

Do BITs Cause Opposition Between Investor Rights and Environmental Protection?

Submitted in partial fulfillment of the requirements for
the degree of
Master of Science
in
International Relations and Politics

Zhu Xiong

B.A. International Politics, Fudan University

M.S. International Relations and Politics, Carnegie Mellon University

(May 9, 2022)

Abstract

The globalization has brought enormous economic benefits to countries and people, while a series of problems such as environmental pollution have emerged and are becoming more and more urgent. Environmental protection has become increasingly important. At the same time, bilateral Investment Treaties (i.e., BITs) became more controversial in the 1990s. Although BITs can facilitate global investment and financial flows, they may also affect host country regulation as well as the protection of public interest. Most of the relevant research is qualitative, such as special doctrinal studies, case studies or descriptive statistics. The studies of impacts of BITs on environmental protection policy has not been as full as we expect. Therefore, this paper estimates the impact of BITs on the stringency of countries' environmental protection policies and greenhouse gas emissions through fixed effects models with 29 countries from 1993-2012. The results suggest that it is meaningful to include more provisions on public interest in BITs when countries are drafting treaties.

Introduction

With the deepening of economic globalization, the large-scale flow of production factors has brought enormous economic benefits to all countries and people, while a series of problems such as environmental pollution, resource depletion and global warming have emerged and are becoming more and more urgent. The issue of environmental protection is gradually attracting attention. In 1987 by the United Nations World Commission on Environment and Development, chaired by then Norwegian Prime Minister Brundtland, in the report “Our

Common Future”, based on the theory of intergenerational equity, which requires sovereign states to update their own development needs with the times, and to create and realize contemporary development with the premise of protecting the future rights of future generations.¹

At the same time, bilateral investment agreements (hereafter BITs) became more controversial in the 1990s. On the one hand, countries, especially developing countries, may compete to attract foreign investors by deregulating or limiting their regulatory powers. In a 2004 report by the United Nations Conference on Trade and Development (UNCTAD), it noted that BITs would “increase the likelihood that environmental damage will spread to more countries”.² On the other hand, achieving environmental protection will require significant private business activity, investment, and innovation, and the diversity of the private sector is an enabling tool for addressing sustainable development challenges.³ For example, the Paris Agreement explicitly emphasizes the importance of financial flows for environmental protection and calls for enhanced private sector participation in the implementation of Nationally Determined Contributions.⁴ Foreign investment is an important source of finance and technology.

As sustainable development receives more attention and social public interest begins to

¹ Brundtland, G., 1987. *Report of the World Commission on Environment and Development: Our common future*, New York: United Nations.

² Unctad.org. 2022. *INTERNATIONAL INVESTMENT AGREEMENTS: KEY ISSUES, Volume II | UNCTAD*. [online] Available at: <<https://unctad.org/webflyer/international-investment-agreements-key-issues-volume-ii>> [Accessed 13 January 2022].

³ Sdgcompass.org. 2018. *SDG compass—a guide for business action to advance the sustainable development goals*. [online] Available at: <<https://sdgcompass.org/download-guide/>> [Accessed 12 January 2022].

⁴ Unfccc.int. 2022. *The Paris Agreement*. [online] Available at: <<https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>> [Accessed 14 December 2021].

resonate more in BITs, the trend of incorporating environmental protection in free trade agreements (FTAs) and BITs is on the rise.⁵ Currently, the inclusion of sustainable development objectives in BITs is no longer limited to a general reference in the preamble. For example, on December 30, 2020, China and Europe reached an agreement in principle on the China-EU Comprehensive Investment Agreement, which includes a specific chapter on sustainable development, including commitments on labor and environmental protection, as well as provisions for a separate dedicated mechanism to resolve differences.⁶

Most of the studies in this area have focused on specific provisions of BITs, case studies of limited number of BITs. For example, Tamayo-Álvarez 2015 (see citation below) shows through a literature review, the interaction between investment treaties and sustainability, and there is a continuing trend to include corporation social responsibility (CSR) provisions in agreements.⁷ Lise Johnson et al. 2019 (see citation below) provide a framework for assessing the characteristics and impact of existing BITs, showing that current BITs contain provisions that protect the interests of investors and limit the ability of states to regulate investment in the public interest.⁸ Therefore, this paper seeks to quantify the impact of BITs on the stringency of countries' environmental protection policies and greenhouse gas emissions through fixed effects models. Because of the importance of investment for environmental

⁵ Tamayo-Álvarez, Rafael. 2015. "How International Investment Agreements Can Better Contribute to Sustainable Development by Reflecting the U.N. Global Compact Principles." *Advances in Sustainability and Environmental Justice* 16. Emerald Group Publishing Ltd.: p150. doi:10.1108/S2051-503020140000016021.

⁶ UNCTAD, 2021. *RECENT DEVELOPMENTS IN THE IIA REGIME: ACCELERATING IIA REFORM*. IIA Issues Note: Issue 3. Geneva, Switzerland: UNCTAD, p3

⁷ Tamayo-Álvarez, Rafael. 2015. "How International Investment Agreements Can Better Contribute to Sustainable Development by Reflecting the U.N. Global Compact Principles." *Advances in Sustainability and Environmental Justice* 16. Emerald Group Publishing Ltd.: 145–57.

⁸ Johnson, Lise, Lisa Sachs, and Nathan Lobel. 2019. "Aligning International Investment Agreements With The Sustainable Development Goals". *SSRN Electronic Journal*. doi:10.2139/ssrn.3452070.

protection, research in this paper will be beneficial in ensuring that responsible investment effectively contributes to environmental protection planning. At the same time, the study of differences will be able to help different countries develop and negotiate more balanced BITs.

Literature Review and Theory Design

BITs are a dual-edged sword when it comes to addressing climate change. On the one hand, it can help promote investment in low carbon, and on the other hand, it may be used to challenge regulatory efforts aimed at reducing greenhouse gases.⁹ The theoretical logic of the argument is discussed in more detail below.

