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BALTIC JOURNAL OF LAW & POLITICS

A Journal of Vytautas Magnus University
VOLUME 15, NUMBER 4 (2022)
ISSN 2029-0454

Cite: *Baltic Journal of Law & Politics* 15:4 (2022): 1016- 1022
DOI: 10.2478/bjlp-2022-004092

International Trade and its Impact on Climate Change

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Received: August 8, 2022; reviews: 2; accepted: November 29, 2022.

Abstract

Any further emission of greenhouse gases (GHG) into the atmosphere will have an impact on the global climate. Sea levels are expected to rise faster as a result of higher global surface temperatures and altered weather patterns, which will also cause more prevalent high temperatures and longer-lasting heat waves in some parts of the world. Analysis of the effects of globalisation on climate change is the primary motivation for this study. The study's secondary aim is to assess the potential effects of climate change damage on international trade in the coming decades and suggest ways to safeguard both trade and the environment. Empirical research, or research that does not adhere to any particular body of doctrine, is the focus of this investigation. There is discussion of both primary and secondary sources, and a wide variety of secondary references (books, articles, research papers, etc.) were consulted. The Pearson chi-square table and cross tabulation count are the primary tools for calculating or analysing the results, and the survey method is the focus of this research. Data is gathered through surveys and questionnaires filled out by actual humans. Out of a total of 1500 responses, the majority (411) of respondents "disagreed" with the aforementioned statement, representing a significant finding of this study. Over three-hundred-fifteen respondents, or nearly two-thirds, "strongly disagreed" with the statement. Three-quarters (152 of 308) of respondents "agreed" with the statement. A slim majority (32 respondents) "strongly agreed" with the statement, while the vast majority of respondents (114) took no stance on the matter. To avoid unnecessary barriers in the pursuit of various policy options, offset some of the worst climate damages, and relieve the burden on the most vulnerable economies, this study concludes that climate policies and trade policies could be aligned.

Keywords

Trade, Environment, Climate change, Greenhouse gas emission, Atmospheric effects, Globalisation.

INTRODUCTION

Continuing to release greenhouse gases (GHG) will have effects on the atmosphere that will change the climate system. Higher global surface temperatures and changes in weather patterns are expected to speed up the melting of glaciers, which will cause sea levels to rise¹. These changes will also cause temperature extremes and heat waves that last longer in some parts of the world. These effects will have big effects on the economies of many places around the world, causing big changes in production, consumption, and international trade.

Recent analysis of this research shows that the trend of economic integration and increased global trade will continue in the future, but at a slower rate than in the last few decades. In the long run, transportation and communication costs (including "transaction costs"), income growth and changes in preferences, sectoral comparative advantage in the production of goods and services, and trade policies and trade agreements affect the size of global trade and how it compares to global income. Changes in each country's specialisation depend on how these drivers vary from country to country. The products that a country specialises in depend on what kinds of raw materials are available and what kinds of technologies it has access to. As a result, the uneven distribution of natural resources around the world is a big reason why people specialise.

Some of these things will be changed by climate change, which will change trade and specialisation patterns in different ways. Some effects of climate change, like more frequent extreme events or rising sea levels, will have direct effects on trade because they will change the way goods are moved and sold. Also, changes in an economy's factors of production (land, labour, and capital) will have an effect on its production structure and trade specialisation. But climate change is also expected to have indirect effects on trade, since all regions and sectors are linked through the goods and services that are used to make things and the trade of those things. The main goal of this study is to look at how international trade affects climate change.

Objectives

The primary goal of this study is to examine the effects of international trade on climate change. The secondary goal of this research is to examine how climate change damages may impact international trade in the coming decades and to propose some measures to protect both trade and the environment.

Hypothesis

Null hypothesis: There is no significant relationship on trade and emissions.

Alternative hypothesis: There is a significant relationship on trade and emissions.

The main international treaty to combat climate change is the United Nations Framework Convention on Climate Change (UNFCCC), which was signed in 1992. Its goal is to keep dangerous man-made interference with the global climate system at bay. The EU and all of its member countries are among the Convention's 197 signatories.

The Paris Agreement will be the greatest achievement of international climate law in 2020. It directs global climate action over the next several decades. Countries agreed to keep global warming below 2 degrees Celsius above pre - industrial times, preferably closer to 1.5 ° C. European Union emissions trading scheme. The EU Emissions Trading Scheme is the European Union's climate change policy tool, which helps industries to cut their CO₂ emissions in an effective way. It requires a cap on emissions for all large CO₂ emission sources. In general, EU ETS information has been used by EU Member States as one input for calculating total CO₂ emissions for the energy and industrial processes sectors in this report. However, an explicit quantification of the contribution of the EU to total CO₂ emissions at sectoral and sub-sectoral level is not yet available. 26 Conference of parties (CoP) until today plays a vital role in protecting the environment from climatic change by imposing restrictions on states to reduce emission. Almost all climate scientists agree that greenhouse gas (GHG) emission increases have contributed to observed climate change and that continued increases in GHG emissions will contribute to future climate change. Although a variety of efforts seeking to reduce GHG emissions are currently underway on the international level and in individual states or regional partnerships, federal policymakers and stakeholders have different viewpoints over what to do if anything about GHG emissions, future climate change, and related impacts. For policymakers considering actions to reduce GHG emissions, various policy instruments are available. Over the last 15 years, many legislative proposals have involved market-based approaches, such as a GHG emissions cap- and-trade system or a carbon tax. These particular approaches may be considered in the 116th Congress and are discussed below. The information below provides an overview of two approaches while briefly

