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EGYPT, ETHIOPIA, AND THE NILE: THE ECONOMICS OF INTERNATIONAL WATER LAW

Daniel Abebe

THE LAW SCHOOL
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Egypt, Ethiopia, and the Nile: The Economics of International Water Law

Daniel Abebe*

Abstract

As part of a Symposium on the book The Economic Foundations of International Law, this Article briefly compares and contrasts two distinct analytical approaches to international law—doctrinal versus economic—in the context of Egypt’s and Ethiopia’s dispute over the right to exploit the Nile River’s water resources. The Article argues that the traditional doctrinal approach, one based solely on an examination of international water law, treaties, and customary international law is unlikely to result in a legal conclusion that either state is likely to respect because such an approach fails to consider the incentives, material capabilities, and national interests of Egypt and Ethiopia. However, the Article argues that an economics approach focusing on state preferences and incentives for compliance with international law in a world without a central enforcement mechanism will better illuminate the obstacles that Egypt and Ethiopia face and the likelihood of legal resolution of the conflict. After examining the interests and political constraints on both states, the Article concludes with a simple application of transaction costs economics, focusing on property rights and liability rules, to understand how Egypt and Ethiopia might respond to different legal arrangements designed to resolve the conflict.

* Professor of Law and Walter Mander Teaching Scholar, University of Chicago Law School. I am grateful to the participants at the Conference on International Law and Economics at the University of Chicago Law School and the Loyola University International Law Colloquium at Loyola University Chicago School of Law for helpful comments and suggestions. I also owe many thanks to Val Washington and Kate Long for their fine research assistance, and to the *Chicago Journal of International Law* for their excellent editing. Finally, I would like to acknowledge the support of the George J. Phocas Fund and the Elmer M. Heifetz Fund.

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I. INTRODUCTION

Ranging from traditional legal doctrinal analysis to social science research frameworks common to political science and economics, the methodological tools available to scholars, commentators, and students of international law have dramatically expanded. Research questions about the efficacy of international law, the operation of international institutions, the preferences of states, and the motivations for state behavior—questions often foreclosed by a narrow focus on international law doctrine—are now being increasingly asked and answered. The language of international law is not only one of treaties and custom, but also of incentives and rational self-interest.

In *The Economic Foundations of International Law*, Eric Posner and Alan Sykes contribute to the evolving study of international law by providing a conceptual framework to theorize and predict how international law will operate in the future.¹ Beginning with the assumption that states are rational, self-interested actors, pursuing their policy preferences in an international system without a central enforcement mechanism, Posner and Sykes demonstrate the utility of an economic approach in various substantive areas of international law. They describe the conditions under which international cooperation is possible and explain the roles of reputation, bribes, sanctions, and mutual defection in the enforcement of international law. For them, the economics approach is a fruitful alternative to the more traditional, doctrinal approach for analyzing international law.

This Article builds on their insights and evaluates the merits of an economic approach in the area of international water law. It compares the economic approach with the traditional doctrinal approach to international law by analyzing both in the context of the conflict between Ethiopia, Egypt, and nine other riparian states over the allocation of the Nile's water resources. The Article argues that the traditional doctrinal approach, while useful in framing the legal issues for the parties, is of limited value without an understanding of when, how, and under what conditions states will comply with or violate international law. An economics approach, however, moves beyond international law doctrine and exposes the underlying preferences of states and the obstacles to international dispute resolution. It also opens the door to think creatively about mechanisms to incentivize states to cooperate and achieve mutually beneficial outcomes. Applied to Egypt, Ethiopia, and the Nile, the economics approach shows that a combination of incentives and the threat of retaliation—not the substantive international law—shapes state decision-making, and it potentially

¹ See, generally, Eric A. Posner & Alan O. Sykes, *THE ECONOMIC FOUNDATIONS OF INTERNATIONAL LAW* (2013).

offers a useful framework to better understand and resolve international water law disputes.

Section I of the Article briefly describes the importance of the Nile and provides background on the conflict among the riparian states, focusing on Egypt and Ethiopia. Section II describes the substantive international law governing international watercourses, presents Egypt and Ethiopia's conflicting legal positions regarding the exploitation of the Nile's water resources, and critiques the traditional doctrinal approach to resolving the conflict. Section III discusses the economics approach and focuses on how the preferences of the actors, the prospects of retaliation, and the lack of a central enforcement mechanism shape state incentives to comply with international law.

II. THE NILE, EGYPT, AND ETHIOPIA

The Nile is the world's longest river, running some 4250 miles through north and northeastern Africa, and ending in a delta just south of the Mediterranean Sea.² The Nile has two main tributaries: the White Nile, which begins in and around Lake Victoria and borders Tanzania, Uganda, and Kenya; and the Blue Nile, which begins in Lake Tana in Ethiopia.³ The White and Blue Nile flow north and meet around Khartoum, Sudan, creating the Nile, which eventually flows into Egypt.⁴ Given the length of the Nile and its tributaries, the Nile is an international watercourse⁵ creating potential water resources—and opportunities for serious conflict over the division of those resources—for Egypt and Sudan downstream, South Sudan, Eritrea, Rwanda, Burundi, and the Democratic Republic of Congo midstream, and Tanzania, Uganda, Kenya, and Ethiopia upstream.

Unsurprisingly, the Nile is most clearly associated with Egypt. From the time of Ancient Egypt to the present, the Nile has been prominent in Egyptian history and culture, and it heavily contributes to Egyptian identity.⁶ However,

² See Christina M. Carroll, *Past and Future Legal Framework of the Nile River Basin*, 12 GEO. INT'L ENVTL. L. REV. 269, 272–73 (1999).

³ See Jeffrey D. Azarva, *Conflict on the Nile: International Watercourse Law and the Elusive Effort to Create a Transboundary Water Regime in the Nile Basin*, 25 TEMP. INT'L & COMP. L.J. 457, 461 (2011).

⁴ *Id.*

⁵ In simple terms, an international watercourse is a river and its system of tributaries located in more than one state. Section III describes the international law regulating international watercourses.

