not dispositive of its effects. *See id.* ¶ 5. In other words, within the Convention system, there is no such thing as a permissible tax that bears no relationship to a cost incurred for a service provided. It should be noted, however, that ICAO’s self-understanding of the Chicago Convention only carries persuasive authority. Unlike the WTO, it lacks power to issue binding interpretations of its own agreements. *Cf.* Marrakesh Agreement Establishing the World Trade Organization art. IX(2), Apr. 15, 1994, 1867 U.N.T.S. 154.

<sup>52</sup> Chicago Convention, *supra* note 8, art. 15. Article 11 of the Convention, which provides that “the laws and regulations of a contracting State relating to the admission to or departure from its territory of aircraft engaged in international navigation . . . shall be complied with by such aircraft upon entering or departing from or while within the territory of that State.” *Id.* art 11. Does Article 11 offer a *passee-partout* for all kinds of taxes to be imposed by contracting states on the basis that it requires compliance with national laws and regulations (including national tax laws and regulations)? In light of the obligations accepted by states in Article 15 (and in Article 24, discussed *infra* note 56), the Convention cannot support such an interpretation. *See id.* art. 15. Otherwise, once again, there would be virtually no restriction on a state’s ability to impose taxes on international civil aviation as a condition “solely” for entry into or exit from that state’s territory.

<sup>53</sup> Whether such a rational relationship can be demonstrated would seem speculative, although some airports have established abatement programs for emissions produced during take-off, landing, and taxiing operations that arguably would fall within this somewhat wider view of Article 15. *See, e.g., Environmental Management, MUNICH AIRPORT*, <http://www.munich-airport.de/en/company/umwelt/management/index.jsp> (last visited June 14, 2012) (on file with the Harvard Law School Library). But we do not think that a more moderate interpretation would allow a generalized “environmental” tax, where emissions are targeted in gross without specific cost remediation actions. In a recent challenge to an aviation eco-tax imposed by the Dutch government, the Dutch Supreme Court conceded that a “charge” does require a consideration, but held that the final sentence of Article 15 (“in respect solely of the right of transit over or entry into or exit”) does not prohibit charges that do *not* have a consideration, such as a “green” ticket tax. The Dutch Court, however, did not examine the broader context of how “charges” are treated in the Chicago Convention, nor ICAO’s longstanding prophylactic interpretations of the Convention’s provisions on taxation. *See* HR 10 juli 2009, LJN: BI3450 (BARIN/Netherlands) (Neth.), *available at* <http://zoeken.rechtspraak.nl/detailpage.aspx?ljn=BI3450>. The authors are grateful to Niels van Antwerpen, Vice President Legal, AerCap Group Service, Schiphol Airport, for providing translation and analysis of the relevant points in the Dutch Supreme Court’s ruling.

<sup>54</sup> The suit, which was filed by a consortium of U.S. airlines in 2009, was referred by the United Kingdom in July 2010 to the Court of Justice of the European Union (“CJEU”) for a preliminary ruling on certain key legal issues. *See generally* Reference for a Preliminary Rul-

ties,” and “charges,” and not to a “tax,” that a tax — even if imposed “solely” on the right of transit, entry, or exit — is permissible. While it is true that the official English-language edition of Article 15 does not mention the word “tax,” the equally valid French, Spanish, and Russian texts do.<sup>55</sup> This is powerful evidence that the Convention drafters intended to exclude “taxes,” along with “fees,” “duties,” and “charges,” which are not imposed to recover the costs of air navigation and the use of airports. This is a sensible reading of the treaty: to argue that Article 15 does not deal with taxes, and that therefore taxes are unregulated by the Convention, would be to disembowel Article 15 and to afford states a license to impose all kinds of treasury taxes without any need for cost justification.<sup>56</sup>

The United Kingdom has also argued that the drafters intended Article 15 to be a nondiscriminatory provision rather than an absolute interdiction on taxation.<sup>57</sup> In the U.K. exegesis, the word “solely” (in the key phrase “in respect solely of the right of transit over or entry into or exit from”) is construed as prohibiting states from imposing charges or taxes “solely” on international civil aviation while exempting non-international (i.e., domestic) air transport from the same or similar burdens.<sup>58</sup> But a convincing argument can be made that the U.K. interpretation sounds a false note textually.

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ing from the Queen’s Bench Division (Administrative Court) of the High Court of Justice (United Kingdom) Made on 22 July 2010 — *The Air Transport Association of America, American Airlines, Inc., Continental Airlines, Inc., United Airlines, Inc. v. The Secretary of State for Energy and Climate Change*, 2010 O.J. (C 260) 12. In December 2011, the CJEU ruled that the application of the EU ETS to non-EU airlines is compliant with international law. *See Air Transp. Ass’n of Am. et al. v. Sec’y of State for Energy and Climate Change*, Case C-366/10 (Dec. 21, 2011) [hereinafter Case C-366/10], available at <http://curia.europa.eu/juris/document/document.jsf?text=&docid=117193&pageIndex=0&doclang=en&mode=doc&dir=&occ=first&part=1&cid=515524>. But the Court side-stepped a direct analysis of how the Chicago Convention might affect the ETS by holding that the Convention binds only the twenty-seven EU member states and not the Union itself. *Id.* ¶¶ 60–71. For a detailed critique of both the Court’s ruling and the prior opinion of the Advocate General that was largely followed by the Court, see Brian F. Havel & John Q. Mulligan, *The Triumph of Politics: Reflections on the Judgment of the Court of Justice of the European Union Validating the Inclusion of Non-EU Airlines in the Emissions Trading Scheme*, 37 *AIR & SPACE L.* 3 (2012).

<sup>55</sup> See Mark Bisset & Georgina Crowhurts, *Is the EU’s Application of its Emissions Trading Scheme to Aviation Illegal?*, *AIR & SPACE LAW.*, May 2011, at 17; see also Chicago Convention, *supra* note 8, art. 15 (containing the text of Article 15 in all of the Convention’s official languages).

<sup>56</sup> The only other use of the term “charge” in the Convention appears in Article 24, in a separate and subsequent chapter captioned “Measures to Facilitate Air Navigation.” Chicago Convention, *supra* note 8, art. 24. Article 24 defines an impermissible charge as including “customs duty, inspection fees or similar national or local duties and charges.” *Id.* It is evident from the respective placement of these articles that Article 15, which deals with all aspects of airport and air navigation charges, is *lex generalis* and that Article 24, which deals with a specific aspect of air navigation services, is *lex specialis*. This proposition also follows logically from ICAO’s own (albeit non-binding) interpretation that the Convention “did not attempt to deal comprehensively with tax matters.” *See Policies on Taxation*, *supra* note 51. In other words, the Convention appears to define a permissible range of cost-related charges in Article 15 and to provide an illustrative example of impermissible non-cost related charges (labeled as fees or duties) in Article 24. Article 24, therefore, appears to be best understood as being defined ultimately by its relationship to Article 15.

<sup>57</sup> See Bisset & Crowhurts, *supra* note 55, at 16.

<sup>58</sup> *Id.*

Under the terms of Article 15, fees, duties, or charges evidently cannot be imposed solely for overflight — the right to “transit over” a state’s airspace.<sup>59</sup> By definition, such activities could occur without necessarily implicating a government-provided or airport-related service of any kind. The inclusion of overflight, in respect of which no airport charges are required, suggests that the drafting states intended Article 15 to be an absolute, not a nondiscriminatory, rule. Moreover, the Convention is concerned with international air transport (indeed, it is titled the Convention on *International Civil Aviation*). It is unlikely, therefore, that the founding parties intended, by their use of the word “solely,” to mean that states would be at liberty to trammel international civil aviation with fees, duties, and charges provided that they applied equivalent measures to domestic air transport. The founding parties simply would not have been interested in what states did to encumber air transport within their own territories.

In sum, Article 15 seeks to limit the reach of the sovereign taxing power by defining the scope of national regulations that involve charges (and, by implication, taxes) imposed on international civil aviation.<sup>60</sup> But Article 15 says nothing concerning the regulations — including MBMs to offset aircraft emissions — that a State may impose *on its own airlines* for activities occurring within its territory or outside its territory.<sup>61</sup> Rather, under the Chicago Convention a state is barred from unilaterally imposing either discriminatory national revenue regulations on foreign airlines operating within its territory<sup>62</sup> or, by virtue of the principle of airspace sovereignty,<sup>63</sup> from extending such regulations — whether discriminatory or otherwise — to foreign airlines operating beyond the state’s territory. To illustrate, under our reading of the Convention the United States could subject American Airlines to an “eco-tax” for aircraft engine emissions released both within and outside U.S. sovereign territory. But the United States could not extend such a tax to German carrier Lufthansa for emissions discharged within the European Union. Nor, under a strong reading of Article 15, could the United States penalize Lufthansa for any emissions released over U.S.

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<sup>59</sup> See Chicago Convention, *supra* note 8, art. 15.

<sup>60</sup> Why does the Convention mention fees, duties, or charges at all? Had it not sought to limit state sovereignty in this way, international airlines would have been at risk of being encumbered by multiple species of taxes and imposts in any state to or from which they wished to provide service. Such an outcome could not be consistent with the Convention’s animating principles of equality among the world’s airlines. *Cf. id.* pmb1.

<sup>61</sup> Under the Convention, states are responsible for their own airlines operating outside the national territory. *See id.* art. 12 (“Each contracting State undertakes to adopt measures to insure . . . that every aircraft carrying its nationality mark, wherever such aircraft may be, shall comply with the rules and regulations relating to the flight and maneuver of aircraft there in force.”).