addressing their similarities and differences. Cap-and-trade and carbon tax instruments are market-based approaches that may be used to reduce GHG emissions. In many ways, a cap-and-trade program and carbon tax would produce similar effects. Both would place a market price on GHG emissions (directly or indirectly), and both would increase the relative market price of more carbon-intensive energy sources, particularly coal, which generate greater emissions per unit of energy. This result could lead to the displacement of these sources with lower carbon-intensive sources, including renewables; spur innovation in emission reduction technologies; and stimulate actions that may decrease emissions, such as efficiency improvements.

Linking the Trade and Environmental Legal System

There is a clear and complicated link between the global economy and the environment. Climate change problems are becoming more and more connected to global economic integration. Every economic decision has an effect on the environment, and all of these decisions together change the climate of the whole planet. Under the principle of sustainable development, which is mentioned in the preamble of the WTO agreement, environmental laws cannot be separated from social and economic growth. Even though it's not mentioned in the GATT or WTO agreement, the link between trade and climate change is becoming more and more important².

As a whole, the world will continue to rely heavily on fossil fuels for the next few decades. With a growing economy and demand for energy, as well as a growing population, we will need to release more greenhouse gases in the future. This means that there is a link between international trade and a future agreement on global climate change, which could lead to a conflict between the Kyoto Protocol and WTO rules.

Effects of Climatic Change

As temperatures and emissions of greenhouse gases go up, the effects of climate change are likely to spread and get worse. For example, even with small increases in average temperature, it is expected that hurricanes, typhoons, floods, droughts, and storms will become more common and stronger. But these weather events are likely to happen in many different places and at different times, and their effects will depend a lot on how vulnerable populations or ecosystems are³. The effects of future climate change will hurt developing countries and their poorest and most marginalised people the most. This is because developing countries and their poorest and most marginalised people are less able to adapt than developed countries and their poorest and most marginalised people. Climate change risks add to the other problems these countries already have to deal with, such as fighting poverty, improving health care, making sure there is enough food, and making it easier to get energy. For example, climate change is expected to make it harder for hundreds of millions of people to get water or to drink water that isn't of good quality. This will cause more health problems⁴. As Climate change is the biggest, most complicated, and least certain environmental problem there is. One of the main causes of acidification is the release of sulphur dioxide, which comes from flaws in fossil fuels. Sulfur is a bother and an externality at the same time. But thermal energy is made by breaking the chemical bonds in carbohydrates (like oil) and turning them into CO₂ and H₂O. That is, burning fossil fuels always produces CO₂. In the same way, methane (CH₄) emissions are needed to keep hydrogen from building up in anaerobic digestion. Methane emissions are needed to make beef, milk, and rice. Because of this, greenhouse gas emissions are a key part of how we grow food and make energy. There's no easy way out. Greenhouse gas emissions also come from a wider range of places than any other environmental problem. Every business, farm, and home puts some greenhouse gases into the air. The effects are just as widespread. The weather has a direct effect on agriculture, energy use, health, and nature, which in turn has an effect on everything and everyone. In fact, it's not impossible that some of the reason poor countries are

poor is because they are hot. The ozone layer getting thinner is another global externality, but its causes are more local. Climate change has many different causes and effects, and those who do the least to cause it are the most at risk. Because of this, climate change is not just a problem of efficiency; it is also a problem of fairness. Since the status quo is an externality that isn't fair, the Coasian separation of equity and efficiency isn't very useful. Another long-term problem is climate change. Some greenhouse gases stay in the air for tens of thousands of years, and a small amount of carbon dioxide will stay there almost forever. In this way, greenhouse gas emissions are like nuclear waste, but the amounts are too big for the containment method used to store radioactive waste. Lastly, there are a lot of unknowns about climate change. In fact, there are so many unknowns that the usual tools for making decisions when there are a lot of unknowns and learning may not work. As a result of all of these problems coming together in the form of greenhouse gases, climate change is one of the most intellectually difficult problems we face today⁵.

MATERIALS AND METHODOLOGY

The study deals with empirical research i.e., non-doctrinal study. It deals with both primary as well as secondary sources of data and various secondary sources like books, articles, research papers etc. were used as reference. The study deals with survey method and the main tool for calculating or analysing the results in Pearson chi-square table and the cross tabulation count. The method of collecting is through direct survey method by people's opinion and answers to the questionnaires.