⁶ See Katrina Manson & Borzou Daragahi, *Water: Battle of the Nile*, FINANCIAL TIMES (June 19, 2013), <http://www.ft.com/intl/cms/s/0/bc79c9ac-d364-11e2-95d4-00144feab7de.html#axzz2wEqd5Wy6> (“Officials in Egypt, which relies on the Nile for power generation, irrigation, recreation and even its national identity, say repeatedly that Ethiopia may not take ‘a single drop’ of Egypt’s share of the river.”). For an opinion piece on the cultural and identity issues

focusing on the prominence of the Nile in Egyptian society only serves to mask the Nile's role in shaping the day-to-day life prospects of the Egyptian people. Consider the following data about the Nile's importance to Egypt. The Nile provides 96 percent of Egypt's renewable freshwater and the Nile Valley hosts 98 percent of Egypt's 85 million people.⁷ Approximately 95 percent of Egypt's population lives within twelve miles of the Nile,⁸ mainly because Egypt receives the least rainfall of any state in Africa.⁹ The Nile also provides nearly 86 percent of Egypt's freshwater for agriculture¹⁰—a major component of the Egyptian economy—along with water for industrial production and sewage treatment. And the Nile's importance to Egypt is only increasing: over the twentieth century, the Nile's water volume has been declining while demands for access to the Nile's water resources from upper riparian states have been increasing.¹¹ This tension only serves to highlight the continued importance of the Nile's water resources to Egypt, as it is “not only . . . an economic lifeline but is also considered a security issue of the highest order.”¹²

Ethiopia, however, has a very different relationship with the Nile. Though the Blue Nile starts in the Ethiopian Highlands in Lake Tana, Ethiopia has not been able to exploit the Blue Nile's water resources for the myriad economic, political, and geostrategic reasons discussed in Section IV. Ethiopia, through the Blue Nile and a minor tributary called the Atbara River, provides over 85 percent of the water that eventually flows into the Nile;¹³ in other words, *it provides the vast majority of the Nile water volume on which Egypt depends*. But, in stark contrast to Egypt, according to some estimates Ethiopia only uses “[under 1 percent] of the water resources of the Nile basin even though the Nile constitutes approximately 68% of [Ethiopia's] available water resources.”¹⁴ For

complicating Egypt and Ethiopia's dispute over the Nile, see Teshome Abebe, *Of Egypt, Gratuitous Contempt, and National Identity*, AIGAFORUM (June 12, 2013), <http://aigaforum.com/articles/of-egypt.php>.

⁷ See Abadir M. Ibrahim, *The Nile Basin Cooperative Framework Agreement: The Beginning of the End of Egyptian Hydro-Political Hegemony*, 18 MO. ENVTL. L. & POL'Y REV. 282, 287, n.13 (2011).

⁸ Kristin Wiebe, *The Nile River: Potential for Conflict and Cooperation in the Face of Water Degradation*, 41 NAT. RESOURCES J. 731, 732 (2001).

⁹ See Azarva, *supra* note 3, at 461–62.

¹⁰ See Wiebe, *supra* note 8, at 734.

¹¹ See Carroll, *supra* note 2, at 275 (“New pressures are also straining this water resource. Rising demand for water, due to development and population growth, has led to rising water costs, diminishing supplies, and water pollution.”).

¹² See Ibrahim, *supra* note 7, at 288.

¹³ *Id.* at 285 (“The source of the Blue Nile, which constitutes 86% of the volume of the Nile is Ethiopia . . .”). See also Carroll, *supra* note 2, at 275 (“Ethiopia contributes eighty-six percent of Nile flow, whereas Egypt contributes nothing.”).

¹⁴ Ibrahim, *supra* note 7, at 288.

Ethiopia, a country plagued by famine and drought with a population of over 96 million people,¹⁵ even a small increase in its use of the Blue Nile's water resources would have a substantial effect on the life prospects of Ethiopians.

With that in mind, Ethiopia initiated the \$4.2 billion Grand Ethiopian Renaissance Dam Project ("the Dam Project") in 2011 with the goal of creating one of the world's largest hydroelectric power plants.¹⁶ Ethiopia has partially funded the Dam Project to the tune of \$1.8 billion and the Dam Project is approximately 20 percent complete.¹⁷ Ethiopia has not, however, secured funding for the remaining money necessary to complete the Dam Project, though it has started the process of diverting some of the Blue Nile toward the Dam Project reservoir.¹⁸ Egypt, heavily dependent on the Nile, is extremely concerned¹⁹ that the Dam Project might result in diverting waters from the Blue Nile that would ordinarily flow into the Nile and that the reservoir associated with the Dam Project would lead to evaporation of some of the Blue Nile's water volume. In both instances, Egypt fears a serious reduction in the Nile's overall water volume once it reaches Egypt.²⁰

Realizing the potential for conflict regarding the Nile, Egypt, Ethiopia, and the other riparian states developed the Nile Basin Initiative (the "NBI") in 1999 as a forum to rethink the allocation of the Nile's water resources.²¹ More

¹⁵ *The World Factbook: Ethiopia, 2013-14*, Washington, DC: Central Intelligence Agency, <https://www.cia.gov/library/publications/the-world-factbook/geos/et.html> (last updated Apr. 8, 2014).

¹⁶ *Ethiopia: Egypt Attack Proposals 'Day Dreaming'*, YA LIBNAN (June 5, 2013), <http://www.yalibnan.com/2013/06/05/ethiopia-egypt-attack-proposals-day-dreaming/>.

¹⁷ *Id.*

¹⁸ *Id.* (stating, as of June 5, 2013, that "Ethiopia a week ago started diverting the flow of the Nile toward the \$4.2 billion hydroelectric plant dubbed the Grand Ethiopian Renaissance Dam").

¹⁹ See Dereje Zeleke Mekonnen, *The Nile Basin Cooperative Framework Agreement Negotiations and the Adoption of a 'Water Security' Paradigm: Flight into Obscurity or a Logical Cul-de-sac?*, 21 EUR. J. INT'L L. 421, 431 (2010) (noting "[t]he near absolute dependence of Egypt on the Nile for its survival" and the perception among Egyptians "of the Nile waters question as a matter of national security, and one posing an existential threat to the very survival of Egypt").

