

The Wealth Effect in WTO Dispute Settlements: Analysing International Economic Law as a Normal Good

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Abstract:

The objective of the article is to introduce a theoretical endeavor aimed at evaluating the potential validity of empirical results within the realm of economic theory. The existing literature and empirical evidence indicate that wealthier participants within the World Trade Organization exhibit a propensity for regular engagement with dispute settlement mechanisms in the field of international economic law. This uneven pattern of utilization of the dispute settlement mechanism implies that the global institution, serving as a provider of global public goods within an economic context, assumes attributes akin to a normal good. Accordingly, the article attempts to answer the question: What theoretical basis explains why wealthier countries in the World Trade Organisation engage more frequently in dispute settlement mechanisms under international economic law, and how does this reflect the characteristics of international economic law as a normal good in the context of global public goods? This article employs a methodology that combines literature synthesis with pay-off matrix analysis to examine the dynamics of dispute settlement among member countries of the World Trade Organisation with varying economic power. This methodological approach seeks to foster comprehension of the empirical patterns. The analysis finds that the discrete nature of the global public good results in its normal characteristics.

The article concludes that addressing the disparities in engagement with dispute settlement mechanisms is essential for the World Trade Organisation to meet the demands of its member countries and effectively provide global public goods.

Keywords: Global Public good, game theory, developing countries

Introduction

This article presents a theoretical exploration aimed at investigating the potential validity of empirical findings in extant knowledge in the field of economic theory. The empirical results of scholarly works suggest that wealthier countries within the World Trade Organization (WTO) exhibit a higher propensity for engaging in dispute settlement mechanisms (DSM) utilizing international economic law (IEL), while the non-rich countries outnumber the richer nations do not resort to the DSM. This uneven pattern of utilizing the IEL at the WTO suggests that this global institution, which serves as a provider of global public goods (GPG) within an economic context, assumes attributes that resemble those of a normal good.

This paper contributes to the academic discourse on GPG and its implications for IEL. It underscores the complex nature of these goods and highlights how their discrete characteristics can impact the behavior of member countries within multilateral institutions like the WTO. This is done by answering the main research question: “What theoretical substantiation underpins the observed pattern of wealthier countries within the WTO engaging more frequently in dispute settlement mechanisms utilizing international economic law, compared to non-rich countries, reflect the characteristics of IEL as a normal good within the context of global public goods provision?”

1.1 Background

The year 1947 saw a remarkable change at the global level, the foundation of the General Agreement on Trade and Tariffs (GATT), started a new era of globalisation as it aimed to foster trade among the member countries and to provide transparent trade barriers for a smoother flow of trade. The GATT formed the basis of IEL, which was a supra-governmental, multilateral organisation for the greater good of free trade in goods. After years of negotiation rounds, to keep the GATT relevant the cooperation was continued in the establishment of the WTO in 1995. The WTO as of today has 164 member countries. The establishment of the WTO in 1995 covered many new aspects including trade in services and a well-defined time-bound judicial process for the trade disputes of the dispute settlement body (DSB). DSB plays a vital role in ensuring the organization's sustainability by providing a mechanism to address measures that deviate from the principles of free and transparent trade for all member countries (WTO, 2024).¹

If a member country of the WTO identifies a breach of the IEL, it may file a request for consultation at the dispute settlement mechanism of the WTO. A decision to initiate a dispute is a political decision, that takes place at the national macro level. The corporate business entity in question finds itself at the meso level and the IEL gets applied at the multi-lateral level at the WTO. Thus, the initiation of a dispute at the WTO is an interdisciplinary phenomenon of political involvement, economic necessity, and legal procedures.²

At around the same time as the establishment of the GATT, in the late 1940s and 1950s, a group of Latin American economists at the newly formed Economic Commission for

¹ WTO(2024) https://www.wto.org/english/thewto_e/thewto_e.htm . Accessed March 2024

² WTO (2024) https://www.wto.org/english/tratop_e/dispu_e/dispu_e.htm.

Latin America (CEPAL)³ in Santiago put forward a different idea about economic development. They noticed that the terms of trade for less developed countries were getting worse, meaning they were not getting fair deals for their primary goods. Unlike other beliefs at the time that focused on industrialization as the solution, these economists considered a more complex approach that looked at the well-being of the general population and challenged traditional international economic trade theories. This new perspective came at a time when international relations were changing, and there was a growing belief in the idea of "salvation" through development. People thought that if a country like Colombia could develop successfully, it could serve as a model for other economically less-developed nations. The post-World War II era brought about new international organizations like the International Monetary Fund and the World Bank, which aimed to guide and support economic growth. The economists at CEPAL in Latin America offered a different view, emphasizing the importance of considering the living standards of the masses and challenging established economic theories (Escobar, 2012).

These ideas were offbeat rather than Western mainstream and played hardly any role in establishing multilateral organisations such as the GATT. The GATT evolved in various negotiation rounds⁴ to mend the systematic flaws to serve and to cater the all member countries including the non-rich countries in a better way. In none of these rounds, this alternative idea of development took any serious shape.

Pioneering research by Horn, Mavroidis, and Nordström (1999) delved into the determinants of dispute initiations within the WTO, displaying the skewed utilization of the DSB by affluent nations. They attributed this phenomenon to the high export intensity in terms of value and diversity. Subsequent studies have further expanded upon their work, enriching not only the existing literature but also ascribing the range of new factors contributing to the incidence of disputes at the WTO.

Despite the significant growth in trade for least developed countries (LDCs) in terms of exports and imports of intermediate goods, from 2000 to 2012, the results show a contrary trend in the initiation of trade disputes by LDCs at the the dispute settlement unit (DSU). The LDCs form 20% of the total members of the WTO. Developing countries are according to the OECD definition: all countries excluding the high-income countries⁵. The exports and imports of intermediate goods of LDCs, registered an average growth of 15.5% and 14% respectively during the period 2000-2012. With this the average growth in exports and imports, the LDCs supersede the world average (Escaith & Tameru, 2013). For comparison, the corresponding exports of developing

³ Full form of CEPAL: Comisión Económica para América Latina y el Caribe.

⁴ Geneva Round (April 1947) – GATT, Annecy Round (April 1949) – Tariff Concessions. Torquay Round (September 1950) – Cut in tariff levels. Geneva II Round (January 1956) Torquay (1950-51), Geneva, Dillon (1960-61) -, the Kennedy Round (1964-67), the Tokyo Round (1973-79); the last and largest was the Uruguay Round (1986 to 1994).

⁵ The WTO does not have a list of least-developed country members; it recognizes the countries that are designated by the UN. At the time of writing, there are 48 countries recognized by the UN out of which 34 are WTO members: Angola, Bangladesh, Benin, Burkina Faso, Burundi, Cambodia, Central African Republic, Chad, Congo, Democratic Republic of the Djibouti, Gambia, Guinea, Guinea Bissau, Haiti, Lao People's Democratic Republic, Lesotho, Madagascar, Malawi, Mali, Mauritania, Mozambique, Myanmar, Nepal, Niger, Rwanda, Senegal, Sierra Leone, Solomon Islands, Tanzania, Togo, Uganda, Vanuatu, Yemen, Zambia (https://www.wto.org/english/thewto_e/whatis_e/tif_e/org7_e.htm).

economies increased on average by 12% per year during this period.