<sup>62</sup> This is due to an earlier clause in Article 15 which states that “[a]ny charges that may be imposed . . . by a contracting State for the use of . . . airports and air navigation facilities by the aircraft of any other contracting State shall not be higher . . . as to aircraft engaged in scheduled international air services,” than those that the state applies to “its national aircraft engaged in similar international air services.” *Id.* art. 15.

<sup>63</sup> *See id.* art. 1.

territory if the tax were (as it most likely would be) wholly unrelated to the cost of providing airport or air navigational facilities.<sup>64</sup>

The Chicago Convention is silent, however, on whether two or more of its state parties could agree on an emissions tax or carbon trading system (irrespective of Article 15's requirement that either measure must recapture costs associated with air navigation and facilities provision) that would be applied only to the airlines covered by the agreement and without regard for where their emissions are discharged. As discussed, ICAO has already contemplated that such accords, whether reached bilaterally or multilaterally, are a possibility and has issued no objections.<sup>65</sup> So long as all parties to the agreement exploit their Article 1 sovereignty privileges and impose the agreement's common emissions tax or trading system on their own carriers and on no other party's or non-party's airlines, there can be no conflict with the nondiscrimination principles of the Chicago Convention. This view is consistent with Article 58(1)(b) of the Vienna Convention on the Law of Treaties, which states that "[t]wo or more parties to a multilateral treaty may conclude an agreement to suspend the operation of provisions of the treaty" so long as "the suspension in question is not prohibited by the treaty . . . does not affect the enjoyment by the other parties of their rights under the treaty," and "is not incompatible with the object and purpose of the treaty."<sup>66</sup>

A murkier question is whether a party to an aviation emissions agreement could cede regulatory control in this area to another party or parties. For example, can the United States or European Union develop a uniform emissions taxing scheme that imposes a set charge on both parties' airlines for any takeoffs or landings anywhere in the world but agree that the scheme will be administered solely by the United States? Presumably yes, so long as the rights of third parties to the Chicago Convention are not infringed. As Joost Pauwelyn has argued with respect to conflicts between World Trade Organization ("WTO") law and other international agreements concluded between WTO member states, so long as the obligations made under WTO law are reciprocally given they can be reciprocally waived through the operation of another treaty. In most such cases, where third party rights are not violated, the non-WTO treaty prevails.<sup>67</sup> Under Pauwelyn's interpretation, two WTO members could agree bilaterally to refrain from importing certain

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<sup>64</sup> Further, under Article 12, the Convention regulates airspace jurisdiction over the high seas: "[o]ver the high seas the rules in force shall be those established under this Convention." *Id.* art. 12.

<sup>65</sup> See *supra* Part I.A.

<sup>66</sup> Vienna Convention on the Law of Treaties art. 58(1), *opened for signature* May 23, 1969, 1115 U.N.T.S. 331. The Convention adds the caveat that suspensions must be temporary, though it fails to provide a definite timetable. *Id.* While Article 4 of the Convention stipulates that its provisions do not apply retroactively to treaties concluded before it entered into force in 1980, *id.* art. 4, the Convention is generally recognized as a codification of the customary international law rules of treaty interpretation, see RESTATEMENT (THIRD), *supra* note 28, pt. III, intro. note.

<sup>67</sup> See JOOST PAUWELYN, CONFLICT OF NORMS IN PUBLIC INTERNATIONAL LAW: HOW WTO LAW RELATES TO OTHER RULES OF INTERNATIONAL LAW 491 (2003).

species of fish from each other for a period of ten years in order to help quell the effects of overfishing, but they could not agree to restrict imports of the same species from third party members.<sup>68</sup> The same logic applies in our projected scenario: the European Union can agree to cede control over emissions taxation of its airlines to the United States, but cannot grant the United States any rights to tax non-EU air carriers, even with respect to emissions released within EU territory.<sup>69</sup>

### C. Gauging the Chicago Convention's Tolerance for Unilateralism

The analysis in the preceding sections asserted the compatibility of certain kinds of collaborative bilateral or multilateral emissions reduction agreements, evolved outside ICAO, with ICAO policies and with the provisions of the Chicago Convention itself. As noted in that context, the motifs of equality of opportunity, nondiscrimination, and mutual consent are key to the patterns of international aviation relations envisaged in the Chicago Convention. These motifs have been critical to the Convention's long history of technical success. It is passing strange, therefore, that the European Union, a supranational entity which has regularly criticized other states for defecting from international law commitments, devised an aviation cap-and-trade system — the ETS<sup>70</sup> — that unilaterally imposes emissions caps and carbon charges not only on EU airlines operating within and outside the European Union, but also on the total flight paths of all non-EU airlines which operate to and from virtually any EU commercial airport from any location on the planet.<sup>71</sup> In applying the ETS to aviation, the European Commission preferred a route-based formula to an airspace-based formula. Consequently, as

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<sup>68</sup> *Id.*

<sup>69</sup> The reason is simple: the tax would, arguably, still violate Article 15 with respect to all non-EU airlines. See *supra* notes 54–60 and accompanying text.

<sup>70</sup> The EU ETS, which was launched in 2005, presently covers power stations, combustion plants, oil refineries, and iron and steel works, as well as factories making cement, glass, lime, bricks, ceramics, pulp, paper, and board. See EUROPEAN COMM'N, THE EU EMISSIONS TRADING SCHEME 13 (2009), available at [http://ec.europa.eu/clima/publications/docs/ets\\_en.pdf](http://ec.europa.eu/clima/publications/docs/ets_en.pdf). Aviation, as noted, is scheduled to be included into the system beginning in 2012. *Id.* For the purposes of our discussion, all references to the ETS are solely with respect to its application to the air transport sector.

<sup>71</sup> One can speculate as to why the European Union pursued this course. Several factors may be at play in the Union's seeming willingness to subvert established international law principles in a paroxysm of *fiat justitia, et pereat mundus* ("let right be done even as the world perishes"). First, there is a widespread EU culture that vilifies aviation, which is reflected in the Aviation Environment Federation's "Flyless Campaign," see *Flyless Campaign Asks: 'Is Your Journey Really Necessary?'*, COMMUNIQUE AIRPORT BUS., June–July 2005, at 29, and even clerical pronouncements exhorting Christians to be trustees for God's creation by avoiding short-haul flights and taking long-haul flights only sparingly, see *supra* note 19 and accompanying text. Second, the ethos of the European Union has long favored social policies (like welfare rights and diversity) over trade liberalization. See Bradford & Posner, *supra* note 28, at 16. And finally, it may be that the Union's long experience with integration has eroded the rhetorical force of sovereignty within its borders.

explained by the U.S. Air Transport Association (“ATA”)<sup>72</sup> in a press release announcing its lawsuit to challenge the ETS as incompatible with the Chicago Convention, the EU ETS “would regulate the emissions from [a U.S. carrier flight from Dallas to London] on the ground and as it takes off in Dallas, as it flies over Texas, Oklahoma, Missouri, Illinois, Indiana and Michigan, within U.S. offshore territory, over Canada and the Atlantic Ocean.”<sup>73</sup>

The gist of the ETS can be stated quickly. As currently formulated, the ETS regulation began capping emissions from most flights landing at or departing from airports in EU member states starting on January 1, 2012.<sup>74</sup> For the first year, the cap is set at ninety-seven percent of the mean average of emissions released between 2004–06 by airlines operating to and from EU territory.<sup>75</sup> Beginning in 2013, the cap will be lowered to ninety-five percent and may subsequently be adjusted downward by amendments to the regulation.<sup>76</sup> While airlines covered by the ETS will receive most of their carbon allowances for free (at least in the initial stages of the scheme), fifteen percent of the allowances will be available by auction only, with the revenues going to the EU member states.<sup>77</sup> Any airline which exceeds its initial allotment will have options to purchase additional allowances through auction and by accessing a carbon trading market populated by other airlines and other industrial sectors which have unused or surplus credits for sale.<sup>78</sup> A

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<sup>72</sup> The ATA has since laid claim to a more patriotic sensibility by renaming itself Airlines for America. See AIRLINES FOR AM., <http://www.airlines.org> (last visited June 14, 2012) (on file with the Harvard Law School Library).

<sup>73</sup> *ATA Challenges the Application of the EU ETS to U.S. Airlines*, AIR TRANSP. ASSOC., <http://www.airlines.org/Pages/ATA-challenges-the-application-of-the-EU-ETS-to-U.S.-Airlines.aspx> (last visited June 14, 2012) (on file with the Harvard Law School Library) (emphasis added). In its later submission on a preliminary reference on points of law made by the English High Court to the CJEU, the ATA provided a further example of a flight departing from San Francisco and landing in London. On the standard flight path, 29% of emissions occur in U.S. airspace, 37% in Canadian airspace, 25% over the high seas, and only 9% in the airspaces of EU member states. Yet 100% of the emissions are subject to the EU regulations. See Havel & Mulligan, *supra* note 54, at 6 n.13.

<sup>74</sup> See Council Directive 2008/101, art. 3c, 2009 O.J. (L 8) 3 (EC). The annex of the Directive provides a list of exempted categories of air transportation, including flights with a takeoff mass of less than 5700 kilograms, flights performed under visual flight rules, flights made for official government business, and rescue flights. Council Directive 2008/101, 2009 O.J. (L 8) 17 (EC). But even with allowable exemptions, the Directive’s coverage still embraces a substantial portion of all EU flight activity.