²⁰ Ahmed Feteha & William Davison, *Egypt and Ethiopia Disagree on Probe of Nile Dam Impact*, BLOOMBERG NEWS (Nov. 6, 2013), <http://www.bloomberg.com/news/2013-11-06/egypt-and-ethiopia-disagree-on-probe-of-nile-dam-impact.html> (stating that the Dam Project "has raised concern in Cairo that it will reduce the flow of the Nile, which provides almost all of Egypt's water").

²¹ *About the NBI*, NILE BASIN INITIATIVE, <http://nilebasin.org/index.php/about-us/nile-basin-initiative> (last visited Feb. 7, 2014). See also Mekonnen, *supra* note 19, at 425 (explaining that the NBI "promised to be a harbinger of a new era manifesting a remarkable shift in the tone and substance of state-to-state relationships along the Nile") (internal citations omitted). NBI members include Egypt, Ethiopia, Burundi, Democratic Republic of Congo, Sudan, South Sudan (as of 2011), Rwanda, Tanzania, Uganda, and Kenya, with Eritrea holding "observer status." See *Accord or Discord on the Nile?—Part I*, INTERNATIONAL WATER LAW PROJECT BLOG (July 26, 2010),

important, in 2010, the NBI produced a Cooperative Framework Agreement (the “CFA”)—rejected by Egypt and Sudan—in which six of the upper riparian states (Ethiopia, Tanzania, Kenya, Uganda, Rwanda, and Burundi) agreed to utilize more of the Nile’s water resources.²² But Egypt and Sudan’s refusal to join the CFA, combined with the fact that the CFA does not specify the amount of water each riparian state is entitled to use,²³ leaves Egypt and Ethiopia back where they started—in conflict over their respective shares of the Nile’s water resources.

Since then, Ethiopia has moved forward with the Dam Project and Egypt has become increasingly concerned about the impact on the Nile.²⁴ Though Ethiopia is still some distance from completing the Dam Project, Egyptian leaders have started to consider and threaten severe consequences for Ethiopia. In 2010, Egypt and Sudan plotted to take military action against Ethiopia to protect their interests in the Nile. That year, WikiLeaks published emails acquired from Strategic Forecasting, Inc., (STRATFOR) in which a high-level Egyptian official close to then-President Mubarak wrote that:

*The only country that is not cooperating is Ethiopia. We are continuing [. . .] the diplomatic approach. Yes, we are discussing military cooperation with Sudan. . . . If it comes to a crisis, we will send a jet to bomb the dam and come back in one day, simple as that. Or we can send our special forces in to block/sabotage the dam. . . . Look back to an operation Egypt did in the mid-late 1970s, I think 1976, when Ethiopia was trying to build a large dam. We blew up the equipment while it was traveling by sea to Ethiopia.*²⁵

As recently as June 2013, former President Morsi and his aides, unaware that their conversation was televised, discussed the possibility of sabotaging the Dam Project and aiding anti-government rebels in Ethiopia.²⁶ Finally, in early November 2013, Egypt and Ethiopia again disagreed—in diplomatic language—on the merits of a report regarding the potential regional impact of the Dam

<http://www.internationalwaterlaw.org/blog/2010/07/26/accord-or-discord-on-the-nile-%E2%80%93-part-i/>.

²² See Walter Menya, *Kenya signs Nile Basin pact*, DAILY NATION (May 19, 2010), <http://www.nation.co.ke/News/Kenya+signs+Nile+Basin+pact/-/1056/921332/-/t6xauzcz/-/index.html>.

See Ibrahim, *supra* note 7, for a general discussion of the NBI and the CFA.

²³ See Mekonnen, *supra* note 19, at 430 (discussing the CFA’s non-legal concept of “water security” and explaining that the term would practically “mean anything a riparian country wanted it to”).

²⁴ See, for example, Feteha & Davison, *supra* note 20 (discussing Cairo’s concerns with the Dam Project).

²⁵ Michael Kelley & Robert Johnson, *STRATFOR: Egypt Is Prepared to Bomb All Of Ethiopia’s Nile Dams*, BUSINESS INSIDER (Oct. 13, 2012), <http://www.businessinsider.com/hacked-stratfor-emails-egypt-could-take-military-action-to-protect-its-stake-in-the-nile-2012-10> (emphasis in original).

²⁶ See ‘Day Dreaming,’ *supra* note 16.

Project.²⁷ While it is clear that Egypt and Ethiopia have significant disagreements over the Nile, they have been willing to entertain, at least in theory, the possibility of international cooperation. Since resolution of the conflict over the Nile implicates existing international law, I turn now to the legal materials governing the use of international watercourses.

III. THE LAW OF INTERNATIONAL WATERCOURSES

A. The Convention and Customary International Law

Before examining Egypt's and Ethiopia's competing legal positions, it is instructive to turn first to the extant substantive international law rules. The key rules governing the use of the Nile are largely derived from the Convention on the Law of Non-Navigational Uses of International Watercourses²⁸ ("the Convention") concluded by the United Nations in 1997. Thirty-four states have ratified the Convention, including Israel, Germany, France, Nigeria and South Africa, among others, just short of the required thirty-five states necessary for the Convention to enter into force.²⁹ Although Egypt and Ethiopia are not parties to it, the Convention is generally considered to be the most accurate representation of customary international law regarding international watercourses.³⁰

The Convention rests on the core principles of equitable and reasonable utilization and participation of the riparian states exploiting a watercourse, and an obligation not to cause significant harm to other states sharing the watercourse. These principles are reflected in Articles 5 and 7 of the Convention. Article 5 requires states to "participate in the use, development and protection of an international watercourse in an equitable and reasonable manner,"³¹ and instructs them to use and develop the international watercourse "with a view to attaining optimal and sustainable utilization thereof and benefits

²⁷ See Feteha & Davison, *supra* note 20.

²⁸ Convention on the Law of the Non-Navigational Uses of International Watercourses, May 21, 1997, 36 I.L.M. 700 [hereinafter the Convention]. See Aaron Schwabach *The United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses, Customary International Law and the Interests of Developing Upper Riparians*, 33 TEX. INT'L L.J. 257, 269 (1998), for a discussion of the Convention.

²⁹ XXVII.12. *Convention on the Law of the Non-Navigational Uses of International Watercourses*, United Nations Treaty Database, https://treaties.un.org/Pages/ViewDetails.aspx?src=IND&mtdsg_no=XXVII-12&chapter=27&lang=en (May 21, 1997).