The literature review shows that the operational definition of the term legal capacity boils down to the indicators related to the Gross Domestic Product (GDP). Horn, Mavroidis, & Nordström (1999) have used the number of staff working in Geneva or the number of embassies. They take the number of representatives at the WTO as a proxy for the legal capacity. The data is therefore a simple headcount of the number of delegates listed in the WTO phone directory. Horn, Mavroidis, and Nordström (1999) note “[w]hile there seems to be some correlation between GNP/capita and the propensity to file complaints, this crude proxy for legal capacity does not yield any significant relationship at the 95%.” Guzman and Simmons (2005) include other proxies such as the number of embassies abroad. Besson & Mehdi (2004) use the gap in the number of representatives between the developed and developing as a measure of legal capacity. Busch, Reinhardt & Shaffer (2009) propose the much-wanted construction of an index of legal capacity by considering among other things, the experience in handling general WTO matters. Nonetheless, the literature shows that none of the variables used as a proxy for the legal capacity has shown noteworthy results consistently. However, the GDP-related variables form an exception to this. The studies have provided evidence that the GDP and the enforcement of the contract through a legal system are positively related (Magee, 2010). The work of Kaufmann, Kraay & Mastruzzi, 2011 shows that the GDP is strongly and positively associated with the rule of law. Bown (2005) takes the GDP of exporters as a proxy for their capacity to absorb legal costs; he explains that a positive GDP and the significance of market access and exporter’s share in the respondent market are evidence of the power mechanism at work. Davis and Bermeo (2009) support the legal capacity hypothesis, by connecting it to the emerged significance of previous experience. Reinhardt (2000) interprets negative GDP in terms of power. Guzman and Simmons (2005) find that retaliatory power has no significant effect on defendant selection in WTO disputes; they explain negative GDP in favour of the legal capacity hypothesis.

To summarise the introduction, this article delves into the utilization of DSM within the WTO and its correlation with economic status, highlighting a tendency for wealthier nations to engage in such mechanisms more frequently. The paper suggests that the WTO, as a provider of GPG in the economic realm, functions similarly to a normal good, with utilization patterns reflecting economic disparities among member states. It also explores the historical context of economic development theories, particularly focusing on Latin American perspectives that emphasized holistic development approaches over industrialization. Despite significant growth in trade for LDCs, their engagement in WTO dispute settlement remains disproportionately low, indicating complex dynamics within the institution. Additionally, the article reviews various proxies for legal capacity, with GDP-related variables consistently showing a positive relationship with the propensity to engage in WTO disputes, suggesting economic factors play a significant role in legal capacity and engagement within the WTO framework.

The article is built up as follows: the next section will provide the epistemological foundation. Section 3 will deal with the theoretical framework. Section 4 presents findings and section 5 concludes.

2) **Epistemological foundation**

The DSU in the WTO plays a crucial role in ensuring a fair and predictable trading system among member countries. It provides a means to resolve trade disputes peacefully, promotes compliance with trade rules, and fosters economic stability and growth. It serves as a cornerstone for maintaining the integrity and effectiveness of the multilateral trading system.

Firstly, the DSU helps to prevent and resolve conflicts that arise between member countries. Disputes in international trade can arise from various reasons, such as differing interpretations of trade agreements, non-compliance with obligations, or unfair trade practices. The mechanism provides a forum for countries to present their claims, engage in dialogue, and seek resolution through a structured and impartial process. By offering a transparent and rule-based system with time-bound framework procedures, it reduces the risks of escalating disputes into trade wars or retaliatory measures, thereby preserving stability in the global trading system (WTO, nd)⁶. Secondly, the DSU serves as a mechanism for enforcing trade rules and ensuring compliance with WTO obligations (Article 1: Coverage and Application)⁷.

Without an effective means of resolving disputes, countries may be inclined to engage in protectionist measures, such as imposing unjustified trade barriers or discriminatory practices. The existence of a well-functioning dispute settlement mechanism strengthens the credibility and enforceability of the WTO rules, providing member countries with the confidence that violations will be addressed and remedied. This, in turn, encourages adherence to the agreed-upon rules, fosters a level playing field for all participants, and promotes fair and open trade.

Moreover, the dispute settlement mechanism contributes to the overall predictability and certainty of the trading system. By providing a clear and transparent process for resolving disputes, it reduces the uncertainty and risks associated with international trade. When member countries have confidence in the availability of a fair and impartial mechanism to address trade disagreements, they are more likely to engage in trade with each other and make long-term investments. This predictability creates a conducive environment for economic growth, investment, and job creation, benefiting all member countries.

Furthermore, the DSU plays a vital role in clarifying and interpreting the provisions of the WTO. Through the resolution of disputes, it helps to establish precedents and legal interpretations that guide future trade interactions. This contributes to the development of a body of jurisprudence that enhances legal certainty and consistency in trade relations. The mechanism also facilitates the identification of gaps or ambiguities in trade agreements, thereby encouraging member countries to engage in negotiations and updates to address emerging issues⁸.

⁶ https://www.wto.org/english/tratop_e/dispu_e/dispu_e.htm Annexure 2: Understanding on rules and procedures governing the settlement of disputes: retrieved from https://www.wto.org/english/docs_e/legal_e/28dsu_e.htm

⁷ WTO Article 1 https://www.wto.org/english/docs_e/legal_e/28-dsu_e.htm.

⁸ Article 3 of the General provisions of the DSU “It is understood that requests for conciliation and the use of the dispute settlement procedures should not be intended or considered as contentious acts and that, if a dispute arises, all Members will engage in these procedures in good faith to resolve the dispute. It is also understood that complaints and counter-complaints regarding distinct matters should not be linked.”

The epistemological foundation underlying the accessibility of a global public good (GPGs) to all member countries can be examined within the framework of academic discourse. In the context of accessibility, the epistemological foundation focuses on the principles and mechanisms that facilitate equitable access to relevant international economic law resources and opportunities for all individual member countries, regardless of their economic development and or political status.

The accessibility of GPGs in the context of the WTO, such as the services of the dispute settlement mechanism, to all members, is grounded in the principles of egalitarianism and inclusivity⁹. This principle advocates for the equitable distribution of resources and opportunities to ensure that no individual country or group of member countries is disadvantaged or marginalized based on their economic or any other background.