<sup>75</sup> See *id.* arts. 1(3)(b), 3(c).

<sup>76</sup> See *id.* art. 3(c). One should not expect that the proposed caps represent any kind of scientific calibration of projected aircraft carbon emissions. Rather, they are entirely the result of political compromise. For instance, in the lead-up to the ETS regulation, the European Parliament considered setting the emissions cap between 50–75% of the 2004–06 levels while the European Commission, with the support of the airlines, proposed a 100% cap. See Staniland, *supra* note 17, at 167.

<sup>77</sup> See Directive 2008/101, *supra* note 74, art. 3(d). While the regulation encourages member states to use revenues generated from the ETS “to tackle climate change in the EU and third countries,” the final determination for the disposition of ETS revenues rests with the individual states. See *id.* art. 3(d)(4).

<sup>78</sup> See *supra* note 13 (noting the difference between “open” and “closed” carbon trading systems).

bilateral or multilateral emissions reduction agreement resting on these structural principles would be legally unobjectionable under the Chicago Convention.

But the unilateral, nonconsensual imposition of ETS charges on non-EU airlines appears to be a startling repudiation of the Convention's cooperative ethos. No one is contending that the European Union lacks the right to regulate the emissions of its own airlines in and beyond EU airspace.<sup>79</sup> Plausibly, EU authorities could levy emissions charges (in compliance with Article 15 of the Convention) on non-EU airlines for the portions of their flights that occur in EU airspace as well. But extraterritorial jurisdiction over non-EU airlines for their emissions throughout the world potentially flouts several provisions of the Convention.

The Chicago Convention, as noted earlier, restates the customary international law of state sovereignty by recognizing that the contracting parties enjoy "complete and exclusive sovereignty over the airspace above" their territories.<sup>80</sup> The ETS imposes carbon-trading quotas on all flights to and from the EU irrespective of the identity of the air carrier or of the origin, destination, or route coordinates of the service. It would dragoon both the longest long-haul route<sup>81</sup> and the shortest intra-Union flight<sup>82</sup> into its remit. Given the Convention's genuflections to sovereignty and equality, a scheme that (to select only one of its effects) taxes U.S. airlines for transit over U.S. territory and the Atlantic Ocean appears to run afoul of Article 1's letter and spirit.<sup>83</sup>

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<sup>79</sup> This regulatory right extends from the Chicago Convention's recognition that all civil aircraft—the aircraft flown by private commercial airlines—"have the nationality of the State in which they are registered." Chicago Convention, *supra* note 8, art. 17.

<sup>80</sup> *Id.* art. 1.

<sup>81</sup> Routes such as the Dallas-London service mentioned *supra* note 73 and accompanying text.

<sup>82</sup> According to *The Guinness Book of Records*, the world's shortest commercial flight (approximately 90 seconds when conditions are suitable) is from Westray to Papa Westray in the Orkney Islands off the north coast of Scotland. See CyberTom77, *World's Shortest Scheduled Flight — 1:31min — Guinness World Record*, YOUTUBE (Oct. 3, 2009), <http://www.youtube.com/watch?v=5NAahDr1r2E>.

<sup>83</sup> The sovereignty objection is so potent that the CJEU, in ruling on the preliminary reference in the ATA's lawsuit, *see supra* note 54, exploited a technical loophole that had been mentioned in submissions by the United Kingdom. The United Kingdom contended quite correctly that the European Union (as opposed to its constituent states) is not itself a signatory to the Convention and is therefore not bound by its provisions. See Bisset & Crowhurst, *supra* note 55, at 16. Moreover, the ETS was adopted as Union legislation, and the EU institutional structure holds sway over national legal systems in areas of EU legislative competence. See DAMIAN CHALMERS ET AL., *EUROPEAN UNION LAW* 187–88 (2d ed. 2010). As a matter of international law, however, the United Kingdom and the twenty-six other individual EU member states remain bound by the Chicago Convention, regardless of any other conflicting transnational arrangements they have entered into. See Vienna Convention, *supra* note 66, art. 30(4). With respect to a more generally defined customary international law principle of airspace sovereignty, the CJEU concluded that the mere fact that non-EU airlines either depart from or arrive at EU airports during any point of their journeys made them "subject . . . to the unlimited jurisdiction of the European Union." Case C-366/10, *supra* note 54, ¶ 125. For strong criticism of that reasoning, see Havel & Mulligan, *supra* note 54, at 17–24.

In Article 12, captioned “Rules of the Air,” the Convention instructs each contracting state to ensure all foreign aircraft operating within its territory and all aircraft bearing its nationality comply with local air navigation rules.<sup>84</sup> But the Article pivots from what looks at first glance like rampant localism in its first sentence to a requirement in the second sentence that each state will keep its air navigational rules uniform “with those established from time to time” by ICAO.<sup>85</sup> In the next sentence, Article 12 sustains its tilt toward multilateralism by positing that the rules in force over the high seas “shall be those established under this Convention,” — that is, by ICAO itself.<sup>86</sup> The plain intent of the Article is a salutary one: in international air navigation, it promotes transnational uniformity in place of local exceptionalism. The ETS disturbs the intent of Article 12 in two ways. First, to the extent that the ETS has a navigational impact,<sup>87</sup> it adopts a unilateral navigational regime for EU airspace that conflicts with ICAO rules. And second, by its application to flight maneuvers over the high seas, the ETS clashes with ICAO’s exclusive jurisdiction assigned by Article 12.<sup>88</sup>

Finally, it bears repeating that Article 15 of the Convention, as interpreted earlier, disallows fees, duties, and charges — in a word, “taxes” — that are imposed unilaterally by a state or group of states on foreign airlines operating within the taxing authority’s jurisdiction when those charges do not recoup or defray the costs of providing facilities and services for civil aviation, including emissions abatement.<sup>89</sup> In compelling foreign airlines to pay for the right to emit greenhouse gases in EU territory, the European Union is arguably violating Article 15 by assessing charges on foreign carriers “in respect solely of the right of transit over or entry into or exit from its territory.”<sup>90</sup> Moreover, as noted above, such charges, whether or not their fiscal purpose aligns with Article 15, cannot under any circumstances be levied on foreign airlines operating *outside* the taxing authority’s jurisdiction without imputing a violation of the sovereignty precept in Article 1. Although the United Kingdom has tried to detoxify the ETS by characterizing it an administrative scheme,<sup>91</sup> the boundaries of unilateral state action de-

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<sup>84</sup> Chicago Convention, *supra* note 8, art. 12.

<sup>85</sup> *Id.*

<sup>86</sup> *Id.*

<sup>87</sup> The ETS arguably does have a navigational impact, since it is levied based on fuel burn and conflicts with free operational and navigational activities as aircraft conserve fuel to avoid higher emissions charges.

<sup>88</sup> The U.K. minister’s response to these arguments, not surprisingly, was simply to deny that the ETS is a regulation affecting air navigation. See Bisset & Crowhurst, *supra* note 55, at 15. The minister also contended that Article 12 does not state that the only regulations which can apply to a contracting state’s airspace are those made by the contracting state itself. See *id.* at 16. While this interpretation is literally true, it hardly seems consonant with the purpose of Article 12, and its acceptance could eviscerate ICAO’s effectiveness as the coordinating authority under the Convention.

<sup>89</sup> See *supra* note 54 and accompanying text.

<sup>90</sup> As noted, the ETS directive does not specify how the EU member states are to use revenues captured from the emissions allowance auctions. See *supra* note 76.

<sup>91</sup> Bisset & Crowhurst, *supra* note 55, at 16.

fined in Article 15 (and implicitly in Article 1) cannot be set aside by clever wordplay.

While neither ICAO nor the International Court of Justice (“ICJ”) has ever issued an authoritative ruling on the type of unilateral, extraterritorial emissions regulation contemplated by the EU ETS, the recent repudiation of the ATA’s challenge to the ETS by the Court of Justice of the European Union (“CJEU”) provides little guidance on the matter. Apart from the fact that CJEU rulings are binding only on EU member states and lack force as general international law, the Court in its judgment on a preliminary reference from the English High Court thwarted the application of the Chicago Convention by holding that the treaty applies to individual member states but not to the Union as a whole.<sup>92</sup> Moreover, even if the CJEU had adopted the stronger position that the EU ETS complies with the Chicago Convention,<sup>93</sup> states aggrieved by the ETS can still pursue challenges before ICAO (and perhaps the ICJ)<sup>94</sup> or initiate arbitration under their air services agreements (“ASAs”) with the European Union or its member states.<sup>95</sup> Given that the legal literature is replete with disagreement concerning the legality

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<sup>92</sup> The CJEU did choose to consider certain provisions of the 2007 U.S.-EU Agreement, which are modeled on Articles 15 and 24 of the Chicago Convention, but only insofar as those Articles bear on the imposition of taxes on fuel consumption in international air transport. Under both the Agreement and the Convention, the consumption of fuel in international air transport is normally not taxable. The U.S. plaintiffs claimed that the EU ETS violates that longstanding principle. See Case C-366/10, *supra* note 54, ¶ 136. The Court’s analysis focused solely on the technical question of whether carbon emissions allowances, which fluctuate in price according to market forces, can be linked in a predetermined way (e.g., by published tax rates) to the amount of fuel consumed. The Court found that they could not, and therefore that the allowances do not function as a typical fixed tax or charge on fuel consumption as understood in international aviation law. See *id.* ¶¶ 137–47. The ruling’s narrowness makes it unhelpful in deciding the general question of unilateralism raised in this Article. For a discussion of what they regard as the Court’s deeply flawed analysis of the fuel tax issue, see Havel & Mulligan, *supra* note 54, at 27–32.