³⁰ See Azarva, *supra* note 3, at 476 ("The Watercourse Convention is the best articulation of customary international law today, but it is far from irreproachable.").

³¹ The Convention, *supra* note 28, art. 5(2).

therefrom.”³² Article 7 imposes an obligation on states to “take all appropriate measures to prevent the causing of significant harm”³³ to the other states sharing an international watercourse. This principle reflects the maxim *sic utere tuo ut alienum non laedas*³⁴ and suggests that upstream riparian states can develop their water resources, as long as such development does not “significantly harm” downstream riparian states. Articles 5 and 7 of the Convention, read together, appear to encourage states to minimize significant harm from their use of the international watercourse and to reach equitable and reasonable solutions to watercourse conflicts.

B. Egypt’s Claim under International Law

Egypt would likely offer several justifications under international law to support its claim that it has a near exclusive right to use the Nile and its resources. Egypt’s likely claim applies to all of the Nile’s riparian states but, for purposes of this Article, I will generally focus on its claim as it pertains to Ethiopia. First, Egypt would argue that a 1902 treaty between Great Britain and Ethiopia,³⁵ in which Ethiopia purports to disclaim any right to the Nile and agrees not to take any measures that would reduce the availability of the Nile’s water resources to Egypt, precludes Ethiopia from building the Dam Project. Since Egypt was a British Protectorate at the time of the treaty, Egypt essentially would argue that it is a third-party beneficiary of the treaty.

Moreover, Egypt could rely on Article 7 of the Convention, which imposes a duty on states to take measures to prevent causing significant harms to other states sharing an international watercourse, to argue that it has a right to limit upper riparian development of the Nile’s water resources. The claim would be that the Dam Project will cause significant harm to Egypt by negatively affecting the Nile’s water volume and reducing Egypt’s water resources. From Egypt’s side, the 1902 treaty, in conjunction with the Convention and customary international law, prohibits Ethiopia from exploiting the Nile.

Egypt also likely subscribes to the appropriation doctrine of allocating water rights, linked to a theory of prior or historical use. Although there are different versions of the appropriation doctrine, it basically stands for the proposition that the first user of some amount of water for a beneficial purpose

³² The Convention, *supra* note 28, art. 5(1). See Azarva, *supra* note 3, at 477–78, for a discussion of the factors relevant to determining equitable and reasonable use outlined in Article 6 of the Convention.

³³ The Convention, *supra* note 28, art. 7(1).

³⁴ See Azarva, *supra* note 3, at 482.

³⁵ The Frontiers Between The Soudan, Ethiopia, and Eritrea (May 15, 1902), Eth.-It.-U.K., art. III, UK Treaties Online, available at <http://treaties.fco.gov.uk/docs/pdf/1902/TS0016.pdf>.

has an exclusive property right to the amount of water utilized as against subsequent users. Such users can only use the remaining amount of water to the extent that it does not interfere with the right of the first user. In this context, Egypt would argue that potential subsequent users of the Nile—for our purposes, Ethiopia—can only use the Nile to the extent that such use doesn't interfere with Egypt's prior use. And, since Egypt claims to use all or nearly all of the Nile's water resources, almost any use of the Nile's water resources by Ethiopia or any other upper riparian state would interfere with Egypt's rights as outlined under this doctrine.

Finally, Egypt has argued that 1929 and 1959 treaties between Egypt and Sudan purporting to govern the use of the Nile apply to the nine other riparian states, even though these states were not formal parties to the agreements.³⁶ In 1929, nominally independent Egypt and British protectorate Anglo-Egyptian Sudan, both under British supervision, jointly agreed to divide the Nile's water resources.³⁷ In the 1929 treaty, Egypt "recognized Sudan's right to utilize an increased quantity of the Nile waters—an increase in 'quantity as does not infringe Egypt's natural and historical rights in the waters of the Nile and its requirements of agricultural expansion.'"³⁸ After Sudan's independence, Egypt and Sudan revisited the terms of the 1929 treaty in the 1959 Nile Waters Agreement,³⁹ which modified the allocation of water between the two countries, excluded the other riparian states, and explicitly "adopt[ed] a united view" on any attempts by other states to make claims on the Nile's water resources.⁴⁰ Though the legal mechanism isn't completely clear, Egypt has at various times

³⁶ See Valerie Knobelsdorf, *The Nile Waters Agreements: Imposition and Impacts of a Transboundary Legal System*, 44 COLUM. J. TRANSNAT'L L. 622, 623–24 (2006) ("The core Nile Waters Agreements (signed between Egypt and Britain in 1929, and Egypt and Sudan in 1959) allocate a vast majority of the Nile's flow to Egypt, and purport to bind all upstream riparian nations to its allotments and obligations.") (internal citations omitted).

³⁷ See Exchange of Notes Between His Majesty's Government in the United Kingdom and the Egyptian Government in Regard to the Use of the Waters of the River Nile for Irrigation Purposes, May 7, 1929, available at <http://ocid.nacse.org/tfdd/tfdddocs/92ENG.pdf>.

³⁸ Mekonnen, *supra* note 19, at 432 (citing Exchange of Notes, *supra* note 37). See also Wiebe, *supra* note 8, at 746 (noting the countries' conclusion in the 1929 treaty "that construction on the river, its tributaries, or its source that would possibly obstruct the Nile's flow and affect Egypt's own exploitation of the water would be impermissible").

³⁹ Agreement for the Full Utilization of the Nile Waters, Sudan-Egypt (Nov. 8, 1959), 453 U.N.T.S. 51, available at <http://ocid.nacse.org/tfdd/tfdddocs/230ENG.pdf>.