The need to involve the poorer members was recognised, hence the establishment of the Advisory Council on WTO Law (ACWL) in 2001 was an outcome “For countries with inadequate human and financial resources, that knowledge is difficult to acquire. WTO law consists of a complex web of over 20 agreements, which – together with the attached Member-specific schedules of concessions and commitments – cover more than 20,000 pages. WTO law also includes the General Agreement on Tariffs and Trade of 1947 (GATT), all the decisions adopted by the Contracting Parties to the GATT and the jurisprudence of the adjudicative bodies of the GATT and the WTO, contained in over 300 reports.” Also one of the reasons why the establishment of the ACWL in 2001 with the mission “to provide developing countries and LDCs with the legal capacity necessary to enable them to take full advantage of the opportunities offered by the WTO.” On the 10th anniversary of ACWL the former WTO Director-General Pascal Lamy has said that “by ensuring that the legal benefits of the WTO are shared among all Members, the ACWL contributes to the effectiveness of the WTO legal system, in particular its dispute settlement procedures, and to the realisation of the WTO’s development objectives)¹⁰.”

From an epistemological standpoint, ensuring accessibility involves removing trade barriers that impede equal participation and fostering an environment that recognizes the value of diverse trade systems and integration in the global systems and the relevant knowledge capacity and skills to participate in global activities. This has been acknowledged and taken care of by special provision (Article 24: Special Procedures Involving Least-Developed Country Members). In Practice, this requires addressing physical, financial, informational, and barriers that may hinder access to international economic law resources.

The principles of the trading system include trade without discrimination among the member countries, free trade, and fair competition(WTO principles, 1995)¹¹. The

⁹ Wolff, the Deputy Directors-General (DDG) of the WTO stated: “Equality is an unstated principle of the WTO. All WTO Members have an equal right to speak, vote (although operating by consensus has eliminated voting, and instead gives each the unspecified right to join, abstain, or block a consensus), and table proposals. All countries regardless of size have a right to demand support from the Secretariat for such activities that they wish to pursue at the WTO. Moreover, the principle of equality conveys with it the concept of inclusiveness, often cited as one of the hallmarks of the organization.”(May, 2020).

¹⁰ Lamy in het Speech on 4 October 2011.

¹¹ WTO principles, 1995, The Principles of the trading system

epistemological foundation behind the accessibility of global public good, such as dispute mechanism, in academic language revolves around the principles of egalitarianism, inclusivity, and the recognition of trade as a transformative resource and international economic law as a facilitating role. It entails removing barriers, embracing diversity, and fostering inclusive global practices to ensure that all members have equal opportunities to engage in the pursuit of transparent and free trade and contribute to global connectivity.

The empirical¹² evidence can be seen in Figure 1, which displays real GDP vs. annual and cumulative disputes. It takes into account all the bilateral disputes from 1948-2016. It shows a positive relationship between the GDP of the dispute initiators and the number of disputes initiated. Thus, the question that arises in a member-driven global organization such as the WTO that provides GPG is what could be the theoretical foundation for the display of normal good characteristics of the IEL.

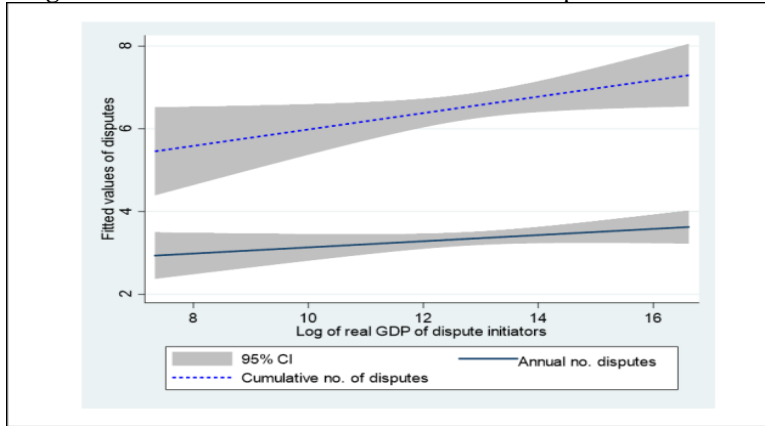
To gain a deeper understanding of the empirical data related to the initiators and respondents in trade disputes, we will analyze the crosstabulation presented in Table 1. This table examines the relationship between two categorical variables, "ComIncome" (referring to the income category of the complainants) and "ResIncome" (indicating the income category of the respondents). Each cell in the table represents the count of observations falling into specific combinations of these income categories. The row totals correspond to the overall count for each category of "ComIncome," which includes High, Upper-middle, Lower-middle, and Low-income countries (H, UM, LM, L). Meanwhile, the column totals represent the total count for each category of "ResIncome" (H, UM, LM, L). In total, there are 838 unique¹³ trade disputes considered in this analysis.

https://www.wto.org/english/thewto_e/whatis_e/tif_e/fact2_e.htm . Last accessed January 2024.

¹² The empirical evidence is based on the use of gravity equations to understand bilateral trade patterns and exemplifies the beneficent roles of empirical regularities in guiding theory development and theory in guiding estimation (Head and Mayer,2013).

¹³ Unique in the sense of bilateral pairs corresponding to the year and act of dispute initiation relation. The EU is not split into the different European countries to provide a more unbiased picture as except for two countries (Bulgaria and Romania) most of them have a status of high-income countries. However, in 2022 these two countries also have been marked as High-income countries.

Figure 1: Real GDP vs. annual and cumulative disputes¹⁴ 1948-2016



(source: author)

Examining the cell in the first row and first column, which has a count of 335, we find that there are 335 instances where H countries have initiated disputes against other H with "ResIncome" also being H). Similarly, the cell in the second row and first column, with a count of 19, indicates 19 instances where "ComIncome" is L and "ResIncome" is H.

Table 1: Income Status of the Disputant Countries 1948-October 2023¹⁵

		ResIncome				Total
		H	UM	LM	L	
ComIncome	H	335	94	49	21	499
	UM	97	37	29	0	163
	LM	110	19	16	2	147
	L	19	5	3	2	29
Total		561	155	97	25	838

(source: author)

It is important to note that there are only 2 observed dispute cases in the L category, suggesting a relatively infrequent occurrence of trade disputes involving countries with low-income status. Conversely, there is a noteworthy concentration of cases in the LM category, with 147 instances falling into this classification. The UM¹⁶ category also demonstrates a substantial presence, with 163 cases distributed across various levels of respondents' income. The question arises whether Figure 1, provides evidence that IEL is a normal good. Moreover, the data in Table 1 suggests that High-income countries often take the initiative in trade disputes, potentially implying a higher demand for international economic law among such countries. On the other hand, lower-middle-income countries tend to target High-income countries more frequently. This pattern prompts the question of whether their actions are driven by a perceived

¹⁴ This figure is reproduced from the doctoral work of the main author. It appears as Figure 3.2 in thesis: Real GDP vs. annual and cumulative disputes. The period covers 1948-2016. The program STATA was used to create this figure.

¹⁵ It is based on author's own compilation and Excel is used to create this table.

¹⁶ Examples of Countries with UM status countries South America, Malaysia, or China since 2010.

need for IEL as well. In other words, does the demand for IEL tend to increase as income? This article aims to address a specific inquiry: What are the underlying theoretical concepts that could substantiate the empirical finding that shows normal good characteristics of usage of IEL?