The Role of BITs in environment protection

Current investments in renewable energy and low-carbon activities often rely on public incentives and government commitments to support them, and BITs help attract low-carbon investments by reducing political risk.¹⁰ Scholars have argued that the primary role of BITs should be to protect the interests of private sectors. Megan Sheffer 2011(see below citation) points out that the purpose of BITs is to promote global trade, and therefore the primary role of BITs should be to protect the interests of the private sector.¹¹ Jarrod Hepburn et al. 2020 (see below citation) also show that the central purpose of BITs in early stages of development

⁹ Alschner, Wolfgang and Tuerk, Elisabeth, The Role of International Investment Agreements in Fostering Sustainable Development (July 18, 2013). Baetens, F., (Ed.), Investment Law Within International Law: Integrationist Perspectives (CUP 2013) , p4, Available at <http://dx.doi.org/10.2139/ssrn.2295440>

¹⁰ Alschner, Wolfgang and Tuerk, Elisabeth, The Role of International Investment Agreements in Fostering Sustainable Development (July 18, 2013). Baetens, F., (Ed.), Investment Law Within International Law: Integrationist Perspectives (CUP 2013) , p4, Available at <http://dx.doi.org/10.2139/ssrn.2295440>

¹¹ Megan Wells Sheffer, 2011 “Bilateral Investment Treaties: a Friend or Foe to Human Rights? (Sustainable Development, Corporate Governance, and International Law).” *Denver journal of international law and policy*. 39, no. 3 (n.d.).

was to establish general standards of investment protection against direct expropriation, discriminatory treatment, and property transfer restrictions by host countries.¹² Investment liberalization and the rapid growth of FDI drive economic development, which helps to achieve the optimal allocation of environmental resources, thus ensuring that productive activities in the most efficient manner.¹³

On the other hand, scholars point out that due to the competition among developing countries, more investors and financial support from transnational corporations are attracted at the expense of domestic public interest. There is a need to include the objectives involving values other than investment property protection such as environmental, labor, and human rights protection in BITs. The potential inequities contained in various provisions of BITs can be detrimental to the public interest of developing or transition countries.¹⁴ Meanwhile, De Brabandere et al. 2012 (see below citation) indicate that countries where investors are willing to invest often lack the economic incentives to proactively respect the human rights of their citizens, particularly in terms of labor rights, environmental laws, and other rights.¹⁵

The evolution of environmental protection issues in BITs

The evolution has undergone a transition from externalities to endogeneity, from the 1990s,

¹² Hepburn, J., Paparinskis, M., Skovgaard Poulsen, L. and Waibel, M., 2020. Investment Law before Arbitration. *Journal of International Economic Law*, 23(4), pp.929-947.

¹³ Brundtland, G., 1987. *Report of the World Commission on Environment and Development: Our common future*, New York: United Nations.

¹⁴ Van Harten, Gus. 2010. "Five Justifications For Investment Treaties: A Critical Discussion". *SSRN Electronic Journal*. doi:10.2139/ssrn.1622928.

¹⁵ De Brabandere, Eric, M. Fitzmaurice, and P. Merkouris. 2012, "Human rights considerations in international investment arbitration." *The Interpretation and Application of the European Convention of Human Rights: Legal and Practical Implications*. Vol. 12. Martinus Nijhoff Publishers.

when BITs focused only on establishing general standards for investment protection, to more recent commitments by countries to transform investment into development that promotes public benefits such as environmental protection.¹⁶ Some countries have begun to adapt BITs to include measures aimed at providing more options for climate change regulation. Kabir Duggal et al. 2021 (see below citation) analyze the drafting trends of BITs for 2019-2020 including in model agreements related to the energy sector in the context of sustainable development and human rights. While Covid-19-related measures affect the energy sector, the growing importance of health, environmental, labor, and human rights provisions in BITs cannot be ignored.¹⁷

This includes placing investment protection in a broader policy context, such as by referring to the goal of addressing climate change in the preamble of agreements,¹⁸ incorporating climate change-related exceptions, exclusions into the treaty text, such as the 2012 the United States Model BIT, which states that “except in rare circumstances, non-discriminatory regulatory actions by a Party that are designed and applied to protect legitimate public welfare objectives, such as public health, safety, and the environment, do not constitute indirect expropriations.”¹⁹ Chukwunonso Ekeolisa 2020 (see below citation) illustrates the obligations that international oil companies are expected to fulfill in relation to protecting the

¹⁶ Qionghua Wang, 2021, Sustainable Development Issues in International Investment Agreements: From Externalities to Internalities, *International Law Review of Wuhan University*, 5(05): 117-133, doi: 10.13871/j.cnki.whuir.2021.05.006

¹⁷ Duggal, Kabir, Rekha Rangachari, and Kanika Gupta. 2021. "Consequences Of Crisis And The Great Re-Think: COVID-19'S Impact On Energy Investment, Sustainability And The Future Of International Investment Agreements". *The Journal Of World Energy Law & Business*. doi:10.1093/jwelb/jwab015.

¹⁸ Gordon, K. and J. Pohl. 2011, “Environmental Concerns in International Investment Agreements: A Survey”, *OECD Working Papers on International Investment*, 2011/01, OECD Publishing.
<http://dx.doi.org/10.1787/5kg9mq7scrjh-en>

¹⁹ "2012 U.S. Model Bilateral Investment Treaty". 2022. *Investmentpolicy.Unctad.Org*.
<https://investmentpolicy.unctad.org/international-investment-agreements/treaty-files/2870/download>.

environment and human rights in Nigeria's bilateral investment treaties. The study not only reviews whether Nigeria's domestic laws enable the enforcement of obligations, but also analyzes which international mechanisms can regulate the environmental and human rights impacts of international oil companies, demonstrating that BITs offer opportunities to mitigate environmental and human rights impacts in the context of energy extraction.²⁰

Two OCED reports also demonstrate the existence of trends through data. Gordon and Pohl 2011 (see below citation) build a statistical portrait of government practice in international investment agreements²¹ (hereafter IIAs) related to environmental issues through a sample of 1623 IIAs, showing an increasing trend in the incorporation of environmental protection in BITs, but that the substance of treaty content varies by country and over time.²² Gordon et al. 2014 (see below citation) show that although the government practice has not changed substantially since 2011, but over 75 percentage of IIAs contain sustainability-related content.²³ While the data statistics enable the discovery of changes in the inclusion of environmental protection topics in BITs, it is more essential to explore the causality contained therein.