⁴⁰ Wiebe, *supra* note 8, at 746. See also Mekonnen, *supra* note 19, at 435 (explaining that the 1959 treaty's objective of full control and exclusive utilization of the Nile by Egypt and Sudan has been rightly described as "patently anomalous," because of "the fact that while it is purely bilateral, it seeks to apportion the entire flow of the Nile to Egypt and Sudan, excluding the interests of any other riparian It is indeed an utterly iniquitous agreement contingent upon zero water use by upstream riparians") (internal citations omitted).

argued that these treaties serve to guarantee Egypt a right to the Nile, while precluding any of the upper riparian states from accessing the Nile's water resources.⁴¹

C. Ethiopia's Claim under International Law

Unsurprisingly, Ethiopia would likely reject the validity of the 1902 treaty with Great Britain and argue that Article 5 of the Convention and the Harmon Doctrine⁴² support its decision to utilize the Nile's water resources and develop the Dam Project. Ethiopia would likely argue that the 1902 treaty is not controlling because Ethiopia did not formally ratify it and, even if it were ratified the relevant treaty article concerning the use of the Nile has different and competing meanings in the English and Amharic language versions of the treaty.⁴³ At bottom, Ethiopia's core claim would be that, the 1902 treaty did not include language disclaiming Ethiopia's right to exploit the Nile's water resources.

Ethiopia would also claim the unconditional and exclusive right to develop and utilize the Nile's water resources within its territory.⁴⁴ Relying on the Harmon Doctrine—the idea that jurisdiction over natural resources in a sovereign's territory is exclusive and absolute—Ethiopia would claim it has the right to unimpeded exploitation of the Nile's water resources within its territorial jurisdiction. Those resources would include all of the Blue Nile and the Atbara River. The Dam Project is designed to utilize them.

⁴¹ See Knobelsdorf, *supra* note 36, at 627–28:

Aware of its vulnerable position as the furthest downstream nation along the river, Egypt has continued to govern its use of Nile waters with the strategy of protecting and enhancing its potential future claims. Since the enactment of the 1929 Agreements, Egypt has adhered to a nationalist theory of water rights, according to which all important works on the Nile should be constructed in Egyptian territory in order to avoid the danger of any works built outside of the country being used as a political weapon against Egypt.

(internal citations omitted).

⁴² See Azarva, *supra* note 3, at 480.

⁴³ For a comprehensive discussion of Ethiopia's and Great Britain's claims regarding the validity of the 1902 treaty and their competing interpretations of Article III, *see, generally*, Tadesse Kassa Woldetsadik, INTERNATIONAL WATERCOURSES LAW IN THE NILE RIVER BASIN: THREE STATES AT A CROSSROADS (2013).

⁴⁴ "Historically, [Ethiopia] has adhered to the principle of absolute territorial sovereignty, which provides that a riparian state may engage in the untrammelled use of that part of an international watercourse within its territory, even to the detriment of downstream parties." *Id.* at 480 (internal citations omitted). *See also* Knobelsdorf, *supra* note 36, at 636 (noting that Ethiopia has reserved "its natural and territorial claims to the river for potential large-scale development in the future") (internal citations omitted).

If that fails, Ethiopia would also likely argue that support for this position is found in Article 5 of the Convention, which permits riparian states sharing an international watercourse to utilize the watercourse in an equitable and reasonable manner. Through Article 5, Ethiopia could argue that the Convention implicitly rejects an appropriation approach to international watercourses, one that would have assigned the right to exploit the international watercourse to the first state to utilize it, in favor of a riparian approach that permits each riparian state to have equal use of the international watercourse. Building the Dam Project to exploit water resources within its territory, according to Ethiopia, would be consistent with the language and spirit of Article 5. Finally, Ethiopia would surely reject any claim that treaties between Egypt and Sudan, to which Ethiopia was not a party, govern Ethiopia's current and future use of the Nile's water resources.⁴⁵

D. The Traditional Doctrinal Approach

A traditional approach would start with all of the relevant legal materials and engage in a doctrinal analysis of the merits of the Egyptian and Ethiopian claims regarding the Nile. Such an approach to resolving this conflict might focus on the Convention; the 1902 treaty between Great Britain and Ethiopia; the 1929 and 1959 treaties between Egypt and Sudan; the appropriation doctrine; the Harmon Doctrine; the content of customary international law; and international water law jurisprudence from relevant courts. For example, such an approach would examine the language of the 1902 treaty; the legal consequence of Great Britain and Ethiopia's non-ratification; the translation of the Ethiopian and British versions; and the relevance of the Vienna Convention on Succession of States in Respect of Treaties. It would examine the 1929 treaty between Egypt and Sudan—drafted and agreed while both states were under British administration—to see if its terms also governed Tanzania, Uganda, and Kenya as successor states to colonial Great Britain under the theory of universal succession. Such an approach would consider claims of *rebus sic stansibus*—changed conditions—of the former British colonies and protectorates, and examine whether the clean slate doctrine (or the Nyerere Doctrine), which holds

⁴⁵ See Knobelsdorf, *supra* note 36, at 630:

Even before the enactment of the 1959 Agreement, Ethiopia was also one of the first upstream nations to express doubts about the binding force of such bilateral treaties on upper riparians. Beginning in 1956, Ethiopian authorities made statements that indicated that the nation no longer considered the previous Nile Waters Agreements as binding on itself or on other independent basin nations.

(internal citations omitted).

that successor states do not necessarily inherit the obligations arising out of treaties made by their predecessors, applies in this context.⁴⁶

The approach would next determine whether and in what way the Convention reflects customary international law binding on Ethiopia and Egypt. It would carefully interpret the relevant legal documents to properly construe the meaning of terms like “equitable and reasonable manner” and “significant harm” in Articles 5 and 7 of the Convention. It would look to the litigation surrounding the Gabčíkovo-Nagymaros Project on the Danube River at the International Court of Justice.⁴⁷ Finally, a traditional doctrinal international law approach would consider whether the appropriation and Harmon doctrines actually reflect modern thinking about how upstream and downstream states sharing an international watercourse should use and develop it.