This theoretical article aims to provide a conceptual explanation by identifying the key building blocks that will be used to substantiate the empirical behavior of IEL as a normal good.

2.2) Methods

The choice of methodology for a theoretical paper in this specific research question mentioned above is to check the theoretical validity of the empirical findings. As formulated in the introduction the question is “What theoretical substantiation underpins the observed pattern of wealthier countries within the WTO engaging more frequently in dispute settlement mechanisms) utilizing IEL, compared to non-rich countries, reflect the characteristics of IEL as a normal good within the context of GPG provision?” For this; A review of relevant concepts and the related literature review is crucial for establishing the theoretical foundation of this paper. This methodology involves thoroughly examining relevant existing theories, and models, related to the research question. By synthesizing and analyzing the extant literature, authors intend to identify the key concepts, and assumptions, relevant to the IEL and its usage at the WTO. This approach will help in developing an understanding of the empirical phenomenon observed about the usage of IEL at the WTO.

3) Theoretical framework

Classic economic theory is the starting point, as part of it, the concept of “good” is basic to understanding the nature of the different empirical data. However, it is necessary to organise different concepts that play a crucial for the understanding, in a conceptual framework. The construction of a coherent and logical framework allows us to define the key variables, relationships, and mechanisms underpinning the economic phenomena being studied.

Determining whether a global public good is a normal good or not can provide valuable insights into its usage patterns and implications for policy-making within the global institution (Kaul, 2003)¹⁷. The reason why it could be important is to ensure: “collective consumption good.” Public goods are defined in the philosophical encyclopedia¹⁸ [a good] which all enjoy in common in the sense that each individual’s consumption of such good leads to no subtractions from any other individual’s consumption of that good (Samuelson 1954: 387)¹⁹. In contemporary economics, goods

¹⁷ Kaul et al. (2003), suggest that Global public goods could be divided into three types of public goods. First, there are public goods that cannot be made excludable, either because they are inherently indivisible or because the cost of division would be prohibitive. <https://plato.stanford.edu/entries/public-goods/#DefiPublGoodDistBetwDiffKindPublGood>.

¹⁸ Stanford Encyclopedia of Philosophy accessed from good <https://plato.stanford.edu/entries/public-goods/>

¹⁹ Samuelson P. A. (1954) <https://www.jstor.org/stable/1925895>; journal article The Pure Theory of Public Expenditure Paul A. The Review of Economics and Statistics Vol. 36, No. 4 (Nov. 1954), pp. 387-389 (3 pages); Published By: The MIT Press.

are usually defined as public goods if and only if they are both non-rivalrous and nonexcludable (Varian, 1992).

There are two main types of goods in this category. The first is rival and nonexclusive, often called common pool resources. Because these goods are innately rival, intensive use can threaten their sustainability. The solution is often to make such goods more exclusive, though not entirely so. New counterpart private goods such as pollution permits are often invented to manage the use of these resources. In countries with air pollution controls, for example, the atmosphere is still available for the general public to enjoy. However, it can no longer be used excessively as a pollution sink by firms, which must now buy privately held and tradable pollution permits. The second type of goods in this category includes basic education and health care—public goods that can be made entirely private but are often made nonexclusive by policy choice. This definition has been advanced taking into account the deliberate choices of government policies that could change the good from being private to public and public to private. For example, Education (Kaul & Mendoza, 2003) figure¹³. However, it is not the definition or the distinction between private and public goods that is at the core.

Understanding whether a global public good behaves as a normal good should be able to help in the dynamics of a global public good. If it is a normal good, its demand is expected to increase as incomes rise, implying that the member countries' governments are willing to consume more of it as they become wealthier. This knowledge can be useful in forecasting demand and designing appropriate strategies to meet the increasing need for the good. At the same time helping to ventilate the grudges of less wealthier member states who do not use DSB does not mean that they have no issues.

3.1) Concept of Global public goods

The theoretical argument would be based on the income elasticity of demand, which measures the responsiveness of the quantity demanded of a good to a change in income. The concept of a normal good is based on the income elasticity of demand, which measures the percentage change in quantity demanded resulting from a 1% change in income. Normal goods have a positive income elasticity of demand, meaning that as income increases, the quantity demanded of the good increases as well. However, for public goods, this distinction can be vague as argued by Jurion in 1978, where he proposes that the demand for societal services may decrease as a result of an increase in income even when the goods are normal²⁰.

The concept of GPG was developed by economists and scholars, to describe goods or resources that have characteristics of non-excludability and non-rivalry at the global level. While the exact originator of the concept is not attributed to a single

²⁰ The article dealt with the question of the possibility of public goods being inferior. when the costs are experienced by a consumer in terms of displeasure due to congestion costs to a consumer rise with the consumer's income. This can be for a normal good with a low-income elasticity of demand (irrespective of the congestion costs due to the non-excludable nature of the good) will show the same effect.

individual, this concept has been widely discussed and refined by various researchers and policymakers²¹.

It's important to note that the provision of GPG faces challenges due to free-rider problems, where individuals or countries may benefit from the goods without contributing their fair share. The global nature of these goods requires international cooperation and collective action to ensure their provision and sustainability.

Another theoretical framework that supports the notion of IEL as a normal good is the concept of legal sophistication. As firms in developed countries engage in cross-border trade and investment, they become more aware of the legal breaches and opportunities availed by the use of DSB. This awareness leads to a growing demand for legal services related to IEL, which is likely to increase as incomes rise and firms in developed countries become more sophisticated in their infrastructure to identify the breach and address the national authorities for filing a consultation request²².

The developed countries use more non-tariff measures or invisible barriers of trade that are more complicated to identify and prove as being trade barriers. As early as 1995, Hoekman and Kosteki mentioned the widespread usage of the fineness and the scope of trade restrictions that are much beyond tariffs in the trade policies of developed countries. This argument forms the core issue of the legal capacity hypothesis which is supported (Davis & Bermeo, 2009) and Guzman and Simmons (2005). Empirical support for this can be found for example, in a report by the International Trade Centre in 2015 brought out survey results across 23 countries that suggest that a majority of companies are affected by nontariff measures namely in less developed countries, and add that for agricultural products, "developed countries are perceived as comparatively more nontariff restrictive than other markets." Additionally, a joint report by UNCTAD and the World Bank in 2018 concludes that "countries with a higher level of GDP per capita tend to regulate a larger share of their trade and use more NTM²³s per regulated product."

The demand for IEL is also driven by the increasing complexity of international economic relations, which requires legal frameworks that can accommodate the diverse needs and interests of different actors. As such, governments and businesses need to invest in legal services related to IEL to ensure that they can navigate the complex legal landscape of international economic relations. This further strengthens the argument that IEL is a normal good. The income elasticity of demand, legal sophistication, and the increasing complexity of international economic relations all suggest that the demand for legal services related to IEL is likely to increase as incomes rise.

²¹Inge Kaul, a German economist is one of the most prominent names, who coedited the book *Global Public Goods: International Cooperation in the 21st Century*. Moya Chin, from IMF, Economist among others.