²⁰ Ekeolisa, Chukwunonso Cherechi. 2020, *FRAMEWORK FOR OBLIGATIONS REGARDING ENVIRONMENTAL AND HUMAN RIGHTS PROTECTION IN NIGERIA'S BILATERAL INVESTMENT TREATIES*. Diss. University of Saskatchewan.

²¹ International investment agreements (IIAs) are divided into two types: (1) bilateral investment treaties (BITs) and (2) treaties with investment provisions (TIPs). Cited from "International Investment Agreements Navigator | UNCTAD Investment Policy Hub". *Investmentpolicy.Unctad.Org*, 2022.
<https://investmentpolicy.unctad.org/international-investment-agreements>.

²² Gordon, K. and J. Pohl. 2011. "Environmental Concerns in International Investment Agreements: A Survey", *OECD Working Papers on International Investment*, 2011/01, OECD Publishing.
<http://dx.doi.org/10.1787/5kg9mq7scrjh-en>

²³ Gordon, K., J. Pohl and M. Bouchard. 2014. "Investment Treaty Law, Sustainable Development and Responsible Business Conduct: A Fact Finding Survey", *OECD Working Papers on International Investment*, 2014/01, OECD Publishing.
<http://dx.doi.org/10.1787/5jz0xvgx1zlt-en>

How BITs Bind Regulation

While more and more countries are signing BITs with a focus on incorporating public issues into the text, it is undeniable that treaty practice²⁴ and the degree of investment liberalization regulated by treaties vary from country to country, which can lead to various extents of regulatory restraint.

First, the Investor-State Dispute Settlement (hereafter ISDS) mechanism in the investment chapters of most BITs allows a particular actor, usually a multinational enterprise, to sue a host government for governmental measures that undermine its actual or anticipated profitability, regardless of the objectives of the challenged measures, and without the need to local remedies.²⁵ Tribunals can adjudicate disputes without due regard or respect for other obligations, rights or policies of the host government under domestic or international law, as well as the rights and interests of third parties related to or affected by the dispute.²⁶ As a result, multinational enterprises and foreign investors can easily sue host countries when they perceive that environmental measures add to their additional costs or cause other negative impacts. For example, over the past 30 years, the number of cases registered with ISDS has grown much faster than the number of cases registered with the WTO.²⁷

²⁴ Gordon, K., J. Pohl and M. Bouchard .2014, "Investment Treaty Law, Sustainable Development and Responsible Business Conduct: A Fact Finding Survey", *OECD Working Papers on International Investment*, 2014/01, OECD Publishing. <http://dx.doi.org/10.1787/5jz0xvngx1zlt-en>

²⁵ Lisa E. Sachs, Lise Johnson & Ella Merrill, 2020. *Environmental Injustice: How Treaties Undermine Human Rights Related to the Environment*, La Revue des Juristes de Sciences Po, no. 18, p90. Available at: https://scholarship.law.columbia.edu/sustainable_investment_staffpubs/71

²⁶ Columbia Center on Sustainable Investment, *Primer: International Investment Treaties and Investor-State Dispute Settlement*, 2019. Available at: https://scholarship.law.columbia.edu/sustainable_investment_staffpubs/181

²⁷ Simmons, Beth A. "Bargaining over BITs, Arbitrating Awards: The Regime for Protection and Promotion of International Investment." *World Politics* 66, no. 1 2014: p19. doi:10.1017/S0043887113000312.

The impact that accompanies arbitration can strike at the host country's environmental regulation in several ways. On the one hand, arbitration can increase the government's financial outlay. The cost of participation in arbitration itself can raise the actual cost of adopting and implementing the measure, for example, in the 2008 Plama Consortium v. Bulgaria case, the host country's legal costs (jurisdictional and merits phase) were \$13.2 million.²⁸ The actual cost of environmental measures is higher once the government is arbitrated as liable and is required to pay compensation, because in recent years, there have been an increasing number of awards in excess of \$100 million.²⁹ The willingness of the accused government (or even another government) to attempt to adopt or maintain environmental protection measures may thus be swayed, especially since many developing countries may lack the legal capacity and experience to respond effectively to claims.³⁰ Using the province of Ontario in Canada, as a case study, Gus Harten and Dayna Scott 2016 (see below citation) show that issues related to investment agreements, particularly the ISDS affects the decision-making process in environmentally relevant sectors. Governments tend to be risk-averse, and the financial risks associated with ISDS can influence government decisions.³¹

The empirical models further validate the constraints of the ISDS mechanism on government

²⁸ Lisa E. Sachs, Lise Johnson & Ella Merrill, 2020. *Environmental Injustice: How Treaties Undermine Human Rights Related to the Environment*, La Revue des Juristes de Sciences Po, no. 18, p, 94. Available at: https://scholarship.law.columbia.edu/sustainable_investment_staffpubs/71

²⁹ Marshall, Fiona, Aaron Cosbey, and Deborah Murphy. 2010. *Climate Change and International Investment Agreements: Obstacles or opportunities?*. Winnipeg: International Institute for Sustainable Development.

³⁰ Lisa E. Sachs, Lise Johnson & Ella Merrill, 2020. *Environmental Injustice: How Treaties Undermine Human Rights Related to the Environment*, La Revue des Juristes de Sciences Po, no. 18, p, 94, Available at: https://scholarship.law.columbia.edu/sustainable_investment_staffpubs/71

³¹ Gus Van Harten, Dayna Nadine Scott, 2016. Investment Treaties and the Internal Vetting of Regulatory Proposals: A Case Study from Canada, *Journal of International Dispute Settlement*, Volume 7, Issue 1, Pages 92–116, <https://doi.org/10.1093/jnlids/idv031>

regulation. Tarald Berge and Axel Berger 2021 (see below citation) assess whether ISDS cases affect the host country's domestic regulatory propensity through pooled cross-section ordinary least squares (OLS) regression, showing that having a high-capacity bureaucracy, the number of ISDS cases is negatively associated with regulatory behavior.³² Beth Simmons 2014 (see below citation) examines the decentralization of the international investment regime and the asymmetric power that ISDS gives to the private sector through a GLS model, while power asymmetry implies pressure on developing countries to make concessions to powerful output countries, while the business cycle contributes to the pattern of concessions.³³ In addition, the impact of foreign direct investment (FDI) growth from BITs on environmental regulation has also been studied.