After weighing all of these legal materials, the doctrinal analysis would presumably produce some legal conclusion: perhaps Egypt has the better legal argument and should be permitted to limit the utilization of the Nile by upstream riparian states like Ethiopia, or perhaps Ethiopia can exploit its water resources to the extent that it does not cause significant harm to downstream states like Sudan and Egypt. Of course, it could be argued that the doctrinal analysis would be simplified if the focus were on only one document, like the Convention. But even if the Convention were the sole binding international legal document available to resolve the conflict between Egypt and Ethiopia, the Convention’s two core articles—Articles 5 and 7—leave sufficient ambiguity to permit both states to view the Convention as supportive of their respective legal positions. Simply stated, there is no binding principle of international law that compels a particular result for the parties.⁴⁸

But this traditional approach, while arriving at a legal conclusion on the merits of the competing Egyptian and Ethiopian claims, might not get us very far. In a world without a central enforcement mechanism, it is not clear that Ethiopia and Egypt would respect the determination of an international court or international arbitral body on an issue inextricably linked to their core economic

⁴⁶ The Nyerere Doctrine, named after Tanzania’s first President Julius Nyerere, “holds that successor states are not bound by the treaty obligations of the predecessors, with a controversial carve-out exception for territorial, real, dispositive, or localized treaties. Azarva, *supra* note 3, at 471 (internal quotations omitted).

⁴⁷ See *Gabčíkovo-Nagymaros Project (Hung. v. Slov.)*, 1997 I.C.J. 7 (Sept. 25), available at http://www.worldcourts.com/icj/eng/decisions/1997.09.25_gabchkovo.htm.

⁴⁸ Azarva, *supra* note 3, at 492–93:

Herein lies the larger problem with ambiguity in legal formulae: it is a double-edged sword. The same ambiguity that can help grease the wheels of negotiation can also serve to reinforce parties’ divergent bargaining positions, increasing the chance of conflict when one side’s performance fails to comport with the other party’s understanding of that side’s legal obligations.

and national security interests. And, if we lack a framework for thinking about state preferences and the motivations of states for complying with or ignoring international law, then we won't be able to determine the conditions under which international law will be respected or enforced. Put more concretely, why would Ethiopia and Egypt respect international law on the determination of their rights regarding the utilization and development of the Nile's water resources?

IV. AN ECONOMICS APPROACH TO THE LAW OF INTERNATIONAL WATERCOURSES

A. Economics and International Law

Posner and Sykes provide an economic framework that helps us better understand the nature of the conflict between Ethiopia and Egypt and the legal and non-legal obstacles to achieving an outcome that is satisfactory to both sides. Beginning with a simple set of assumptions,⁴⁹ we can start to see the challenges that a more traditional doctrinal approach to international law faces when attempting to resolve disputes. Let us begin by assuming that Ethiopia and Egypt are rational states pursuing their respective interests in a world without a central enforcement mechanism. Both Ethiopia and Egypt understand that there isn't a world government or global policeman to enforce international law—perhaps creating opportunities to ignore international legal rules—but they also recognize that failure to comply with international law might result in retaliation, reputational costs, or international sanctions from other states. Though both states have different preferences, each wants to benefit from international cooperation while ideally reducing international externalities.

Here, we know that Ethiopia and Egypt have competing preferences regarding the use of the Nile and different interpretations of the relevant international law governing international watercourses. Since Egypt views itself as the first user of the Nile and has exploited the Nile's water resources more than any other riparian state, Egypt has a paramount interest in preserving the status quo.⁵⁰ Put bluntly, the Nile is essential to Egypt's existence. Ethiopia, on the other hand, provides over 85 percent of the Nile's volume but utilizes less

⁴⁹ For illustrative reasons and space considerations, the economics approach discussed here is necessarily simplified.

⁵⁰ See Mekonnen, *supra* note 19, at 438 (noting “the entrenched positions of Sudan and Egypt which are determined to perpetuate the *status quo* and reject any ‘modification of their shares of the river per the 1929 and 1959 treaties’”) (emphasis in original) (citing *Ethiopia says all Nile states agreed on NBI, but not Sudan and Egypt*, SUDAN TRIBUNE (Aug. 7, 2009), <http://sudantribune.com/spip.php?article32053>).

than 1 percent of the Blue Nile's water resources.⁵¹ If Ethiopia succeeds in its claim to the Blue Nile, Ethiopia stands to gain enormously from exercising its exclusive and absolute right to exploit natural resources within its territory. Since the Blue Nile is underutilized and represents some 68 percent of Ethiopia's water supply, the Dam Project could use the water to improve dramatically Ethiopia's agricultural conditions and its potential to generate hydroelectric power. This appears to create a puzzle: if the benefits of the Dam Project are clear, Ethiopia has confidence in its legal position, and we live in a world without a central enforcement mechanism, why doesn't Ethiopia simply build the dam and ignore Egypt's claims? After all, Ethiopia is not only the source of the vast majority of the Nile's water volume but also an upstream riparian state; it is in an ideal position to exploit the Nile.

A key part of the economics framework helps to answer this question. Beneficial international cooperation and the reduction of international externalities will only happen if there are costs for violating international law. In other words, a state trying to decide whether to violate international law must consider the potential for other states to respond or retaliate. It must consider the costs of defection. Under certain conditions, the prospect of retaliation from other states (and the costs that they could impose) might disincentivize a state from violating international law. Although this is a simplification, we can imagine the retaliation coming in two forms. First, retaliation might take place within an international institution. For example, states might not support the initiatives of the violator state or might refuse to work with that state in multilateral settings. Second, the retaliation might occur in the realm of politics, rather than through international law or international institutions. A group of states or even a single state might take diplomatic steps to signal disapproval, initiate unilateral or multilateral sanctions against the violator state, or even threaten war. The threat of retaliation, under certain conditions, frames the incentives of states and encourages states to comply with international law.

How does the prospect of retaliation shape Ethiopia's decision to build and continue the development of the Dam Project? At first glance, one might think that Ethiopia, as the upper riparian state without a common border with Egypt, is well placed to ignore Egypt's claims to all of the Nile's water resources. Ethiopia has the support of the other riparian states and the Dam Project is squarely within Ethiopia's borders. But a closer evaluation demonstrates that the threat of retaliation from Egypt is a serious deterrent to Ethiopia's project.

As a preliminary issue, it is only recently that Ethiopia has had the necessary governmental stability and economic resources to even consider

⁵¹ See Ibrahim, *supra* note 7, at 286–88.

building a dam on the Nile.⁵² Since World War II, Ethiopia has had a monarchy under Haile Selassie (until 1975); a Communist government under Mengistu Hailemariam (until 1991); a dictatorship under the late Meles Zenawi (until 2012); and a new dictatorship under Hailemariam Desalegn (2012 to the present).⁵³ During most of this time, Ethiopia unsuccessfully attempted to quell a secessionist movement in what is now Eritrea, culminating in Eritrean independence in 1993, and resulting in a subsequent war between Ethiopia and Eritrea in the late 1990s and early 2000s.⁵⁴ This governmental instability, combined with massive drought in the mid-to-late 1980s, made a serious project to dam the Nile economically and politically infeasible.