<sup>93</sup> This approach was pursued by the Advocate General in her earlier opinion on the U.S. airlines’ lawsuit but, as noted in the main text, it did not find its way into the CJEU’s final ruling. See generally Case C-366/10, *Air Transp. Assoc. of Am. v. Sec’y of State for Energy and Climate Change*, available at [http://ec.europa.eu/clima/news/docs/2011100601\\_case\\_c366\\_10\\_en.pdf](http://ec.europa.eu/clima/news/docs/2011100601_case_c366_10_en.pdf) (Oct. 6, 2011) (unpublished opinion of Advocate General Kokott). For fuller treatment of the Advocate General’s views, see Havel & Mulligan, *supra* note 54.

<sup>94</sup> There is good reason to doubt that a formal ICAO challenge could, in itself, stay the European Union’s regulatory hand. See Sanchez, *supra* note 34 (discussing the limits of dispute settlement under the Chicago Convention). The January 1, 2012 launch date of the ETS for aircraft emissions was entirely unaffected by the making of a formal complaint to the ICAO Council, possibly setting the stage for a formal challenge to the ETS before the Organization in accordance with Article 84 of the Chicago Convention. See Vijay Poonosmay, *Rising to the Environmental Challenge to Aviation: The Need for a Global Solution*, CAPA CENTRE FOR AVIATION (Jan. 9, 2012), <http://www.centreforaviation.com/analysis/rising-to-the-environmental-challenge-to-aviation-the-need-for-a-global-solution-65766>.

<sup>95</sup> See, e.g., U.S.-EU Agreement, *supra* note 25, art. 19. In international aviation, ASAs are the primary mechanism by which states exchange market access rights for their air carriers. Though there are literally thousands of ASAs currently in force, many with different provisions related to dispute settlement, U.S. ASAs typically rely on a mix of consultations and arbitration to resolve differences. See U.S. Dep’t of State, *Air Transport Agreement Between the Government of the United States of America and the Government of [Country]* arts. 13–14 (Jan. 10, 2008), available at <http://www.state.gov/documents/organization/114970.pdf>.

of dragooning non-EU airlines into the ETS, the outcomes of proceedings in such diverse fora certainly cannot be predicted.<sup>96</sup>

Despite the legal uncertainty, a few observations pertinent to our broader theme can be made.<sup>97</sup> First, any apparent inconsistency between the ETS and various provisions of the Chicago Convention would be removed if the United States, China, or any other state with airlines eligible for inclusion under the ETS were to consent to its application. Consent, in fact, reveals what we have earlier described as the perfectly rational paradox of sovereignty, namely, that it is most jurisprudentially robust in the moment when it is being given away. Second, ICAO's power to regulate air transport over the high seas does not shield aircraft from their home state's oversight when they are in flight over international waters.<sup>98</sup> The U.S. objection to the EU ETS, as expressed in the ATA's recent litigation, is that it regulates the operations of airlines of *other states* over the high seas, not solely those of EU carriers.<sup>99</sup> States could — in conformity with our argument in the previous section<sup>100</sup> — relinquish regulatory control over their air carriers' emissions, including discharges over the high seas, to the remit of the European Union. Finally, it is uncontested as a matter of international law that the European Union is entitled to regulate the carbon footprint of its own carriers across the planet as it deems fit; only the Union's unilateral oversight of emissions by non-EU carriers outside EU territory has caused anger.<sup>101</sup> Legal (and political) doubts about the EU ETS, therefore, should not discour-

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<sup>96</sup> See, e.g., Ruwantissa Abeyratne, *Emissions Trading — Recommendations of CAEP/7 and the European Perspective*, 32 AIR & SPACE L. 358 (2007); Andreas Hardeman, *A Common Approach to Aviation Emissions Trading*, 32 AIR & SPACE L. 3 (2007); Andrew Macintosh, *Overcoming the Barriers to International Aviation Greenhouse Gas Emissions Abatement*, 33 AIR & SPACE L. 403 (2008). For a different approach that attacks the EU ETS on economic and policy grounds, see P. Paul Fitzgerald, *Europe's Emissions Trading System: Questioning its Raison D'être*, 10 ISSUES AVIATION L. & POL'Y 189 (2011).

<sup>97</sup> Though somewhat peripheral to the thrust of our argument, there are pragmatic reasons why the European Union might abandon its plan to bring non-EU airlines under its ETS. Regardless of the measure's legality, the Union's insistence on an internationally unpopular and contentious regulation could sour its aeropolitical relations with some of the world's biggest aviation powers. Cooperation on vital issues such as air transport liberalization, aviation security, and safety could be in jeopardy. Also, analysts have forecast that the ETS, even if applied to non-EU carriers, is still likely to inflict competitive harms on EU airlines. See Janina Scheelhaase et al., *The Inclusion of Aviation into the EU Emission Trading Scheme — Impact on Competition Between European and Non-European Network Airlines*, 15 TRANSP. RESEARCH PART D 14 (2010). A global agreement which apportions standardized emissions reduction measures to all of the world's airlines is likely to ensure that EU carriers are not competitively disadvantaged vis-à-vis non-EU carriers.

<sup>98</sup> The Chicago Convention states that “[a]ircraft have the nationality of the State in which they are registered.” Chicago Convention, *supra* note 8, art. 17. As such, states may continue to regulate the aircraft of their air carriers, regardless of where they are flying in the world. See *supra* note 79. This right does not, however, obviate the right of states to regulate the operations of foreign aircraft within their jurisdictional airspace. See Chicago Convention, *supra* note 8, arts. 11–12.

<sup>99</sup> See Bisset & Crowhurst, *supra* note 55, at 15.

<sup>100</sup> See *supra* Part I.B.

<sup>101</sup> See, e.g., Gabriel S. Sanchez, *European Unilateralism*, NAT'L L.J., Mar. 31, 2008, at 23.

age any effort by like-minded states to negotiate and implement a collaborative, consensual, and multilateral aviation emissions reduction treaty. So long as these states do not trample on the treaty rights of their Chicago Convention peers, the international aviation legal regime remains open to the possibility of developing a sector-specific emissions treaty for aviation.

## II. INTERNATIONAL PARETIANISM AND THE (IN)FEASIBILITY OF A “BIG BANG” AGREEMENT

In the remainder of this Article, we set in place our framework for an aviation emissions reduction treaty, examining two possibilities for multi-state agreement. The first, a “big bang”<sup>102</sup> approach enveloping all 194 of the world’s states, is likely infeasible because of the significant dispersion of state interests and the unlikelihood that such an agreement would comply with the pragmatic principle of International Paretianism. The second possibility, an incremental arrangement brokered by a self-selecting group of like-minded states, is more imaginable and could leverage the existing aeropolitical achievement of the 2007 U.S.-EU Air Transport Agreement. Through its innovative standing Joint Committee, as we will discuss, the U.S.-EU Agreement explicitly provides for cooperation between the contracting parties on environmental questions. Of equal relevance, the U.S.-EU Agreement can be construed as a plurilateral mechanism whereby non-parties have the opportunity to accede to its terms.

Before considering the second possibility, we need to explain why we think the first is probably unworkable. In a world of furiously competing national interests and unstable crossborder relations,<sup>103</sup> persuading 194 sovereigns to converge on a sector-specific emissions reduction treaty for aviation would be a formidable challenge, even against the backdrop of a long history of international technical collaboration through ICAO. But it is possible. To be feasible, the treaty would have to satisfy what Eric Posner and David Weisbach refer to as “the principle of International Paretianism: all state parties must believe themselves better off by their lights as a result of the . . . treaty.”<sup>104</sup>

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<sup>102</sup> Outside of the field of cosmology, “big bang” is typically deployed to refer to sudden, even unexpected, measures, such as the Thatcher Government’s 1986 rollback of controls on the London Stock Exchange. See John Plender, *London’s Big Bang in International Context*, 63 INT’L AFFAIRS 39 (1986). In an ideal world, global collective action problems, such as reducing greenhouse gases at the international level, would be solved by equally sudden measures.

<sup>103</sup> See generally ROBERT KAGAN, *THE RETURN OF HISTORY AND THE END OF DREAMS* (2008).

<sup>104</sup> ERIC A. POSNER & DAVID WEISBACH, *CLIMATE CHANGE JUSTICE* 6 (2010).

Though derived from the concept of Pareto efficiency in normative economics,<sup>105</sup> satisfaction of International Paretianism is not restricted to perceived wealth increases; other non-monetized welfare-enhancing considerations are included in the calculus as well. A state sufficiently troubled by global climate change may assign a higher value to offsetting the negative consequences of climate change than to minimizing the financial costs associated with emissions reduction, although such calculations will vary with the state's overall economic position, the degree of harm it is likely to suffer from global climate change, and other political considerations. Further, International Paretianism is not an ethical principle. It is entirely a practical constraint: in a Westphalian system, "treaties are not possible unless they have the consent of all states, and states only enter treaties that serve their interests."<sup>106</sup> According to Posner and Weisbach, a hypothetical comprehensive global climate treaty satisfies International Paretianism only if it "will generate a surplus — the climatic benefits minus the costs of abatement — that can be distributed in the form of credits or monetary payments among countries on the basis of ethical postulates."<sup>107</sup> In other words, at least some states will be made better off by the treaty's emissions reduction targets and no state will be made worse off by the costs associated with that reduction.<sup>108</sup>

Because a global sectoralized emissions treaty could not be a "game changer" on the scale of a comprehensive global climate change treaty, one might suspect that it would need many fewer indicators about the Pareto

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<sup>105</sup> "A change is said to be Pareto superior if it makes at least one person better off and no one worse off." RICHARD A. POSNER, *THE ECONOMICS OF JUSTICE* 54 (1981). The exacting standard of Pareto efficiency is oftentimes tempered by the Kaldor-Hicks or Potential Pareto Superiority criterion, "which requires not that no one be made worse off by a change in allocation of resources but only that the increase in value be sufficiently large that the losers can be fully compensated." *Id.* at 91.