Second, the various investment protection provisions contained in BITs allow the foreign private sector to challenge the host government's implementation of domestic policies. For example, fair and equitable treatment (FET), which is designed to protect investors "from the serious effects of arbitrary, discriminatory or abusive conduct by the host country," is one of the most frequently invoked treaty provisions in ISDS.³⁴ However, the vague and broad definition of FET and the potentially expansive interpretation of the FET standard allow foreign investors to challenge many domestic policies and limit the host country's decision-making autonomy.³⁵ Similarly, uncertainty about the meaning and scope of indirect

³² Tarald Laudal Berge, Axel Berger, 2021. Do Investor-State Dispute Settlement Cases Influence Domestic Environmental Regulation? The Role of Respondent State Bureaucratic Capacity, *Journal of International Dispute Settlement*, Volume 12, Issue 1, Pages 1–41, <https://doi.org/10.1093/jnlids/idaa027>

³³ Simmons, Beth A. 2014. "Bargaining over BITs, Arbitrating Awards: The Regime for Protection and Promotion of International Investment." *World Politics* 66, no. 1: 12–46. doi:10.1017/S0043887113000312.

³⁴ Xiao, Jun. 2015, "How can a prospective China–EU BIT contribute to sustainable investment: in light of the UNCTAD Investment Policy Framework for Sustainable Development." *The Journal of World Energy Law & Business* 8.6: 521–541.

³⁵ Ye, F. 2020. The impact of bilateral investment treaties (BITs) on collective labor rights in developing countries. *Rev Int*

expropriation clauses provides grounds for the foreign private sector to challenge the host government's implementation of domestic policies by arguing that its property has been indirectly expropriated.³⁶

The most favored nation (MFN) clause may entitle an investor to circumvent the climate protection obligations in an IIA by introducing more investor-friendly provisions from another IIA to which the host country is a party.³⁷ For example, the ECT grants the most favorable investment protection to the investor in any other past or future BITs, which means that the BITs' innovative provisions on environmental protection will be invalid when another IIA exists between the host and home country that does not include environmental protection.³⁸ In addition, BITs contain umbrella clauses that allow investors to invoke stabilization clauses in their contracts with the host country, and the inclusion of stabilization clauses in investment contracts limits domestic policy autonomy.³⁹ Such clauses are designed to prevent domestic changes in the host country from harming the interests of the investor, including changes in environmental, labor or health and safety laws, unless specifically excluded.⁴⁰ This is particularly important in the context of environmental protection, as stabilization clauses are most often found in large infrastructure and extractive industry

Organ 15, 899–921. <https://doi.org/10.1007/s11558-019-09367-9>

³⁶ Nikiéma, Suzy H. 2012. *Best Practices: Indirect Expropriation*. Winnipeg, Canada: International Institute for Sustainable Development.

³⁷ Bodea, Cristina, and Fangjin Ye. 2020. "Investor Rights versus Human Rights: Do Bilateral Investment Treaties Tilt the Scale?" *British Journal of Political Science* 50, no. 3: 955–77. doi:10.1017/S0007123418000042.

³⁸ Marshall, Fiona, Aaron Cosbey, and Deborah Murphy. 2010. *Climate Change and International Investment Agreements: Obstacles or opportunities?*. International Institute for Sustainable Development. P7.

³⁹ "HUMAN RIGHTS, TRADE AND INVESTMENT MATTERS". 2006. *Amnesty International Report*. <https://www.amnestyusa.org/files/pdfs/hrtradeinvestmentmatters.pdf>.

⁴⁰ Wong, Jarrod. 2006. "Umbrella clauses in bilateral investment treaties: Of breaches of contract, treat violations, and the divide between developing and developed countries in foreign investment disputes." *Geo. Mason L. Rev.* 14: 135.

concession contracts, both of which tend to have large carbon emissions.⁴¹

Cristina Bodea and Fangjin Ye 2020 (see below citation) apply OLS regression with panel-corrected standard errors and an AR (1) process to propose that because of the extensive and legally effective protection that BITs provide to foreign investors, developing countries that ratify more BITs are more likely to have poorer human rights practices, and the higher ratifications of BITs are more likely to lead to human rights violations in non-democratic countries.⁴² Another study by Fangjin Ye 2020 (see below citation) notes that the protections afforded to foreign investors by BITs can challenge labor grievances and protests in developing countries, and host governments are forced to take steps to weaken workers' ability to engage in collective action, leading to worsening labor practices and a wider gap between labor laws and practices.⁴³

Finally, BITs may create bottom-up competition in developing countries. Many developing countries attempt to gain a strategic trade advantage by offering low cost-cutting taxes and lax environmental standards, or by reducing welfare spending, because policymakers believe their countries remain on the climbing side of the environmental Kuznets curve.⁴⁴ Not only that, but BITs can also lock in policies that promote exports. Multinational corporations make

⁴¹ Marshall, Fiona, Aaron Cosbey, and Deborah Murphy. 2010. *Climate Change and International Investment Agreements: Obstacles or opportunities?*. Winnipeg: International Institute for Sustainable Development, P9.

⁴² Bodea, Cristina, and Fangjin Ye. 2020. "Investor Rights versus Human Rights: Do Bilateral Investment Treaties Tilt the Scale?" *British Journal of Political Science* 50, no. 3: 955–77. doi:10.1017/S0007123418000042.