²² The national authority of the member states files official requests at the DSB and not the firms.

²³ NTM stands for Non-tariff measures.

3.2) Is IEL a good from an Economics point of view?

Adam Smith (1776) expanded this thought by arguing that any economic activities directly related to material products (goods) were productive, and those activities that involved non-material production (services) were unproductive.²⁴ The term "good" is typically used in economics to refer to a tangible or intangible item that is produced and traded in the market to satisfy individuals' wants and needs (Gadrey, 2000). While the classic economists provided a great deal of attention to the distinction between the goods and services concept of a good primarily relates to physical products, it can also extend to certain intangible items or services that are exchanged for value. Hence, Hence, for example, Earth's atmosphere appears in both national and international arrangements to preserve it and in quadrant 4B because—clean or not—it is available to be consumed by all people.

Nonrival goods have experienced similar policy-induced shifts. Some scholars have expanded the standard definition of nonrival goods to include those that can be made available to additional users at minimal or no cost (Nicholson Kaul, Grunberg, and Stern (1999), in their book “Global Public Goods: International Cooperation in the 21st Century”, distinguished between three types of GPG:

- Natural global commons – the atmosphere.
- Human-made commons – the world's knowledge stock, universal norms, standards, etc.
- Policy outcomes – international market efficiency, financial stability, equity, peace and security, environmental sustainability, etc.
- Barrett (2007) offered another classification of global public goods related to how they are provided:
- Weakest links – the provision of this type of goods depends on the efforts of all countries, even those that can contribute the least. A typical example is the eradication of infectious diseases.
- Aggregate efforts - such public good can be provided only if every country cooperates. The most important example here is climate change.
- Single best efforts – only the efforts and resources of one key country (or a small group of countries) are necessary for the provision of the public good. A good illustration is research and development.

IEL is not derived from a single source or even several sources of law; it has its genesis in many. National, regional, and international law (public and private), policy, and customary practices are all components of IEL. It encompasses a wide spectrum of subjects including trade in goods and services, financial law, economic integration,

²⁴ However, he does not imply that they were non-economic activities. “Who serve under him, the whole army and navy, are unproductive labourers. They are the servants of the public and are maintained by a part of the annual produce of the industry of other people. Their service, how honourable, how useful, or how necessary soever, produces nothing for which an equal quantity of service can afterward be procured. The protection, security, and defence of the commonwealth, the effect of their labour this year will not purchase its protection, security, and defence for the year to come. In the same class must be ranked, some both of the gravest and most important, and some of the most frivolous professions: churchmen, lawyers, physicians, men of letters.....”(Smith 1776).

development law, business regulation, and intellectual property (Wenger, n.d.). However, when it comes to the member countries, it provides an authoritative guide to the interpretation and application of all of the WTO Agreements. The third edition covers from January 1, 1995, to September 2011. IEL is a system of rules and regulations that govern the member countries of the WTO concerning trade policy and dispute settlement mechanisms. It is a framework that establishes rights, duties, and obligations and provides a means for resolving disputes and maintaining order. IEL itself is not a physical or tangible product that can be bought or sold in the traditional sense. Therefore, from an economic perspective, the law is not typically considered a "good" in the same way as tangible goods or services. However, the usage of legal services, such as legal advice or representation, are considered economic services and can be classified as "goods" or "services" within the framework of economics. Legal professionals provide their expertise and assistance in navigating the legal system and upholding the law, which can be considered a service that is exchanged for value.

Kaul (2001) categorises, the "international trade regime" as the Global Public Good, while the law itself is not typically classified as a "good" in economics, certain legal services provided by professionals can be considered goods or services within the economic context.

3.3) The rationale of the equity among the members of the WTO

The following statements provide propositions to build the conceptual link between the normal goods and IEL.

The globalization of the world economy has led to a significant increase in international trade, making it a crucial component of economic growth and development. The WTO has played a pivotal role in facilitating international trade, and the increasing importance of trade underscores the significance of IEL in regulating trade and economic relations among countries.

Economic growth and development are critical factors that drive demand for goods and services. As countries experience economic growth, their share in international trade is likely to increase for IEL is likely to increase as well, given that trade and economic relations are central to the growth process. As such, IEL can be considered a normal good. As incomes rise, individuals and firms tend to demand more legal services, including those related to IEL. Legal services are generally considered to be a normal good, as they are often seen as a luxury or discretionary expenditure. Therefore, the increasing demand for legal services related to IEL can be seen as further evidence that IEL is a normal good.

The complexity of international economic relations has increased in recent years, due to factors such as technological advancements, changing patterns of production, and the emergence of new markets. This complexity has created a demand for legal frameworks that can provide clarity and predictability in economic relations. IEL, with its complex set of rules and regulations, has become a critical tool for regulating these relations. The specific methodology for calculating a member country's contribution to the WTO is outlined in the WTO's financial regulations and rules²⁵. The contribution formula takes into account two main factors. First and foremost is the share

²⁵ https://www.wto.org/english/res_e/booksp_e/anrep_e/ar23_budget-finance-admin_e.pdf.

of global merchandise trade. The WTO considers the member country's share of global merchandise trade as a fundamental element in determining its contribution. This share is based on the average of the member country's exports and imports of merchandise goods over a certain period, typically the past three years. The larger the share of global trade a member country has, the higher its contribution will be.

Once the relevant data on trade shares and economic size is collected, the WTO applies a predetermined scale of contributions to calculate the actual financial contribution of each member country. The scale of contributions is periodically reviewed and updated by the WTO membership. It's important to note that the specific details and exact formula for determining contributions may be subject to negotiations and agreements among WTO members. The contributions are typically assessed on an annual basis, and member countries are expected to fulfill their financial obligations to support the functioning of the WTO and its activities.

If a global public good is a normal good, it implies that its consumption is driven by individual members' ability and willingness to pay. This information can guide policymakers and organizations in determining the most appropriate financing mechanisms, such as user fees, taxes, or international aid, to ensure sustainable funding for the good. Irrespective of the size of the GDP and its market power all member countries are equal. Recognizing whether a global public good is a normal good can shed light on equity considerations. If it is a normal good, it means that wealthier individuals or countries would consume a larger share of the good compared to those with lower incomes. This understanding can influence policy decisions to ensure equitable access to the good, prevent the exclusion of disadvantaged groups, and address potential inequality gaps.

Furthermore, another expectation is related to externalities and spillover effects. GPG often generate positive externalities and spillover effects beyond their direct consumers. The openness of the economy If a global public good is a normal good, increased consumption can lead to greater positive externalities, benefiting a larger population. Policymakers can use this information to encourage its provision and maximize the positive impacts on society. Yet another consideration is the political power play in the WTO. "Time after time, the American government defended its behavior in front of the Appellate Body. And time after time, it lost. After losing, it would generally change its practices to comply with the Appellate Body's judgments (Bown, Keynes, 2020)." One full term of ex-president Trump was not the only reason for the downfall of the Appellate body, the other presidential rule was also unfavorable, which is threatening to its long-term sustainability. Knowing whether a global public good is a normal good is crucial for long-term planning and sustainability. If it is a normal good, policymakers can anticipate future demand growth and plan investments and infrastructure, such as that in the Appellate Body, accordingly. It helps avoid underinvestment or inadequate provision, ensuring the availability of the good for future generations.