<sup>106</sup> POSNER & WEISBACH, *supra* note 104, at 6.

<sup>107</sup> *Id.* at 7. The reader may be surprised by the tilt toward "ethical postulates" here, given the moral agnosticism that we have just ascribed to International Paretianism. But the principle does not preclude the possibility (indeed, the likelihood) that states will mix ethical (even altruistic) ideas into their assessment of whether an international agreement is in their rational self-interest, i.e., makes them better off than they were *ex ante*. As Posner and Weisbach note, however, ethical considerations are likely to play only a modest role in the forging of a global climate change treaty. *See id.* at 179.

<sup>108</sup> Illustrating how the interests of different states collide with one another, sometimes incongruously, part of the argument made by Posner and Weisbach rests on a belief that states which will endure high costs to combat climate change, yet are not likely to be seriously harmed by the potential economic, ecological, and social harms of global warming, will need the inducement of transfer payments from countries facing high risks. In practice, this would lead to the arguably perverse consequence that extremely poor states in the Southern Hemisphere, which are negligible emitters of greenhouse gases compared to the rest of the world but which face future jeopardy from climate change, should (on a *pro rata* basis) compensate rich countries like the United States and the EU member states for emissions abatement costs. Without these payments, Posner and Weisbach suggest that capital expenditures borne by wealthy countries to boost the climatic welfare of poorer states will amount to effective wealth transfers well in excess of any foreign aid packages even the most generous rich countries would want to (or could) deliver. *See id.* at 178–81.

“payoffs” it offered to attract adherents and to maintain compliance. But in fact the reverse may be true. At least insofar as Posner and Weisbach seem to apply International Paretianism, it would appear that the very comprehensiveness of a global climate treaty allows the participating states — in fact, *requires* them — to monetize the Pareto surplus (the “payoffs”) within the framework of the agreement. Each State can operate entirely inside the structure of the agreement to make its best calculations as to loss or gain. For a sectoralized aviation agreement, in contrast, the congeries of specifically aviation interests affecting every single state, regardless of its stage of prosperity, vitiates any notion of a readily calculable surplus. Few states are going to view an aviation emissions treaty, as they might view the Paretian satisfaction of a global climate change treaty, with this kind of conceptual autonomy. Aeropolitical and aeroeconomic considerations must necessarily intrude.

We are mindful that International Paretianism seeks to indicate what is plausible as opposed to what is ultimately desirable. In that light, we believe, a global aviation emissions agreement is unlikely to meet International Paretianism’s win/not lose benchmark. A few examples should clarify the point. On the “win” side, some rising aviation powers may be keen on an aviation emissions treaty for reasons wholly or partly collateral to emissions reduction motives. The United Arab Emirates, for example, may welcome an agreement simply because its airlines own newer, fuel-efficient fleets, and will see a more exacting regime for cleaner operations as a competitive spur.<sup>109</sup> And some states might acquiesce to an aircraft emissions agreement chiefly in order to reap commercial goodwill (to be exploited later in non-aviation sectors) with the treaty’s circle of adherents. On the other hand, China, which makes no secret of its unwillingness to accept binding emissions caps for its industrial sectors, has been just as vocal in asserting that it will incubate its own aviation champions to outcompete European and North American international air carriers (and aircraft manufacturers).<sup>110</sup> It is unlikely that China will be open to emissions reduction obligations that could crimp the growth of its aviation sector.<sup>111</sup> India, too, may have similar inclinations and equal hesitancy.<sup>112</sup>

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<sup>109</sup> See generally *The Environment*, EMIRATES, <http://www.emirates.com/au/english/about/environment/emvionment.aspx> (last visited June 14, 2012) (on file with the Harvard Law School Library) (discussing the fuel efficiency of Emirates’ state-of-the-art aircraft).

<sup>110</sup> Indeed, China remains committed to protectionism and managed trade in air services with foreign states. See generally Ashley Renee Beane, *Aviation Relations Between the United States and China: Are Open Skies on the Horizon?*, 72 J. AIR L. & COM. 803 (2007).

<sup>111</sup> Cf. Anthony Kuhn, *China Resists Emissions Caps in Climate Policy*, NPR (June 4, 2007), available at <http://www.npr.org/templates/story/story.php?storyId=10693465> (noting China’s resistance to emissions caps that would curtail economic growth across its industrial sectors).

<sup>112</sup> See generally JYOTI K. PARIKH & KIRIT PARIKH, *CLIMATE CHANGE: INDIA’S PERCEPTIONS, POSITIONS, POLICIES AND POSSIBILITIES* (2002), available at <http://www.oecd.org/dataoecd/22/16/1934784.pdf> (discussing the balance India is attempting to strike between sustainable and environmentally conscious development and economic growth). Moreover, China

In the end, the diffuseness of their interests makes it improbable, in our view, that nearly 200 states would readily coalesce around any aviation emissions reduction treaty, no matter how minimalist its obligations might become.<sup>113</sup> But this pragmatic realization need not be terminal. As noted, an incremental alternative that may be much less offensive to International Paretianism is also available.

### III. AN INCREMENTAL APPROACH: LEVERAGING THE U.S.-EU TREATY

Though International Paretianism may dash hopes for a “big bang” aviation emissions reduction agreement, the geopolitical barriers to universal consensus do not mean that there is resistance to *any* sectoralized agreement in this area. States with strong — though not necessarily identical — interests in offsetting aviation’s environmental effects can still barter a geographically limited treaty that requires the parties to apply standardized MBMs to their own airlines, and, by consensus, to the airlines of the other parties as well. As we discussed in Part I, the European Union — one of the largest economic blocs in the world — already has in place a cross-sectoral ETS that it is resolved to extend to all air transport operations, by all airlines, into and out of EU airspace jurisdiction. Presumably, as our earlier discussion suggested, international law will allow the European Union to apply the full panoply of its ETS to airlines established and licensed in one of its twenty-seven member states; non-Union airlines, which are collectively responsible for the bulk of the world’s aviation emissions, could only be subject to the ETS, *as a matter of international law*, during overflight, landing, and departure operations in EU airspace.<sup>114</sup> By the same reasoning, any non-EU carrier operating wholly outside that airspace could not be covered at all.<sup>115</sup> If the political will that drives the EU ETS is to add value to the present discussion, however, we will need to revisit the international law foundations for an aviation ETS.

For a sector-specific agreement to make meaningful cuts in aircraft emissions, it must not only contain a workable abatement mechanism but also attract a critical mass of State adherents so that its coverage of aircraft operations passes some rational threshold of utility. In this Part, we lay out

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and India are among a consortium of states which oppose the application of the EU ETS to their airlines. See Andrew E. Kramer, *Opponents to European Airline Emissions Law Prepare Their Countermeasures*, N.Y. TIMES, Feb. 22, 2012, <http://www.nytimes.com/2012/02/23/business/global/opponents-to-european-airline-emissions-law-prepare-their-countermeasures.html>.

<sup>113</sup> See generally Gabriel S. Sanchez, *Is Anyone Tough Enough to Push Through an Aviation Emissions Agreement?*, CONVERSATION (Dec. 2, 2011), <http://theconversation.edu.au/is-anyone-tough-enough-to-push-through-an-aviation-emissions-agreement-4555>.

<sup>114</sup> See *supra* Part I.B.–C. (analyzing the legal controversy surrounding the application of the EU ETS to non-EU airlines).

<sup>115</sup> This is not even a contentious legal point. The EU ETS regulation, as it currently stands, does not cover flights that do not originate from, terminate in, or pass over the territory of one or more EU member states. See generally Directive 2008/101/EC, *supra* note 74.

the framework for such an agreement and argue that it should rely primarily on MBMs to achieve its emissions reduction goals.<sup>116</sup> Because revenues generated through MBMs can be reinvested in improving the environmental efficiency of states' air transport sectors and, in limited cases, can be rerouted to assist developing countries in their own emissions reduction efforts, MBMs have pragmatic and normative appeal.

We then turn to an analysis of how U.S. and EU aeropolitical will, reflected in the 2007 U.S.-EU Air Transport Agreement, could be leveraged to solicit wider participation in a sector-specific accord.