⁴³ Ye, F. 2020. The impact of bilateral investment treaties (BITs) on collective labor rights in developing countries. *Rev Int Organ* 15, 899–921. <https://doi.org/10.1007/s11558-019-09367-9>

⁴⁴ Dong, Baomin, Jiong Gong, and Xin Zhao. 2012. "FDI and Environmental Regulation: Pollution Haven Or a Race to the Top?" *Journal of Regulatory Economics* 41 (2) (04): 216-237. doi:http://dx.doi.org/10.1007/s11149-011-9162-3.

developing countries part of their global production chains through imports and exports,⁴⁵ and under certain conditions, trade competition leads to lower environmental and labor standards.⁴⁶

In general, BITs may influence host countries' implementation of policies related to strengthening public interest, and the provisions contained in BITs are evolving. Many studies related to BITs and environmental protection have mostly conducted qualitative research. Therefore, this paper seeks to conduct more comprehensive research on the relation between BITs and environmental protection. Based on the theories and previous research, this paper have two hypotheses:

Hypothesis 1: *investor-friendly provisions in BITs would weaken host country environmental protection policies.*

Hypothesis 2: *the inclusion of public interest-related provisions in BITs will strengthen host country environmental protection policies.*

Research Design

This paper uses a sample of 29 countries from 1993 to 2013 to test the hypotheses, with the key dependent variable determining the temporal selection of the sample. And control for unobservable individual and time differences through fixed effects models. The table 1 shows data sources and descriptions.

⁴⁵ Bütte, Tim, and Milner, Helen. 2014. Foreign Direct Investment and Institutional Diversity in Trade Agreements. *World Politics* 66 (1):88–122.

⁴⁶ Cao, Xun, and Prakash, Aseem. 2010. Trade Competition and Domestic Pollution. *International Organization* 64 (3):481–503.

	Name of Indicator	Indicator Description	Source
DVs	EPS	The stringency of countries' environmental policies.	The OECD Environmental Statistics database
	CO2 per capita	Annual CO2 emission (PER CAPITA) (Logged)	Our World in Data based on the Global Carbon Project
	GHG	Total greenhouse gas emissions including land-use change and forestry, measured in tonnes of CO2-equivalents.(Logged)	Our World in Data based on the Climate Watch
IVs	lag.cumBITe	Cumulative number of BITs (lagged by 1 year)	UNCTAD, IIA Navigator, aggregated and compiled by Daniel Hansen
	lag.cumBITe_Lib	Cumulative BIT liberal score (lagged by 1 year) Containing 17 items, E.g. Right to regulate, health and environment, CSR...	UNCTAD, IIA Navigator, aggregated and compiled by Daniel Hansen
	lag.cumBITe_InvFriendly	Cumulative BIT investor friendly score (lagged by 1 year) Containing 11 items, E.g. FET, ICSID, Umbrella...	UNCTAD, IIA Navigator, aggregated and compiled by Daniel Hansen
	r. cumlib	Ratio of cumulative liberal score to total cumulative BITs (cumBITe_Lib/cumBITe)	UNCTAD, IIA Navigator, aggregated and compiled by Daniel Hansen
	r. cuminv	Ratio of cumulative investor friendly scores to total cumulative BITs (cumBITe_InvFriendly/cumBITe)	UNCTAD, IIA Navigator, aggregated and compiled by Daniel Hansen
Control Variables	GDP pc (logged)	GDP per capita in constant 2015 US\$	World Development Indicators (WDI) database
	Trade (logged)	Imports and Exports of goods and services (% of GDP)	World Development Indicators (WDI) database
	Population density	Population density (people per sq. km of land area)	World Development Indicators (WDI) database
	FDI	FDI inflows and out flows (% of GDP) (lagged by 1 year)	UNCTAD database
	CSO consultation	Are major civil society organizations (CSOs) routinely consulted by policymakers on policies relevant to their members? (0: No, 1: To some degree, 2: Yes)	Varieties of Democracy Dataset(V-Dem)
	Left_govt	Party orientation with respect to economic policy (Left:1, Others:0)	The Database of Political Institutions(DPI)

Table 1 Data Descriptions and Sources

Dependent variable (DV)

This paper uses the OECD index used to measure the stringency of countries' environmental policies (EPS). The index ranges from 0 (no stringency) to 6 (highest stringency) to measure the extent to which a country's environmental policy imposes explicit or implicit costs on environmental pollution and harmful behavior.⁴⁷ Environmental policies may not only influence policy instruments such as tax and trade programs but may also pose barriers to market entry and business competition. Therefore, it is reasonable to measure the degree of environmental protection in the host country by the environmental policy stringency index.

Moreover, although the OECD report suggests that countries' environmental policies have

⁴⁷ OECD. 2016, "Environmental policy: Environmental Policy Stringency index", *OECD Environment Statistics* (database), <https://doi.org/10.1787/2bc0bb80-en>

become more stringent over 23 years,⁴⁸ it is still worth exploring whether the BITs' requirements for investment liberalization have an impact on environmental protection policies. In addition, two emission-related metrics, CO2 emissions per capita⁴⁹ and total greenhouse gas (GHG) emissions⁵⁰, are included in this paper to track government environmental protection actions to complement environmental protection that cannot be observed by the EPS. Both variables are logged to undermine the differences in varying units of the variables.

Independent variable (IV)

The source of the key independent variables is UNCTAD's the IIA Navigator,⁵¹ aggregated and compiled by Daniel Hansen⁵². The dataset contains the cumulative number of BITs approved and enforced by a country each year, which can capture the total amount of leverage foreign investors have over the host country and the potential to exert influence on environmental protection policies. First is the total number of cumulative BITs, the higher the number of BITs approved by the host country, the more lenient the environmental protection policy might be. Second is the cumulative BITs liberal scores, i.e., the cumulative number that incorporates provisions relevant to the public interest, such as right to regulate and CSR. Third is the cumulative investor-friendly scores, clauses such as MFN, FET are incorporated.

⁴⁸ Botta, E. and T. Koźluk .2014, "Measuring Environmental Policy Stringency in OECD Countries: A Composite Index Approach", *OECD Economics Department Working Papers*, No. 1177, OECD Publishing, Paris, <https://doi.org/10.1787/5jxrjnc45gvg-en>.