Understanding whether a global public good behaves as a normal good provides valuable insights into its demand dynamics, financing mechanisms, equitable access, and long-term planning. These considerations are essential for effective policy formulation and resource allocation to ensure the provision and sustainability of GPG.

The last three sub-sections have discussed various concepts and thoughts, such as the GPG, the rationale of the equity among the members of the WTO, and whether Is IEL good from the point of view of the discipline of economics. The next sub-section will delve into the dynamic of two disputant countries at the WTO within the framework of game theory.

3.4) Game theory

Game theory originated with John von Neumann's seminal paper "On the Theory of Games of Strategy" in 1928, marking its inception as a distinct field. It has since become a foundational method in mathematical economics and business analysis for modeling competitive interactions among agents. In economics, game theory is often applied through the presentation of abstract games that mirror specific economic scenarios. These games are analyzed using various solution concepts to identify equilibrium strategies. The discipline serves both descriptive and prescriptive purposes, aiding in the understanding of existing economic phenomena and the formulation of strategic recommendations.

One prominent example is the Stackelberg leadership model, introduced by Heinrich Freiherr von Stackelberg in 1934. This model represents a strategic game where one firm, acting as a leader, sets its strategy first, followed by the sequential moves of follower firms. It captures dynamics akin to a leader-follower scenario in business strategy.

Another illustrative game is the ultimatum game, popular in experimental economics, as described by John Harsanyi in 1961. In this game, one player, the proposer, distributes a sum of money between themselves and another player, the responder. The responder can either accept or reject the offer. Acceptance leads to the proposed split, while rejection results in both players receiving nothing. This game serves to explore decision-making regarding fairness and self-interest under strategic conditions. Game theory can be applied to analyze the strategic interactions between countries in trade disputes. Using game theory to understand trade disputes is valuable because it provides a structured framework for analyzing and predicting the behavior of countries and entities involved in these disputes. It has several advantages when applied to trade disputes: Trade disputes involve negotiations and strategic interactions between countries, each trying to maximize its economic interests. Game theory helps model and analyze these interactions by considering the choices, strategies, and counter-strategies of the involved parties. Game theory assumes that parties involved in trade disputes are rational actors seeking to maximize their utility. This assumption helps in understanding the motivations and decision-making processes of countries, even when those decisions may seem complex or counterintuitive.

The ultimatum game, in its traditional form, is typically used to analyze interactions between two individuals or entities in a one-shot, binary-choice scenario where one party makes an offer and the other party decides to accept or reject it. While the ultimatum game is a valuable tool for understanding fairness and reciprocity in bilateral dispute situations, it has limitations when applied directly to multilateral trade

disputes involving multiple parties, such as multilateral trade disputes²⁶. Understanding the principles of ultimatum game theory, however, can allow for the assessment of risk and uncertainty in trade disputes. Analysts can model various scenarios, taking into account the probability of different events, to evaluate the potential consequences of trade policies.

Trade disputes at the WTO are complex interactions involving multiple stakeholders with conflicting interests. Game theory provides a powerful analytical tool to model and make sense of these interactions, predict outcomes, and inform policy decisions related to trade negotiations and disputes. It helps stakeholders make more informed choices and can contribute to more stable and mutually beneficial trade relationships. In summary, asymmetric information can indeed put poorer countries at a disadvantage when it comes to international economic disputes, especially within the context of the DSU.

4) Results

This section is built on the discussion in the previous section to provide the answers to the questions. First, let us start by exploring the categories of goods under which IEL could fall. All member countries of the WTO have access to the facilities. Dispute settlement mechanisms are one of them. The WTO is in the role of a provider of GPG services that can be accessed and consumed by several individual member countries simultaneously without diminishing the value of consumption to any one of the member countries. This key characteristic of public goods is that multiple member countries can consume the same IEL services without diminishing their value. This is termed non-rivalry. Nonrivalry is the characteristic that most strongly distinguishes public goods from private goods.

A pure public good also has the characteristic of non-excludability, that is, an individual cannot be prevented from consuming the good whether or not the individual pays for it. However, the IEL can not be considered a pure public good. For example, fresh air, a public park, a beautiful view, and national defense. This is perhaps where it differentiates. There is a distinction between discrete and continuous²⁷. The WTO contribution is not specifically for the services of IEL.

²⁶ A few reasons why the Ultimatum Game may not be directly applicable to bilateral trade disputes: 1) The multilateral nature of the WTO In a multilateral trade platform such as the WTO, there are more than two parties involved, making it challenging to apply the simple proposer-responder structure of the Ultimatum Game. In international trade, negotiations often involve many countries with diverse interests and priorities. Moreover, Multilateral trade negotiations are complex and involve numerous issues, such as tariffs, non-tariff barriers, intellectual property rights, and regulatory standards. The Ultimatum Game's simplicity may not capture the intricacies of these negotiations. Thirdly the iterative nature of the Multilateral trade disputes. These are usually ongoing processes that extend over extended periods, involving multiple rounds and stages. The Ultimatum Game, by contrast, is a one-shot game and doesn't naturally account for the iterative nature of trade disputes initiated at the DSU. The WTO requires information. Lastly, In multilateral trade relations, countries often form coalitions or alliances to advance their common interests including trade disputes. These group dynamics are not captured by the standard Ultimatum Game Framework.

²⁷ The terms "discrete public good" and "continuous public good" are not widely recognized or categorized in the literature on public goods. The concepts of public goods typically revolve around the characteristics of non-excludability and non-rivalry, rather than being categorized as discrete or continuous.

A "discrete" public good is offered to subjects that provide no benefits unless voluntary contributions by the group exceed a provision point and provide a fixed level of benefits thereafter.

A "continuous" public good is offered that provides benefits equal to a fixed proportion of group contributions at all contribution levels. This distinction is interesting because free riding is a dominant strategy. Individual subjects are in the continuous, but not in the discrete case.

The global trade dispute settlement system can be considered a discrete global public good for several reasons illustrated in Table 2. These differences are Continuous public goods may have a broader or ongoing scope, not limited to specific instances or time frames. For example, environmental conservation efforts or scientific research contributing to knowledge accumulation.

The WTO derives most of the income for its annual budget from contributions by its Members. These are established according to a formula based on their share of international trade. There is no quid pro quo in this. The individual member countries that file the consultation requests and proceed with trade disputes need to hire lawyers specialised in international economic law. The reason why ACWL was established. Based on this. A WTO case is estimated to cost at least US\$500,000 if taken through the Appellate Body (Ramizo, 2012). Based on the preceding explanation which is summarised in Table 2, it can be concluded that the IEL is a discrete public good.