However, Ethiopia's clear inability to commence a dam project in the past did not stop Egypt from announcing its intention to retaliate in response to any attempts by Ethiopia to dam the Nile. As early as 1979, Egyptian President Anwar Sadat declared that "[t]he only matter that could take Egypt to war again is water."⁵⁵ As noted above, Egyptian Presidents Mubarak and Morsi also characterized any potential dam as a vital threat to Egyptian national security, and, given the vast US economic and military support that Egypt has received over the years, Egypt has the military capacity and the political will to make true on its threats.⁵⁶ Even beyond the potential for retaliation, Egypt's geopolitical importance to the US has made it possible for Egypt to block Ethiopian initiatives to secure World Bank and private funding for a dam. Put concretely, it has been Egypt's economic strength, military resources, and geopolitical

⁵² See Knobelsdorf, *supra* note 36, at 629 ("Ethiopia in particular has expressed its dissatisfaction with the Egypt-Sudan water agreements, but has generally lacked the ability to actively reserve any significant portions of the Nile water for domestic irrigation purposes.") (internal citations omitted).

⁵³ See *The World Factbook: Ethiopia*, *supra* note 15 ("In 1974, a military junta, the Derg, deposed emperor Haile Selassie (who had ruled since 1930) and established a socialist state. Torn by bloody coups, uprisings, wide-scale drought, and massive refugee problems, the regime was finally toppled in 1991 by a coalition of rebel forces.").

⁵⁴ For a general discussion on the relationship between Ethiopia and Eritrea, see *Ethiopia/Eritrea*, INTERNATIONAL CRISIS GROUP, <http://www.crisisgroup.org/en/regions/africa/horn-of-africa/ethiopia-eritrea.aspx>.

⁵⁵ See Azarva, *supra* note 3, at 457. See also Jutta Brunnée & Stephen J. Toope, *The Changing Nile Basin Regime: Does Law Matter?*, 43 HARV. INT'L L.J. 105, 105–6 (2002):

In the 1970s, Egyptian President Sadat and Ethiopian leader Mengistu Haile Miriam exchanged threats over the apportionment of the Nile waters. President Sadat warned that "[t]ampering with the rights of a nation to water is tampering with its life; and a decision to go to war on this score is indisputable in the international community."

(internal citations omitted).

⁵⁶ See Azarva, *supra* note 3, at 494–97 (outlining the various Egyptian threats to "bomb Ethiopia" to ensure access to the Nile).

importance to the US and other major powers, combined with its perceived willingness to retaliate in defense of its interest in the Nile, that have sufficiently deterred Ethiopia from aggressively moving to dam the Nile, not the merits of Egypt's legal position under international law.⁵⁷

Viewing the conflict between Ethiopia and Egypt over the Nile through an economics framework sheds light on state preferences and incentives, and provides a basis for determining the conditions under which states might comply with international law. Here, we see that a traditional doctrinal approach to international law is quite useful for understanding the substantive legal rules regarding the regulation of international watercourses, but it has little to say about the conditions under which Egypt and Ethiopia will comply with, violate, or ignore international law. In fact, if we value the benefits of international cooperation, the reduction of international externalities, and respect for international law, we should also focus on the obstacles, challenges, and limitations facing international law in a world without a central enforcement mechanism. An economics approach gets us closer to understanding the conditions under which international law is likely to work, while also encouraging creative solutions for those international disputes for which law is unlikely to resolve the issue definitively.

B. The Nile and Transaction Costs Economics

Neither the traditional approach nor the economics framework precludes the possibility of Egypt and Ethiopia negotiating a treaty to allocate the Nile's water resources in a mutually agreeable manner. In fact, negotiations among Egypt, Ethiopia, and the other states sharing the watercourse have commenced under the auspices of the NBI and continue, albeit unsuccessfully, under the CFA. Despite the fact that Egypt and Ethiopia—and the nine other riparian states—negotiate using the language of international law, the NBI will face many of the same problems that the economics framework has already exposed, namely, that the preferences and incentives of the central players in the negotiations, Egypt and Ethiopia, are seemingly intractable. We return to where we started; international law doctrine sets the substantive rules, while rational, self-interested states pursue their preferences in a world without a central enforcement mechanism. So where do we go from here?

Over time, one way or another, the dispute between Egypt and Ethiopia will be resolved. Ethiopia might complete the Dam Project and utilize the Blue Nile's water resources in a manner that causes significant harm, or Egypt might

⁵⁷ *Egypt Should Welcome Ethiopia's Nile Dam*, BLOOMBERG NEWS (June 23, 2013), <http://www.bloombergview.com/articles/2013-06-23/egypt-should-welcome-not-threaten-ethiopia-s-nile-dam>.

preserve the status quo by destroying the Dam Project and continue to exploit the vast majority of the Nile's water resources. Neither option is attractive as both reflect unilateral actions that will likely produce a suboptimal allocation of the Nile's water resources. But an economics approach might help us conceive of a better outcome than one dictated by power and or another dictated by traditional doctrinal analysis. As a very tentative thought experiment, perhaps it is worth considering the merits of a transaction costs approach to the problem.

Building on Coase's seminal work,⁵⁸ we might start with the assumption that if transaction costs are low, the entitlement will flow to the party that values it most regardless of where the entitlement is initially assigned. How would this play out here? For a moment we would put aside the international law doctrine and assign the right to either Egypt or Ethiopia. That is, if the property right were assigned to Egypt, for example, and Ethiopia valued it more, Ethiopia would pay Egypt for the property right to build the Dam Project and exploit the Nile's water resources. We would arrive at the efficient outcome because the party that valued the property right the most would secure it. Of course, this outcome depends on the absence or near absence of transaction costs and, as discussed above, the transaction costs—the political and monetary costs to reaching an agreement—between Egypt and Ethiopia appear enormous. In fact, since the Coasean approach implicitly assumes the existence of the state as an enforcement mechanism for rights and, in the international law context, there is no world government, the utility of this approach is not clear.