⁴⁹ "CO₂ Emissions Per Capita Vs GDP Per Capita". Our World In Data, 2022. <https://ourworldindata.org/grapher/co2-emissions-vs-gdp>.

⁵⁰ Ritchie, Hannah, Max Roser, and Pablo Rosado. 2022. "CO₂ And Greenhouse Gas Emissions". *Our World In Data*, <https://ourworldindata.org/greenhouse-gas-emissions>.

⁵¹ "International Investment Agreements Navigator | UNCTAD Investment Policy Hub". 2022. *Investmentpolicy.Unctad.Org*. <https://investmentpolicy.unctad.org/international-investment-agreements/model-agreements>.

⁵² Daniel Hansen, Post-Doctoral Research Fellow at Institute for Politics and Strategy, Carnegie Mellon University

And all independent variables are lagged by 1 year to reduce any possible contemporaneity bias. In addition, since only approved and enforced BITs are legally binding,⁵³

Control variables

Based on previous research on the impact of BITs on the environmental protection⁵⁴, and to illustrate politics and the impact of global economic interdependence on countries' environmental protection policies, the following control variables will be included: (1) FDI flows as a percentage of GDP to measure foreign investment (UNCTAD database). (2) GDP per capita in constant 2015 the United States dollars (logged) (World Development Indicators (WDI) database). (3) Total exports and imports of a country as a share of GDP (WDI database). (4) Population per square kilometer of land area (WDI database). (5) CSO consultation by policy makers (Varieties of Democracy Dataset(V-Dem)). (6) Party orientation with respect to economic policy (The Database of Political Institutions (DPI)). Besides, extra time trend control variable is added because of the time heterogeneity of the DV as shown in the figure 1.

⁵³ Haftel, Yoram Z. 2010. "Ratification Counts: US Investment Treaties And FDI Flows Into Developing Countries". *Review Of International Political Economy* 17 (2): 348-377. doi:10.1080/09692290903333103.

⁵⁴ Ye, F. 2020. The impact of bilateral investment treaties (BITs) on collective labor rights in developing countries. *Rev Int Organ* 15, 899–921. <https://doi.org/10.1007/s11558-019-09367-9> and Bodea, Cristina, and Fangjin Ye. 2020. "Investor Rights versus Human Rights: Do Bilateral Investment Treaties Tilt the Scale?" *British Journal of Political Science* 50, no. 3: 955–77. doi:10.1017/S0007123418000042.

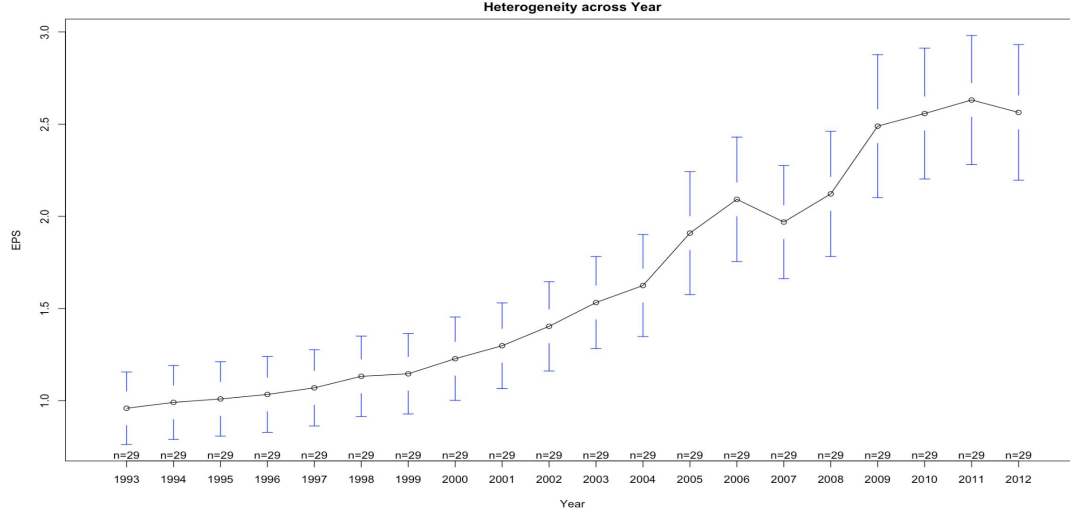


Figure 1 Heterogeneity across Year

Empirical Design

The empirical model is as follows. Based on the hypotheses, this paper expects that when the IV is the cumulative total number of BITs, β_2 of EPS is negative, and the one with emissions indicators is positive, indicating the stringency of BITs on investment liberalization that may limit the country's environmental protection policies. When IV is cumulative BITs liberal scores, β_2 of EPS is positive, and emission indicators will decrease. When IV is cumulative BITs investor friendly scores, β_2 of EPS is positive, and β_2 of the emission indicator is negative. In addition, standard errors are replaced by clustered standard errors in the models to eliminate the correlation of individual characteristics in the panel data.

$$DV_{i,t} = \beta_1 + \beta_2 BITs_{i,t-1} + [Controls]_{i,t-1} + \varepsilon_{i,t} + \theta_i + \mu_t$$

Findings

The results show more complicate situation. As shown in the table 2. The first column shows that only cumulative liberal scores among the independent variables were statistically significant under 10 percent. When the cumulative liberal scores increase each unit, the higher level of EPS index. For each unit increase in trade and FDI, EPS decreases. And the second and third columns show that both CO₂ emission per capita and GHG emission increase when the amount of BITs increase and decrease when the cumulative liberal and investor friendly scores increase. Moreover, for the control variables, it can be seen that pollution rises with each unit of GDP per capita increase. Trade, while weakening EPS, may lead to a decrease in pollution. Population density also leads to pollution. the flow of FDI, on the other hand, leads to a decrease in EPS and an increase in pollution. Left-wing governments also behave differently in CO₂ emissions per capita and GHG emissions. This fits hypothesis 1 but disproves hypothesis 2.