In game theory, a pay-off matrix is used to represent the potential outcomes and pay-offs associated with different strategies chosen by the players. Assumptions underlying the pay-off matrix:

- **Rationality:** The assumption is that both countries are rational decision-makers and will choose their strategies to maximize their pay-offs.
- **Simultaneous decision-making:** The pay-off matrix assumes that both countries choose their strategies simultaneously without knowing the other country's choice beforehand.
- **Pay-off values:** The pay-off values in the matrix represent the expected outcomes or pay-offs for each combination of strategies. In this case, the pay-offs are represented as (Country 1's pay-off, Country 2's pay-off).
- **Mutual interaction:** The pay-offs depend on the strategies chosen by both countries. The outcomes are influenced by the combination of strategies chosen by each country, indicating that the countries' decisions can affect each other's pay-offs.
- **Strategy choices:** The matrix assumes that each country has two strategies to choose from: "To file a dispute" or "Not to file a dispute." The players can independently choose either of these strategies.

Accordingly, Table 3 shows a basic 2X2 Pay-off matrix for any two countries when they have to decide whether to initiate a dispute or not to initiate a dispute. The matrix presents outcomes based on two choices: "To file dispute" and "Not to file a dispute," each resulting in different consequences. Choosing "To file" when the other

party also chooses "To file" yields a significantly negative outcome (-10, -10), indicating mutual loss. However, if one chooses "To do" while the other opts for "Not to file," the result is highly favorable for the doer (100, -10). Conversely, if both parties choose "Not to file," they achieve a neutral outcome (0, 0), suggesting no progress is made. Overall, the optimal strategy appears to involve a unilateral choice to "file," while the other party refrains, maximizing benefits.

Table 3: 2X2 Pay-off matrix

Country 2 C2		To file dispute	Not to file a dispute
Country 1 C1	To file dispute	(-10 -10)	(-10 100)
	Not to file a dispute	(100 -10)	(0 0)

(Author, 2024)

The Stackelberg equilibrium is a concept in game theory that applies to situations where one player (the leader) decides the other player (the follower). In this case, the richer nation is the dominant player, acting as the leader, while the poorer nation is the follower.

In a Stackelberg equilibrium, the leader (richer nation) chooses its strategy to maximize its payoff, taking into account the follower's (poorer nation) response. The follower then chooses its strategy accordingly.

In this scenario, the Stackelberg equilibrium might result in a situation where the richer nation sets terms that are advantageous to itself, and the poorer nation, recognizing its weaker position, accepts these terms. This equilibrium reflects the power dynamics in the negotiation process, where the dominant party (richer nation) dictates the terms of the agreement equilibrium occurs when one player (the leader) makes their decision first, and the other player (the follower) observes that decision and makes their decision accordingly. In this case, one country has the advantage of making the first move, while the other country responds based on that decision.

Let's consider Country 1 as the leader and Country 2 as the follower in the Stackelberg equilibrium. If Country 1 chooses "To file a dispute" as the leader, Country 2 (the follower) would observe that decision and respond optimally. In this case, Country 2 would choose "Not to file a dispute" to maximize its payoff, resulting in a payoff of (-10, 100) for Country 1 and (100, -10) for Country 2.

On the other hand, if Country 1 chooses "Not to file a dispute" as the leader, Country 2 would again observe that decision and respond by choosing "Not to file a dispute," resulting in a payoff of (0, 0) for both countries.

Therefore, in the Stackelberg equilibrium, Country 1 as the leader would choose "Not to file a dispute," and Country 2 as the follower would respond by also choosing "Not to file a dispute." This leads to a payoff of (0, 0) for both countries. To summarize: Stackelberg equilibrium occurs when Country 1 (the leader) chooses "Not to file a

dispute" and Country 2 (the follower) responds with "Not to file a dispute."

Table 2: IEL as a discrete public good

Criteria	Discrete	Continuous	Notes: In reality
Non-excludability	Participation is voluntary after identifying the breach	There is no universal requirement for all nations to join. introduces an element of exclusivity, making it less suitable for classification as a continuous global public good.	All members are part of the accessible regardless of individual contributions or efforts.
Non-rivalry	1)When a dispute is brought to the system for resolution, it requires resources, time, and attention from the relevant parties. 2) The capacity of the system to handle multiple disputes simultaneously may be limited,	There is a degree of rivalry in terms of resource allocation and the attention devoted to individual trade disputes.	A dispute does not diminish its usability or benefits for other countries. Every dispute is taken separately with a separate panel group.
Global reach	The scope of benefit and its impact is more specific and targeted rather than continuously and universally distributed. Other member countries that are not directly involved in disputes may not experience the same level of benefits from the system.	These goods are characterized by their widespread and continuous benefits for all individuals or entities within a given domain.	164 countries, rule for third world developing countries rules and principles governing international trade are upheld uniformly and consistently across participating countries
Positive externalities	Disputes are initiated, the resolved fairly and efficiently, The parties with substantial interest could participate in it	other nonmembers are aware of the possible breach. It reduces uncertainty and promotes confidence in the international trading system.	
Collective action problem			The contribution by each country based on trade share
Limitation of coverage	DSU Focuses on resolving disputes related to international trade. Its scope is limited to trade-related disputes, and therefore, its coverage is more specific and targeted.	continuous and all-encompassing. Could address all possible global issues or provide comprehensive solutions to all types of conflicts	

(Author, 2024)

Equilibrium in the context of dispute initiators

Economically developed countries have been dominating the scenes of the international arena of trade disputes. This is true for the GATT era (1948-1994) and the WTO era From 1995 onwards. The biggest economies like the USA annually publish a report on foreign trade barriers to monitor with or without having an immediate or direct

interest in it¹⁷. The expected gains of the trade disputes are not known beforehand because a dispute needs to go through a ruling procedure which is time-consuming.

The low-income countries neither have resources. Although the least-developed countries form 20% of the total membership of the WTO, there have been few complaints filed by any members of this group. The participation of low-income countries has increased especially as the respondents and as third-party countries. It is these collective results that are of importance for the global good of free and transparent trade as the mission of the WTO states²⁸.

It is important to acknowledge that a trade dispute serves as more than just a standalone occurrence. Rather, it functions as a self-enforcing mechanism aimed at facilitating a transparent and streamlined trade flow. When a country initiates a trade dispute, its objective is to eliminate trade barriers imposed by its partner country through a successful resolution of the dispute. Winning a dispute within the WTO requires the respondent country to revoke any laws that contravene WTO principles. Consequently, the outcome of the dispute holds significance for the country initiating the dispute. Given the evident influence of gravity variables on the initiation of disputes, it becomes pertinent to examine whether these variables also impact the outcome of such disputes. The initiation of disputes by different member countries serves various purposes, one of which is to provide clarity on WTO law.