If transaction costs are high, we might think of a liability rule: Egypt has the entitlement, and Ethiopia can build the Dam Project and pay Egypt. If Ethiopia values the Nile's water resources at \$20 billion and Egypt values them at \$10 billion, Ethiopia would build the dam and pay Egypt some amount between \$10 billion and \$20 billion—say, \$15 billion. But a liability rule assumes that valuation is easy, and there is no reason to believe that Egypt and Ethiopia can come to an agreement on the proper valuation of the Nile's water resources, especially in the absence of a central enforcement mechanism capable of valuing the Nile and enforcing the valuation decision.

In light of the valuation issues connected to a liability rule, perhaps the only option is a property rule. We might assign the property right to Egypt, leaving Ethiopia to decide whether to infringe Egypt's right and continue the

⁵⁸ See Ronald H. Coase, *The Problem of Social Cost*, 3 J. L. & Econ. 1 (1960). Though the literature in this area is enormous, for a short introduction see RICHARD A. POSNER, *ECONOMIC ANALYSIS OF LAW* (2007); Guido Calabresi & A. Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089 (1972); Louis Kaplow & Steven Shavell, *Property Rules Versus Liability Rules: An Economic Analysis*, 109 HARV. L. REV. 713 (1996); Saul Levmore, *Unifying Remedies: Property Rules, Liability Rules, and Startling Rules*, 106 YALE L.J. 2149 (1997).

Dam Project. Egypt would then have two options: it could destroy the Dam Project and preserve its exclusive property right in the Nile's water resources (retaliation) or it could pay Ethiopia not to continue the Dam Project (bribe). But, once Ethiopia receives the money, what stops Ethiopia from returning to Egypt in five years with a new threat to expand the Dam Project on the Blue Nile? Or, on the other hand, what if Ethiopia ceases the Dam Project in reliance on an Egyptian promise to pay, and Egypt subsequently reneges? Alternatively, we could assign Ethiopia the property right, but the same problems exist. To complicate the matter further, since Ethiopia is the upstream riparian state, it could completely dam the Blue Nile whether or not it has a property right. And, if Ethiopia were stronger than Egypt, it wouldn't matter what Egypt tried to do; in a world without a central enforcement mechanism, Ethiopia would utilize the Blue Nile's water resources, leaving Egypt without recourse.

The status quo is one in which Egypt, in effect, has the property right and is currently exploiting the Nile, while Ethiopia tentatively attempts to utilize the water resources of the Blue Nile through the Dam Project, without offering to pay Egypt for the harm. But what if the status quo were different? Let us assume that neither Egypt nor Ethiopia is exploiting the Nile. How do ex post property or liability rules affect the states' ex ante incentives?⁵⁹ If Egypt had a property right and could enjoin or stop Ethiopia from exploiting the Nile, Ethiopia would underinvest in the Dam Project because it might have to share some portion of the investment return (the value produced by the Dam Project) with Egypt. The result is inefficient because Egypt's property right leads to suboptimal exploitation of the Nile by Ethiopia.

Now consider a liability rule. If Egypt has the entitlement to the Nile protected by the liability rule, how does it affect Ethiopia's ex ante incentives? With a liability rule, Ethiopia would have to pay Egypt for harms coming from its Dam Project but could keep any excess investment return. Since Ethiopia

⁵⁹ For the seminal article on property and liability rules, see Calabresi & Melamed, *supra* note 58, at 1092 (explaining that “[a]n entitlement is protected by a property rule to the extent that someone who wishes to remove the entitlement from its holder must buy it from him in a voluntary transaction in which the value of the entitlement is agreed upon by the seller,” and that “[w]henver someone may destroy the initial entitlement if he is willing to pay an objectively determined value for it, an entitlement is protected by a liability rule”). For a consideration of how property rights have evolved as a result of changing resource demands and new technologies, see Terry L. Anderson, *Donning Coarse-Coloured Glasses: A Property Rights View of National Resource Economics*, 48 *AUSTL. J. AGRI. & RESOURCE ECON.* 445, 447 (2004), which asks whether:

property rights evolve from existing property rights through contracting with those rights holders to reallocate rights and establish new ones or . . . change through revolutionary processes that cancel existing rights and redistribute them to new individuals or groups in an effort to meet the new demands and new technologies.

(internal citations omitted).

could capture the investment return over the harm, it would have an incentive to exploit the Nile at an efficient or optimal level. Ethiopia would exploit the Nile and pay Egypt the cost of the harm imposed, leaving both parties better off. Although this extremely simplified example⁶⁰ only touches on the potential effect of rules on ex ante incentives, it shows the utility of the economics approach in thinking about Egypt and Ethiopia's incentives in their conflict over the Nile.

V. CONCLUSION

The conflict between Egypt and Ethiopia is not a new one, and we are likely to see similar conflicts as water scarcity becomes increasingly prevalent. The economics approach applied here helps illuminate the underlying preferences motivating state behavior and creates space to begin imagining an incentive structure that would permit states to resolve issues cooperatively and would reduce externalities. This approach doesn't reject international law as a body of substantive rules; rather, it begins to specify the conditions under which international law can play a meaningful role in fostering international dispute resolution. In the case of Egypt and Ethiopia, while the economics approach did not provide a definitive answer to resolve the specific dispute—that is beyond the scope of a general framework—it does explain why debate over international water law doctrine is unlikely to end with a determinative interpretation of the relevant treaties, conventions, and customary international law governing the issue. The case of Ethiopia and Egypt will be resolved, if at all, with a deeper understanding of the role of state preferences, the possibility of retaliation, and the incentives of states in the absence of a world government—the economics approach.

⁶⁰ The discussion of Egypt and Ethiopia's ex ante incentives borrows heavily from Lucian Bebchuk's analysis of property and liability rules in the context of the "Factory" and the "Resort." See Lucian Arye Bebchuk, *Property Rights and Liability Rules: The Ex Ante View of the Cathedral*, 100 MICH. L. REV. 601 (2001).

Readers with comments may address them to:

Professor Daniel Abebe
University of Chicago Law School
1111 East 60th Street
Chicago, IL 60637
dabebe@uchicago.edu

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