The results in Table 1 show that the inclusion of the liberal clause, i.e., the clause to protect the public interest, has a positive effect on stricter environmental protection policies. However, the investor-friendly clauses do not have a promotional effect on pollution as expected. Since most of the countries included in the dataset used in this paper are developed countries, a few countries included in time are also BRICS countries, namely Brazil, Russia, India, People's Republic of China, and South Africa. Most of these countries are pioneers in protecting the environment, and environmental pollution tends to slow down or decline after the 1990s. Therefore investor-friendly provisions have less impact on environmental

pollution in these countries. Thus, this paper seeks to further investigate whether this affects EPS and emission indicators by replacing the dependent variable with ratio of cumulative liberal scores and ratio of cumulative investor friendly scores.

	<i>Dependent variable:</i>		
	EPS (1)	CO2.per.capita (2)	GHG (3)
lag.cumBITe	−0.019 (0.019)	0.009*** (0.00001)	0.014*** (0.00002)
lag.cumBITe_Lib	0.006* (0.003)	−0.001*** (−0.00000)	−0.003*** (−0.00000)
lag.cumBITe_InvFriendly	0.002 (0.003)	−0.001*** (−0.00000)	−0.002*** (−0.00000)
log(GDP_pc)	−0.766 (0.534)	0.743*** (−0.0002)	0.652*** (−0.0003)
Trade	−0.814** (0.355)	−0.049*** (−0.00002)	−0.131*** (0.00001)
Population_density	−0.002 (0.005)	0.001*** (−0.00000)	0.003*** (−0.00000)
lag.FDI	−0.068* (0.036)	0.015*** (0.00000)	0.019*** (−0.00001)
CSO_consultation	−0.033 (0.192)	0.026*** (0.00001)	−0.011*** (0.0001)
Left_govt	0.008 (0.084)	−0.001*** (−0.00002)	0.015*** (−0.00002)
as.numeric(Year)	0.134*** (0.018)	−0.023*** (−0.00000)	−0.019*** (0.00001)
Observations	466	466	466
R ²	0.746	0.653	0.315
Adjusted R ²	0.725	0.624	0.258
F Statistic (df = 10; 429)	125.935***	80.866***	19.758***
<i>Note:</i> *p<0.1; **p<0.05; ***p<0.001			

Table 2 The Impact of Cumulative IVs on DVs

Since the results of CO2 emissions per capita and GHG emissions are similar, this paper chooses CO2 emissions per capita to reduce the heterogeneity of countries in terms of total GHG emissions. As can be seen in the table 3, EPS is not statistically significant, but the ratio

of investor friendly has a statistically significant effect on CO₂ emissions under one percent. The higher the portion of investor friendly scores, CO₂ emissions per capita increases. And although EPS is more than ten percentage significant, the coefficient can still have some insight. The higher portion of investor friendly, the lower the EPS will be. Otherwise, for every unit increase in GDP per capita, EPS will subsequently decrease by 1.2 units. Growth in trade weakens EPS, and population density increases per capita CO₂ emissions to some extent.

The results here suggest that investor-friendly terms may, to some extent, lead to higher pollution levels, but it is not entirely clear. It is possible that this is a consequence of different types of FDI, for example some highly polluting investments may cause an increase in per capita CO₂ emissions. Furthermore, it is reasonable to argue that the increase in GDP per capita and trade weakens environmental protection and increases pollution emissions. Until sustainable technologies and energy efficient technologies are developed, production and economic development are accompanied by pollution emissions.

	<i>Dependent variable:</i>			
	EPS (1)	CO2.per.capita (2)	EPS (3)	CO2.per.capita (4)
r.cumlnv	−0.071 (0.059)	0.038*** (0.011)		
r.cumlib			0.062 (0.070)	0.011 (0.014)
log(GDP_pc)	−1.195*** (0.204)	0.851*** (0.039)	−1.192*** (0.206)	0.876*** (0.040)
Trade	−0.847*** (0.145)	−0.030 (0.028)	−0.878*** (0.144)	−0.016 (0.028)
Population_density	−0.003 (0.003)	0.001** (0.0005)	−0.003 (0.003)	0.001** (0.0005)
lag.FDI	−0.006 (0.023)	0.005 (0.005)	−0.009 (0.024)	0.005 (0.005)
CSO_consultation	0.002 (0.082)	0.014 (0.016)	0.006 (0.082)	0.009 (0.016)
Left_govt	−0.028 (0.043)	0.006 (0.008)	−0.022 (0.043)	0.006 (0.009)
as.numeric(Year)	0.139*** (0.006)	−0.023*** (0.001)	0.136*** (0.006)	−0.022*** (0.001)
Observations	474	474	474	474
R ²	0.758	0.638	0.757	0.629
Adjusted R ²	0.739	0.609	0.739	0.600
F Statistic (df = 8; 439)	171.661***	96.517***	171.324***	92.975***
<i>Note:</i>			* p<0.1; ** p<0.05; *** p<0.001	

Table 3 The Impact of Ratio IVs on DVs

Conclusion

In conclusion, this paper estimates the impact of BITs on the stringency of countries' environmental protection policies and greenhouse gas emissions through fixed effects models with 29 countries from 1993-2012. The inclusion of more public interest-related provisions in BITs helps strengthen host countries' environmental protection policies and reduce CO2 and GHG emissions, which provides meaningful breathing space for host countries. However, the case of investor friendly scores is more complicated and, unlike what is expected from the relevant literature and theory, the effect on EPS is negative but not significant, and there is

some support for higher pollution levels, but it is not entirely clear. It is possible that this is the result of different FDI, such as some highly polluting investments. Therefore, as countries draft their BITs, it makes sense to include more provisions on public benefits in the BITs. Because even without an environmental clause, a right to regulate clause could have the same effect.

For future research directions, since the sample this selected is EPS to measure national environmental protection policies, it is based on the OECD Environmental Statistics database, which contains countries mostly from European countries, developed countries, and BRICS. While it provides an accurate indicator of environmental protection policies, it restricts the sample substantially away from much of the other world. Figure 2 shows that the trend of environmental protection policies in European countries is similar. Meanwhile, the United States and Japan have reached a higher level of environmental policy stringency. But China and India are still different from them. Therefore, future studies on the impact of BITs on environmental protection may see more differences in the sample of developing countries. It is also possible to compare the differences between developed and developing countries.