### A. *Choosing the Mechanism: The Market Method*

Which carbon reduction mechanism can be applied to air transport without sacrificing competitiveness or distorting the global aviation market? Though such a mechanism should be effective, it may not be *the most* effective option available. Quick "solutions" could include forcibly grounding a large number of aircraft or restricting air traffic to high-volume routes utilizing the most fuel-efficient aircraft and mandating that they be at or near capacity before being cleared to fly. More strident critics of the aviation industry demand an annual flight quota (long-haul and short-haul) for each traveler,<sup>117</sup> risking revival of the kind of pre-deregulation "Pullman" fare structure that made air travel a luxury good in the United States.<sup>118</sup> Such draconianism would have a terrible financial impact on the industry, as well as on the many parts of the trading economy that rely on air transport.<sup>119</sup> Further, state meddling and even abuse would likely infect the huge regulatory apparatus needed for command planning. Preference of airlines with respect to capacity, frequency, and route allocation would bring back the old incumbency and "capture" defects of regulation.<sup>120</sup>

In this contentious setting, MBMs (taxes and carbon trading) are manifestly the more flexible and less burdensome alternatives. Their use has

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<sup>116</sup> In line with ICAO's wishes, presumably *any* future agreement (multilateral or otherwise) that addresses aviation emissions ought to rely on MBMs. See Assembly Resolution A-37/19, *supra* note 16, annex. Moreover, arguments have been made that MBMs, such as the EU ETS, can have significant abatement effects. See, e.g., David S. Lee et al., *Aviation and Global Climate Change in the 21st Century*, 43 *ATMOSPHERIC ENV'T* 3520 (2009).

<sup>117</sup> See Gary Crichlow, *Aviation and the Environment — What's So Special About the Industry?*, AVIATION 2020 BLOG (Mar. 11, 2010), <http://www.ascendworldwide.com/2010/03/aviation-and-the-environment—whats-so-special-about-the-industry.html>.

<sup>118</sup> On the "Pullman" fare structure, see BRIAN F. HAVEL, *BEYOND OPEN SKIES: A NEW REGIME FOR INTERNATIONAL AVIATION* 244–46 (2009). During the pinnacle years of rail transportation, "Pullman" fares were the premium passengers paid for overnight train accommodations.

<sup>119</sup> According to a recent study, aviation supports more than 15 million jobs and \$1.1 trillion of GDP worldwide. Moreover, if the air transport sector were a country, its GDP would be \$425 billion — outpacing even some members of the G20. See OXFORD ECON., *supra* note 20, pt. I.

<sup>120</sup> See HAVEL, *supra* note 118, at 235–301 (surveying the history of U.S. air transport regulation and its progressive liberalization).

been endorsed, in principle, by ICAO, its member states,<sup>121</sup> and the airline industry.<sup>122</sup> In theory, there is little difference between a tax or an emissions trading system; so long as the tax is identical to the charges levied on airlines in a trading system, it makes little theoretical difference which measure is chosen to satisfy the agreement's emissions reduction benchmarks.<sup>123</sup> Practically speaking, however, it may be difficult — if not impossible — for states to know *ex ante* how to set an emissions tax at a level that will steer the airlines toward the agreed reduction goals. In contrast, emissions trading, to the extent it is allowed to function without government distortion,<sup>124</sup> allows the market to set the price necessary to induce emissions reduction. The choice of MBM will also take account of the comparative administrative costs associated with each measure. Moreover, a carbon trading scheme would have the further advantage of smoother integration into a future global climate change arrangement where emissions credits could be cross-traded among industrial sectors.

As indicated in Part I, ICAO has already crafted “Guiding Principles” for the adoption of MBMs.<sup>125</sup> Most of these guidelines are predictable, if not anodyne. Thus, the Principles recommend that MBMs “support sustainable development of the international aviation sector”; “be transparent and administratively simple”; “be cost-effective”; “minimize carbon leakage and market distortions”; and “ensure the fair treatment of the international aviation sector in relation to other sectors.”<sup>126</sup> In light of Article 15 of the Chicago Convention, however, it is especially important to note ICAO's teleological admonition that “where revenues are generated from MBMs . . . they should be applied in the first instance to mitigating the environmental impact of aircraft engine emissions, including mitigation and adaptation, as well as assistance to and support for developing States.”<sup>127</sup> Whatever the

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<sup>121</sup> See Assembly Resolution A36-22, *supra* note 14.

<sup>122</sup> See IATA, *supra* note 16.

<sup>123</sup> See POSNER & WEISBACH, *supra* note 104, at 44–46 (discussing how a tax and emissions trading system can be theoretically calibrated to achieve identical levels of reduction). Some emissions reduction advocates believe that an international cap-and-trade system is superior because it provides states with more flexibility to allocate credits in pursuit of distributional goals. In reality, however, this is simply a way to “disguise” foreign aid-type wealth transfers from rich to poor states — and not a particularly good one at that. See *id.* at 48–52.

<sup>124</sup> One of the main points of controversy in devising the EU ETS for aviation was the percentage of emissions credits which would be withheld from the airlines and placed up for auction by the member states. See Staniland, *supra* note 17, at 171–74. After a series of political rows with the European Parliament, the airlines, and environmental organizations, the member states agreed that only fifteen percent of the airlines' emissions credits would be auctioned during the scheme's first year. See *id.* at 174.

<sup>125</sup> See Assembly Resolution A37/19, *supra* note 16, annex.

<sup>126</sup> *Id.*

<sup>127</sup> *Id.* It is not only because of Article 15 that reinvestment should occur. Pragmatically, an incremental agreement that obligates states to assign MBM revenues to their air transport sectors should assuage industry fears that airlines are being targeted by states to help fill national coffers. Which specific projects ought to be undertaken can be decided on a state-by-state basis. For instance, countries with heavy traffic volumes and an outmoded air traffic management system (e.g., United States) could use the revenues to accelerate their transition from radar-based to satellite-based systems. Other countries that face serious congestion at

normative and practical merits of these transfers to developing countries, it would be a mistake to weigh down an emissions treaty with mandates of this kind. Even if the proposition is accepted in principle, there are likely to be defections in practice — particularly where an obligated state believes that public funding of its own air transport sector is necessary for the sustainability or growth of its national airlines.<sup>128</sup> Finally, while the putative treaty could derogate from Article 15's proscription against imposing general revenue taxes on international aviation,<sup>129</sup> it is likely that airline industry would endorse an agreement that did nothing to ratchet back the current practice whereby states blithely ignore Article 15 and deposit revenues from "green" taxes into their general bank accounts.<sup>130</sup>

International Pareitism, therefore, is not completely irrelevant to the selection of an appropriate MBM mechanism. To the extent that an incremental agreement can satisfy many (though perhaps not all) of the aforementioned ICAO "Guidelines," while also keeping emissions revenues within the international air transport industry, it gains feasibility.<sup>131</sup> Pareto "payoffs" from MBMs could include using MBM revenues to refurbish air transport infrastructure or support research and development into "green" technologies that can further reduce aviation's dependency on fossil fuels. Using MBMs to meet ICAO's "Guidelines" may also convince states that place a premium on global cooperation through transnational institutions that supporting the agreement will better satisfy their "cosmopolitan" interests.

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their airports (e.g., EU member states) could expand airport capacity or, in instances of strong public resistance, invest in making secondary airports more attractive. Other possible initiatives could include subsidizing research and development in "green" aircraft technology. *See* WORLD ECON. FORUM, POLICIES AND COLLABORATIVE PARTNERSHIP FOR SUSTAINABLE AVIATION 24 (2011). While some stakeholders may want to tame the temptation of some states to use MBM revenues to subsidize their national carriers, such restrictions are likely to be resisted at the international level. As the recent history of aviation in the European Union has shown, even liberal air transport regimes have tolerated public aid to ailing air carriers. *See* HAVEL, *supra* note 118, at 497–502 (discussing efforts by Greece and Italy to prop up their ailing airlines with public subsidies).

<sup>128</sup> Incidentally, there is no international agreement which addresses air transport subsidies. Aviation remains largely outside the WTO's General Agreement on Trade in Services ("GATS"). *See* General Agreement on Trade in Services [GATS], Annex on Air Transport Services, Marrakesh Agreement Establishing the World Trade Organization, Annex 1B, Legal Instruments — Results of the Uruguay Round, Apr. 15, 1994, 1869 U.N.T.S. 183, 33 I.L.M. 1125, 1167; *see also* Bernard Hoekman, *Assessing the General Agreement on Trade in Services*, in *THE URUGUAY ROUND AND THE DEVELOPING COUNTRIES* 88, 97 (Will Martin & L. Alan Winters eds., 1996) ("GATS does not impose general disciplines on subsidies either, only subjecting them to general obligations.").

<sup>129</sup> *See supra* Part I.B.

<sup>130</sup> As mentioned, the EU ETS leaves open this possibility. Other state "eco-taxing" schemes with respect to aviation, such as the now-defunct takeoff tax imposed by the Netherlands in 2009, have failed to earmark the revenues for emissions abatement purposes. *See* Brian F. Havel & Neils van Antwerpen, *The Dutch Ticket Tax and Article 15 of the Chicago Convention*, 34 AIR & SPACE L. 141 (2009).

<sup>131</sup> This feasibility would be sorely diminished, however, in a "big bang" context where even states that had objected to *many* of the ICAO "Guidelines" would need to have their interests met in order to accede to the agreement.

In any event, luring additional adherents to the treaty will probably require demonstrating that such payoffs do indeed exist.

### B. *Developing the Agreement*

As noted previously, neither ICAO nor any of its member states now sees the Organization as the sole or exclusive agency for international aviation emissions control.<sup>132</sup> In fact, recent ICAO resolutions countenance bilateral and multilateral initiatives outside the Organization, rejecting only the kind of unilateralism modeled by the EU carbon trading scheme. The logical next step in advocating a multilateral, consensual, sectoralized, and incremental emissions treaty, created outside ICAO but compliant with its benchmarks, is to identify a diplomatic “site” for such an agreement. The selected site must not only be realistic but also should offer a means whereby states not privy to the initial negotiations can accede later when their perceived interests direct them to do so.