Hypothesis

Null hypothesis: There is no significant association between education and globalisation.

Alternative hypothesis: There is a significant association between education and globalisation.

TABLE 1:

Count					
		whether globalisation helps or in achieving the best trade off between environmental and economic goals?			Total
		Yes	No	Maybe	
EDUCATIONAL QUALIFICATIONS	SSLC	59	4	3	66
	Higher Secondary	65	16	52	133
	UG	349	139	100	588
	PG and Higher	73	66	98	237
Total					

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	123.899 ^a	6	.000
Likelihood Ratio	130.202	6	.000
Linear-by-Linear Association	45.542	1	.000
N of Valid Cases	1024		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 14.50.

According to the above Table 1 results, out of (1500) responses, the majority of respondents (546) said "yes" globalisation aids in achieving the best trade-off between economic, environmental, and economic goals. Second, the majority of respondents (253) said it might help, while others (225) said "NO." And, based on the above chi square table, the chi square value is less than 0.05 percent, which equals 0.00 percent, proving the null hypothesis of this study.

Hypothesis

Null hypothesis: There is no significant association between education and trade emissions.

Alternative hypothesis: There is a significant association between education and trade emissions.

TABLE 2:

Crosstab							
Count							
		Do you agree that the emissions increase when countries trade increases?					Total
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
EDUCATIONAL QUALIFICATIONS	SSLC	7	0	4	34	21	66
	Higher Secondary	0	11	11	50	61	133
	UG	13	125	57	294	99	588
	PG and Higher	12	16	42	33	134	237
Total		32	152	114	411	315	1024

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	228.977 ^a	12	.000
Likelihood Ratio	246.972	12	.000
Linear-by-Linear Association	.003	1	.959
N of Valid Cases	1024		
a. 2 cells (10.0%) have expected count less than 5. The minimum expected count is 2.06.			

According to the above table 2 results, out of 1500 responses, the majority of respondents (411) "disagreed" with the above statement. The statement was "strongly disagreed" by the majority of respondents (315). The given statement was "agreed" by the third majority of respondents (152). The fourth majority of respondents (114) are neutral on the given statement, while the remaining 32 are "strongly agreed." And, based on the above chi-square table, the chi-square value is less than 0.05 percent, which equals 0.00 percent, proving the null hypothesis of this study. According to the above Table 1 results, out of (1500) responses, the majority of respondents (546) said "yes" globalisation aids in achieving the best trade-off between economic, environmental, and economic goals. Second, a majority of respondents (253) said it might help, while others (225) said "NO." This report also considers whether open countries in general (via a "race to the bottom" in environmental regulation) or specific countries ("pollution heavens") have harmed environmental and economic goals. Such effects are theoretically possible, but empirical studies of other reports find no negative effects of trade on some measures of environmental degradation, such as SO2 air pollution, when income is controlled. Thus, globalisation and the environment do not have to be at odds. According to the above table 2 results, out of 1500 responses, the majority of respondents (411) "disagreed" with the above statement. The statement was

"strongly disagreed" by the majority of respondents (315). The given statement was "agreed" by the third majority of respondents (152). The fourth majority of respondents (114) have a neutral opinion of the given statement, while the remaining 32 respondents "strongly agreed" with the statement. This study discovered that if emissions occur through trade, market failure can occur due to missing markets. In the past, there was no market to trade and enforce environmental property rights. Carbon trading aims to create an incentive to reduce pollution, and only a cap on emissions is permitted. The cap creates the scarcity that the market requires at the end of each year, when installations must ensure they have enough allowances to account for their installations' actual emissions.

CONCLUSION

It is hard to make a realistic prediction of how trade will flow between countries in many parts of the world decades from now. Adding information about the economic effects of climate change makes things even more complicated. There are a lot of unknowns about these projections and no one is sure. This paper only looked at one realistic scenario for what might happen in the future. This is done to show how climate change will affect trade and to shed light on the mechanisms at work. For more reliable quantitative insights, the modelling analysis needs to be more detailed, with multiple scenarios for the main modelling assumptions, comparing different models, and a risk-based framework, if possible. This paper doesn't talk about that. Still, a few general ideas come out that are less dependent on the exact model specifications and are worth pointing out. In this report, the modelling analysis could not include any direct effects of climate change on international trade. But this could be taken further if reliable information became available about, for example, the change in overall costs from climate impacts on international sea, air, and land transport, or more specifically, the change in transportation costs from opening up the Arctic shipping route. Especially the second one, it would be best to work closely with the International Transport Forum on it (ITF). Even if trade policies aren't used to reduce pressure on the climate system, harmful barriers to adapting to climate change can add up to big costs and make damages and risks from climate change worse. To make sure that least-cost adjustment mechanisms work well, it is important that policies don't have parts that are completely different from each other. So, climate policies and trade policies could be coordinated to avoid putting up unnecessary barriers to different policy options, make up for some of the worst effects of climate change, and lighten the load on the economies that are most at risk.

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