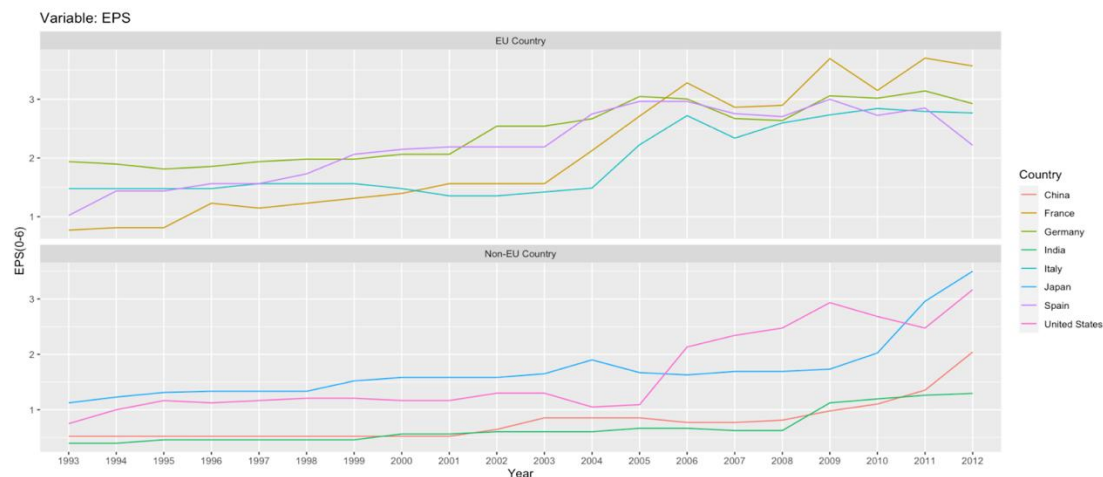


Figure 2 EPS in Different Countries over Time

Bibliography

Bodea, Cristina, and Fangjin Ye. 2020, "Investor Rights versus Human Rights: Do Bilateral Investment Treaties Tilt the Scale?" *British Journal of Political Science* 50, no. 3: 955–77. doi:10.1017/S0007123418000042.

Bradly J. Condon, 2015. Climate Change and International Investment Agreements, *Chinese Journal of International Law*, Volume 14, Issue 2, Pages 305–339, <https://doi-org.cmu.idm.oclc.org/10.1093/chinesejil/jmv023>

Cole, Matthew A., Robert JR Elliott, and Per G. Fredriksson. 2006. "Endogenous pollution havens: Does FDI influence environmental regulations?." *Scandinavian Journal of Economics* 108.1: 157-178

Dong, B., Gong, J., & Zhao, X., 2012. FDI and environmental regulation: Pollution haven or a race to the top? *Journal of Regulatory Economics*, 41(2), 216–237.

Elliott, R. J. R., & Zhou, Y., 2013. Environmental regulation induced foreign direct investment. *Environmental and Resource Economics*, 55(1), 141–158. doi:<https://doi.org/10.1007/s10640-012-9620-0>

Fauchald, Ole Kristian. 2021. "International Investment Law in Support of the Right to Development?" *Leiden Journal of International Law* 34, no. 1: 181–201. doi:10.1017/S0922156520000655.

Gordon, K., J. Pohl and M. Bouchard. 2014, "Investment Treaty Law, Sustainable

Development and Responsible Business Conduct: A Fact Finding Survey”, *OECD Working Papers on International Investment*, OECD Publishing.

<http://dx.doi.org/10.1787/5jz0xvgx1zlt-en>

Horn, H., & Tangerås, T. 2021. Economics of international investment agreements. *Journal of International Economics*, 131, 103433.

<https://www.sciencedirect.com/science/article/pii/S0022199621000106>

Kabir Duggal, Rekha Rangachari, Kanika Gupta, 2021. Consequences of crisis and the great re-think: COVID-19’s impact on energy investment, sustainability and the future of international investment agreements, *The Journal of World Energy Law & Business*, Volume 14, Issue 3, Pages 133–146,

<https://doi.org/10.1093/jwelb/jwab015>

Lena Ajdacic, Eelke M. Heemskerk, Javier Garcia-Bernardo. 2021. The Wealth Defence Industry: A Large-scale Study on Accountancy Firms as Profit Shifting Facilitators. *New Political Economy* 26:4: 690-706.

Lise Johnson; Lisa Sachs; Nathan Lobel, 2019. "Aligning International Investment Agreements with the Sustainable Development Goals," *Columbia Journal of Transnational Law* 58, no. 1: 58-120

Marshall, Fiona, Aaron Cosbey, and Deborah Murphy. 2010. *Climate Change and International Investment Agreements: Obstacles or opportunities?*. Winnipeg: International Institute for Sustainable Development

Simmons, Beth A. 2014. “Bargaining over BITs, Arbitrating Awards: The Regime for Protection and Promotion of International Investment.” *World Politics* 66, no. 1: 12–46. doi:10.1017/S0043887113000312.

Tamayo-Álvarez, Rafael. 2015. “How International Investment Agreements Can Better Contribute to Sustainable Development by Reflecting the U.N. Global Compact Principles.” *Advances in Sustainability and Environmental Justice* 16. Emerald Group Publishing Ltd.: 145–57.

doi:10.1108/S2051-503020140000016021.

Tarald Laudal Berge, Axel Berger, 2021. Do Investor-State Dispute Settlement Cases Influence Domestic Environmental Regulation? The Role of Respondent State Bureaucratic Capacity, *Journal of International Dispute Settlement*, Volume 12, Issue 1, Pages 1–41,

<https://doi.org/10.1093/jnlids/idaa027>

Ye, F. 2020. The impact of bilateral investment treaties (BITs) on collective labor rights in developing countries. *Rev Int Organ* 15, 899–921.

<https://doi.org/10.1007/s11558-019-09367-9>