The European Union remains committed to a unilateral ETS that controversially ensnares non-EU airlines. The Union’s largest air services trading partner, the United States, opposes what it sees as the ETS air-grab,<sup>133</sup> but U.S. policymakers remain oriented toward finding a consensual international response to aviation emissions reduction.<sup>134</sup> Other states, too, favor cutting emissions but similarly excoriate EU regulatory overreaching.<sup>135</sup> Yet these sharp divides did not prevent U.S. and EU negotiators from concluding a 2007 treaty that scrapped decades of calcified restrictions on the exchange of air traffic access rights between their two jurisdictions.<sup>136</sup> The 2007 U.S.-EU Air Transport Agreement, now being imitated in other regions,<sup>137</sup> is serv-

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<sup>132</sup> See *supra* Part I.A.

<sup>133</sup> See James Kanter, *U.S. Steps Up Its Effort Against a European System of Fees on Airline Emissions*, N.Y. TIMES, Sept. 9, 2010, at A1.

<sup>134</sup> Cf. FAA Modernization and Reform Act of 2012, Pub. L. No. 112-95, § 509, 126 Stat. 11 (2012) (noting Congress’s displeasure that the EU ETS circumvents the “consensus-based” approach of ICAO for emissions regulation).

<sup>135</sup> See, e.g., Aaron Karp, FAA, *Airlines Continue to Attack EU ETS*, ATW ONLINE, May 5, 2011, <http://atwonline.com/international-aviation-regulation/news/faa-airlines-continue-attack-eu-ets-0504>; *China Says EU Airline CO2 Cap Should Protect Poor Countries*, REUTERS, May 11, 2011, <http://af.reuters.com/article/energyOilNews/idAFB9E7FC01Q20110511>.

<sup>136</sup> In particular, the parties’ airlines have the right to perform service to, from, or beyond any point in each other’s territory without restrictions on capacity, flight frequency, or aircraft type. See U.S.-EU Agreement, *supra* note 25, art. 3. Moreover, EU airlines enjoy the hitherto unprecedented privilege of staging their transatlantic services from any point within the Union. For instance, Air France can provide standalone service from London Heathrow to Los Angeles without the traditional requirement that some portion of the service touch French soil.

<sup>137</sup> The European Union finalized a similar accord with Canada in 2008. See Brian F. Havel & Gabriel S. Sanchez, *Restoring Global Aviation’s “Cosmopolitan Mentalité”*, 29 B.U. INT’L L.J. 1, 31–36 (2011) (discussing the agreement and its future implications for liberalization). The European Union is currently in negotiations with Australia for a highly liberal air services treaty. See Press Release, Eur. Comm’n, *Open Skies — Europe and Australia* (June 17, 2008). Beyond the European theatre, the Association of Southeast Asian Nations and the African Union are attempting imitative arrangements of their own. See generally CHARLES E.

ing as the cornerstone of a new post-mercantilist regulatory system for international aviation. Moreover, the Agreement does much more than liberalize air traffic rights. In a radical break with the standard template for bilateral air services negotiations, U.S. and EU aviation officials added several chapters to the 2007 Agreement that contemplate regulatory convergence (and even eventual harmonization) in areas such as security, safety, competition, and the environment.<sup>138</sup> In another remarkable innovation, the Agreement establishes a standing consensus-based body, the Joint Committee, to steer the process of convergence.<sup>139</sup> On environmental questions, in an amending protocol to the Agreement signed in 2010, U.S. and EU negotiators stated their “inten[tion] to work together to limit or reduce, in an economically reasonable manner, the impact of international aviation on the environment.”<sup>140</sup> The parties also affirmed their openness to working through the Joint Committee “to develop recommendations that address issues of possible overlap between and consistency among [MBMs] regarding aviation emissions implemented by [them] with a view to avoiding duplication of measures and costs and reducing to the extent possible the administrative burden on airlines.”<sup>141</sup> Finally, the Joint Committee remains charged with “fostering expert-level exchanges on new legislative or regulatory initiatives and developments . . . in the field[ ] of . . . the environment[.]”<sup>142</sup>

With sixty percent of global air traffic movements occurring within and between these two blocs, the demonstration effects of a bilateral emissions reduction treaty arranged within the structures of the 2007 Agreement would be powerful. These demonstration effects need not be a static phenomenon; as we have surveyed in earlier work,<sup>143</sup> the trade concessions delivered in the 2007 Agreement are available to third party states to the extent that it functions as a plurilateral agreement.<sup>144</sup> While not *expressis verbis* plurilateral, the Agreement does extend its terms to third parties following the elaboration of conditions and procedures for their accession by representatives from the United States and European Union.<sup>145</sup> Indeed, two European countries that remain outside the EU, Iceland and Norway, acceded to the 2007 Agreement in 2009.<sup>146</sup> U.S. and EU aviation officials, accordingly, are comfortable with the idea of plurilateral treaty-making and could be expected to

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SCHLUMBERGER, OPEN SKIES FOR AFRICA: IMPLEMENTING THE YAMOOUSSOUKRO DECISION (2010); Alan Khee-Jin Tan, *The ASEAN Multilateral Agreement on Air Services: En Route to Open Skies?*, 16 J. AIR TRANSP. MGMT. 289 (2010).

<sup>138</sup> See U.S.-EU Agreement, *supra* note 25, arts. 8–10, 14–15.

<sup>139</sup> See *id.* art. 18.

<sup>140</sup> U.S.-EU Protocol, *supra* note 25, art. 3(1).

<sup>141</sup> *Id.* art. 3(7).

<sup>142</sup> *Id.* art. 5(4)(j).

<sup>143</sup> See HAVEL, *supra* note 118; Havel & Sanchez, *supra* note 137, at 26–28.

<sup>144</sup> A plurilateral agreement offers non-parties the opportunity to accede after the agreement has come into effect among its founding parties, but typically the latecomers must accept the terms of the agreement in their entirety. See RESTATEMENT (THIRD), *supra* note 28, § 312 cmt.b.

<sup>145</sup> See U.S.-EU Agreement, *supra* note 25, art. 18(5).

<sup>146</sup> See Press Release, Eur. Comm’n, Iceland and Norway Join EU-US Air Transport Agreement, IP/09/1962 (Dec. 17, 2009), available at <http://europa.eu/rapid/pressReleases>

incorporate a comparable mechanism (or process) into an emissions reduction treaty which evolves from their collaboration within the Joint Committee.

A U.S.-EU aviation emissions agreement should be written to comply with the principles (including international law principles) considered in this Article. Each party will impose the agreement's common emissions tax or trading system on its own carriers and the agreement can be engineered so that either party may cede regulatory control over its airlines' emissions, including discharges over the high seas, to the remit of the other party, or to a joint administrative agency. Moreover, any inconsistency between the agreement and various provisions of the Chicago Convention (for example, with respect to deployment of revenues<sup>147</sup>) would be vitiated by force of the parties' mutual consent to the agreement.

There would still be sizeable gaps in the geographic scope of a U.S.-EU aviation emissions agreement. Major non-Western international air carriers such as Hong Kong's Cathay Pacific, Dubai's Emirates, and Singapore Airlines would be at liberty to operate beyond the agreement's reach.<sup>148</sup> Would these airlines' home states accede to a U.S.-EU emissions reduction arrangement into which they had little or no input? A possible enticement would be simultaneous accession to the liberal air services trade environment created by the 2007 Agreement and its 2010 Protocol. Although several large EU carriers would find the prospect deeply unsettling, rising aviation powers — and growing aviation greenhouse gas emitters — such as China, the United Arab Emirates, and India would readily see how the 2007 Agreement could generate substantial market access benefits for their airlines.<sup>149</sup> States already pursuing liberal air services trade relations with the United States and European Union, such as Canada and Australia, may be persuaded to adhere to an emissions reduction agreement as part of these countries' broader cul-

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Action.do?reference=IP/09/1962&format=HTML&aged=1&language=EN&guiLanguage=en.

<sup>147</sup> This is a larger question, of course, than just compliance with the Convention. The Convention, for example, does not regulate airline subsidies, but the parties may wish to include limits on using funds for these purposes in order to maintain a fair competitive environment. They might also wish to adopt general principles to be observed when determining which infrastructural improvements should be prioritized. As discussed *supra* Part II, states may be leery of binding themselves to any specific set of spending proposals.

<sup>148</sup> This assumes, of course, that the Chicago Convention comprehensively bars states from unilaterally imposing emissions taxes and charges on foreign air carriers. If, however, the Convention is given a more flexible reading in order to allow states to impose such charges on foreign air carriers for *at least* the period when these airlines are within the charging states' airspace, then presumably the United States and European Union can extend limited application of their treaty to these non-party airlines as well. Even so, the coverage would remain marginal, for example capturing only the limited EU airspace penetration of a Cathay Pacific flight from Hong Kong to London or an Emirates flight from Dubai to New York.

<sup>149</sup> Admittedly, Lufthansa and Air France/KLM will not welcome intensified competition from UAE carriers Emirates and Etihad. But if the European Union is truly wedded to its publicly expressed commitments to carbon reduction, should it not be willing to forego market protectionism to expand coverage for an aviation emissions reduction agreement?

tures of international cooperation.<sup>150</sup> And for states which may be willing to commit to emissions reduction but remain uninterested in further liberalizing their aviation trade relations, provision could be made to integrate them into the administrative operation of the agreement's MBMs.<sup>151</sup> As the circle of adherents to the new treaty widens, pressure will build on recalcitrant states. While major markets like China and Russia may last some time as outliers, principled obstinacy is unlikely to trump new market opportunities indefinitely.

Finally, if it can fairly be said that airline carbon emissions reduction will be as much a work of governance as of economics, then the hard work of shaping an international aeropolitical governance structure has already been done by the landmark 2007 U.S.-EU Air Transport Agreement. The next iteration, an aviation emissions reduction agreement generated from within that structure, can more easily be imagined.

#### IV. DOES THE PROPOSED AGREEMENT UNNECESSARILY FRAGMENT ENFORCEMENT OF CARBON EMISSIONS REDUCTION?

A growing criticism of international law (and of international lawmaking) is that there are too many treaty regimes. The result (it is argued) is a kind of international legal hyperlexis — too much international law and too many international institutions.<sup>152</sup> The *mot du jour* to describe this asserted phenomenon of excess is “fragmentation.” As explained by the U.N. International Law Commission, fragmentation is the consequence of “the differing pursuits and preferences that actors in a pluralistic (global) society have”;<sup>153</sup> new international law emerges as states are compelled to address new problems in diversified contexts, oftentimes at variance with preexisting international legal norms.<sup>154</sup> Fragmentation is especially vexing to so-called “global legalists,” jurists who have “an excessive faith in the efficacy of international law” and who believe in a regime’s “value for its own sake,” independent of international law’s utility in stabilizing foreign relations.<sup>155</sup>

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<sup>150</sup> On Canada’s liberalized aeropolitical ties to the United States and European Union, see Havel & Sanchez, *supra* note 137, at 22–28.

<sup>151</sup> Even with respect to emissions reduction efforts, a liberal trade environment is preferable to a restrictive one. Airlines operating fuel-efficient aircraft are likely to outcompete carriers dependent on outmoded (and environmentally deleterious) equipment, thus compelling those carriers to exit the market. Moreover, by helping ensure that only the financially fit survive, service offerings can be rationalized in accordance with demand rather than government fiat.

<sup>152</sup> Cf. Bayless Manning, *Hyperlexis: Our National Disease*, 71 Nw. U. L. REV. 767, 767 (1976) (“Hyperlexis is America’s national disease — the pathological condition caused by an overactive law-making gland.”).

<sup>153</sup> U.N., Int’l Law Comm’n, *Fragmentation of International Law: Difficulties Arising From the Diversification and Expansion of International Law*, U.N. Doc. A/CN.4/L.682, at 15, ¶ 16 (Apr. 13, 2006) [hereinafter *Fragmentation*].

<sup>154</sup> See *id.* at 14–15, ¶¶ 15–16.

<sup>155</sup> ERIC A. POSNER, *THE PERILS OF GLOBAL LEGALISM* xii (2009); see also *Fragmentation*, *supra* note 153, at 12, ¶ 9 (“Some [international law] commentators have been highly critical

Lawyers without that ideological predisposition, on the other hand, consider fragmentation as “merely a technical problem that has emerged naturally with the increase of international legal activity [and that] may be controlled by the use of technical streamlining and coordination.”<sup>156</sup> While there are good grounds for doubting whether the fragmentation “problem” has a workable solution,<sup>157</sup> we do not believe that a sectoralized aviation emissions reduction agreement should provoke objection from either the “hardcore” global legalist camp or from more moderate observers who acknowledge fragmentation’s inevitability in a globalized world, even as they seek to enhance coherence and uniformity.

In the international trade context, for example, the WTO’s overarching system of rules attempts to uphold uniformity in trade norms and concessions while coexisting with a patchwork of regional trade and integration pacts that undermines the organization’s pretension to universality.<sup>158</sup> In contrast, a global superstructure for emissions reduction is virtually nonexistent. Neither the UNFCCC nor its Kyoto Protocol has yielded robust commitments from states to reduce greenhouse gas emissions,<sup>159</sup> and the recent U.N.-led effort to develop a comprehensive climate change treaty collapsed spectacularly.<sup>160</sup> As such, there is no prevailing climate change regime in the international legal system. That gap can be partially, albeit inadequately, filled by the kind of sectoralized emissions accord proposed in this Article. Moreover, it is unclear what, if any, general principles of international law are undermined by an aviation emissions reduction agreement. As discussed in this Article, such an agreement can be pursued outside ICAO without offending either the Kyoto Protocol or the more general doctrines of the Vienna Convention on the Law of Treaties. And, as we have seen, so long as no state attempts nonconsensually to impose emissions reduction compliance on foreign air carriers, neither the Chicago Convention nor the customary international law principle of airspace sovereignty will be violated.

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of what they see as the erosion of general international law, [the] emergence of conflicting jurisprudence, forum-shopping and the loss of legal security.”); Eyal Benvenisti & George W. Downs, *The Empire’s New Clothes: Political Economy and the Fragmentation of International Law*, 60 STAN. L. REV. 595 (2007).

<sup>156</sup> *Fragmentation*, *supra* note 153, at 12, ¶ 9.

<sup>157</sup> See generally, e.g., Andreas Fischer-Lescano & Gunter Teubner, *Regime-Collisions: The Vain Search for Legal Unity in the Fragmentation of Global Law*, 25 MICH. J. INT’L L. 999 (2003); Martti Koskenniemi & Päivi Leino, *Fragmentation of International Law? Postmodern Anxieties*, 15 LEIDEN J. INT’L L. 553 (2002); see also Benvenisti & Downs, *supra* note 155, at 619–25 (discussing the formidable political challenges to overcoming fragmentation).

<sup>158</sup> See General Agreement on Tariffs and Trade art. XXIV, Apr. 15, 1994, 33 I.L.M. 1125; GATS, *supra* note 128, art. V. For an economic critique of this trend, see JAGDISH BHAGWATI, *TERMITES IN THE TRADING SYSTEM: HOW PREFERENTIAL AGREEMENTS UNDERMINE FREE TRADE* 61–88 (2008).

<sup>159</sup> See POSNER & WEISBACH, *supra* note 104, at 59–64 (discussing the shortcomings of the UNFCCC and the Kyoto Protocol).

<sup>160</sup> See Juliet Eilperin & Anthony Faiola, *Climate Deal Falls Short of Key Goals*, WASH. POST, Dec. 19, 2009, at A1; Joss Garman, *Copenhagen — Historic Failure That Will Live in Infamy*, INDEPENDENT, Dec. 20, 2009; see also POSNER & WEISBACH, *supra* note 104, at 193–97.

Some might counter, however, that a sector-specific approach will cause fragmentation in the future. As more industries and other sources of greenhouse gases are deemed ripe for carbon reduction commitments, states could become subject to overlapping regimes that (for political or other reasons) place incongruent abatement obligations on different sources of emissions. High reduction targets for aviation, for example, may be counterpointed by a less onerous regime for rail emissions, partly on the theory that rail is less climatically toxic. Aviation is in fact demonstrably more fuel-efficient than rail and yet, for political reasons, may face artificially elevated costs in competition with a sector that is, to some extent, substitutable.<sup>161</sup>

A deeper objection to the sector-specific approach, however, is that it may displace a comprehensive climate-change treaty as states expend diplomatic resources on accords that only address the issue fractionally. Nevertheless, a stark either/or scenario seems out of place here. If a comprehensive climate-change treaty truly were feasible, more progress on its completion already would have been made. It is pragmatically and normatively pointless to loiter in the realm of uncertain possibilities. On the other hand, to the extent that an aviation emissions reduction agreement is feasible, it — like any sector-specific agreement — should be pursued in the hope of not only making headway on a response to global warming but also demonstrating how an international consensus can form to combat greenhouse gas emissions. A unique convergence of aviation stakeholder interests makes a powerful normative case for a sectoralized agreement as a first step toward a more ambitious cross-sectoral climate change treaty in the future. And, as a pragmatic matter, differentiated sectoral coverage may be the only means of satisfying International Paretianism and thus of assuring each state that it is better off as a result of the agreement. Further, too much exuberance for avoiding fragmentation could come at the cost of wrecking a more limited, but effective, emissions reduction treaty in its incipiency. While international law's fragmentation will continue to preoccupy and no doubt upset jurists for decades to come, an aviation-specific emissions reduction treaty will not hold the ring in this debate.

#### CONCLUSION

It is impossible to predict the eventual stopping place of the climate change discourse. If current evidence is to be believed, international dialogue will intensify as we draw nearer to the hypothesized “zero hour” of irreparable catastrophe. Stepping back from any prophecies of doom, we

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<sup>161</sup> See generally Randal O'Toole, *High-Speed Rail: The Wrong Road for America*, POL'Y ANALYSIS, Oct. 31, 2008, at 1 (describing plans for installing a cost-heavy high-speed rail system as “promising little or no congestion relief, energy savings, or other environmental benefits.”).

conclude with two statements that we believe encapsulate this Article's contribution to the discourse. First, a plausible aviation emissions reduction agreement can ensure that aviation "does its part" by reducing the sector's emissions to a sustainable level without sacrificing its economic viability. Second, the convergence of stakeholder interests within international aviation will further ensure that the agreement can serve as a lead sector for future (and wider) international collaboration on climate change. And although the agreement framework proposed here is incremental rather than "big bang," the principle of International Paretianism indicates that the former is more feasible than the latter. Under the canopy of a sectoral treaty among like-minded states, international aviation can responsibly reduce its environmental impact while remaining a force for dynamic economic growth in the coming century.