What if countries C1 and C2 have different income levels? Let us assume now that C1 is a richer country and C2 is a poorer country, the numbers within the parentheses represent the payoffs or outcomes for each country based on their actions. The format of the matrix suggests that the first value in each cell represents the payoff for Country 1 (C1) and the second value represents the payoff for Country 2 (C2). In this case, C1's higher payoffs could imply that it has more influence or power in the relationship between the two countries. If C1 acts as the leader in the Stackelberg game, it would anticipate C2's responses and choose a strategy to maximize its payoffs. C1's higher payoffs would lead it to choose "file a dispute" as its strategy. C2, as the follower, would then assess the situation and choose the best response. Since C1's strategy is already determined, C2's optimal response would be to "not file a dispute" to minimize its losses and accept the outcome of the situation. Thus, in the Stackelberg Equilibrium, C1 would "file a dispute" and C2 would "not file a dispute."

In matrix 2, what if the richer country C1 not only has a higher payoff but also the losses are lesser than the C2? It is because C2 is a poorer country and a value of -10 is higher to it than C1: interpret this where the richer country C1 not only has higher payoffs but also lesser losses compared to the poorer country C2. The values of -10 have different implications for each country due to their differing financial situations: If C1 acts as the leader in a Stackelberg scenario, it might choose strategies that enhance its interests while considering C2's likely responses. C2, as the follower, would be more inclined to adopt strategies that minimize losses, as the negative impact of losses is comparatively more pronounced than the positive gains. Table 4 explains the payoff matrix in terms of Stackelberg equilibrium for the dispute-initiating member countries.

²⁸ The overall objective of the WTO is to help its members use trade as a means to raise living standards, create jobs and improve people's lives. (WTO, nd)

Table 4: 2X2 Pay-off matrix Stackelberg equilibrium

Country 2 C2		To file dispute	Not to file a dispute.
Country 1 C1	To file dispute	(-10, -10): both C1 and C2 choose to file a dispute both countries incur a loss of -10. For C1, this loss may not be significant given its financial strength, but for C2, this loss is relatively larger in proportion to its economic situation. The negative payoff might have a more adverse impact on C2's limited resources.	(100, -10): If C1 files a dispute and C2 does not, C1 gains a payoff of 100, while C2 incurs a loss of -10. C2's decision not to file a dispute is likely influenced by its inability to handle the financial risk associated with a potential loss.
	Not to file a dispute.	(-10, 100): If C1 does not file a dispute and C2 files a dispute, C1 incurs a loss of -10, and C2 gains a payoff of 100. This scenario reflects C2's pursuit of a higher payoff despite its potential financial vulnerability.	(0, 0): If both C1 and C2 choose not to file a dispute, C1's payoff remains unchanged at 0, while C2 avoids a loss by receiving a payoff of 0. C2 might opt for this choice to mitigate potential losses.

The Ultimatum Game is an economic experiment that illustrates the concept of fairness and how people make decisions in situations involving the distribution of resources. In this game, two players, a proposer, and a responder, are given a sum of money. The proposer offers a division of the pie, and the responder can either accept or reject the offer. If the responder accepts, the pie is divided according to the proposer's offer. If the responder rejects, neither player gets anything. While the Ultimatum Game itself may not be directly applicable to multilateral trade disputes, the concepts and principles of fairness, reciprocity, and negotiation strategies that it highlights can be relevant in a broader sense. The concept of even and uneven splits in the Ultimatum Game can be applied to international relations, such as disputes between richer and poorer countries. Here is how it might work:

Even Split (Fair Outcome): If a richer country initiates a dispute against another richer country, the expectation might be for a more equitable or even split of the resources or benefits resulting from the dispute. This is akin to the proposer in the Ultimatum Game offering a relatively fair division of the pie, knowing that a more lopsided offer might be rejected. In international disputes, a fair outcome might involve negotiations, diplomacy, and compromise, with both parties seeking to share the benefits or burdens more evenly.

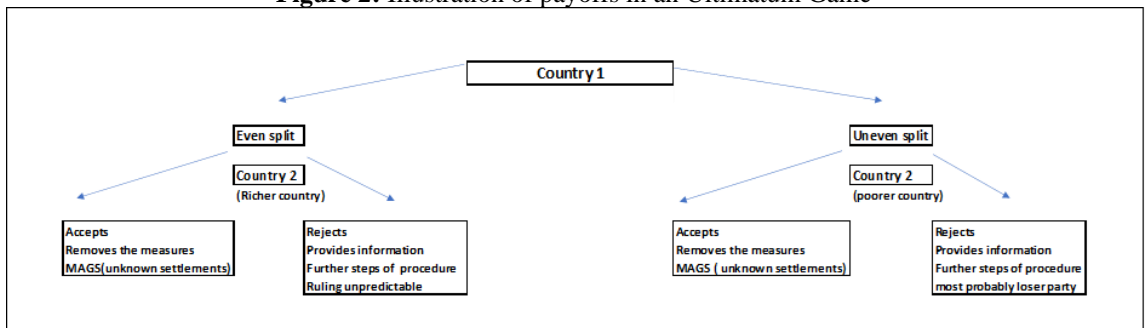
Uneven Split (Unfair Outcome): When a richer country initiates a dispute against a poorer country, there is a potential power imbalance. This could be analogous

to the proposer in the Ultimatum Game making a very unequal offer, knowing that the responder might have little choice but to accept it, as rejection would leave them with nothing. In international relations, this might lead to situations where the richer country uses its economic or political leverage to secure a more favorable outcome for itself, possibly at the expense of the poorer country. It is important to note that the mere existence of a trade agreement violation does not automatically lead to a trade dispute. The decision to file a dispute is inherently political and arises from the leadership's strategic calculations within a state (Rosendorff and Smith, 2018).

Table 5 provides the application and connection between Ultimatum and Stackelberg equilibrium in the context of multilateral disputes in the WTO.

It is noteworthy that the Ultimatum Game's concept of fairness and its application to international disputes is a simplified analogy. The results from ultimatum game experiments used in a variety of real-life settings, however, suggest the potential for responders to reject an “unfair” offer encourages proposers to propose more even splits of the money. The Ultimatum Game and the Stackelberg Equilibrium are two different concepts in game theory, however, some connections can be drawn between them when considering strategies and outcomes in trade disputes. The Ultimatum Game theory and the Stackelberg equilibrium analysis illustrate the potential for unfair outcomes when a dominant party exploits its position in negotiations, and they highlight the challenges faced by the follower or weaker party in such a situation. Figure 2 presents the illustration of payoffs for a richer and poorer country when a dispute is initiated by country 1, a richer country in the context of dispute at the WTO.

Figure 2: Illustration of payoffs in an Ultimatum Game



(Author, 2024)

Table 5: Application and connection between Ultimatum and Stackelberg equilibrium

Game theory		Connections between Ultimatum and Stackelberg equilibrium	
Ultimatum Game	Stackelberg Equilibrium:	Leader as the Proposer	Leader as the Responder
1 Two players: a proposer and a responder.	Two players, a leader, and a follower.	Proposer as the "leader," with the advantage of making the first move by deciding how to split the resources.	The responder is the "leader" who initially decides whether to accept or reject an offer.
2 The proposer offers a portion of a fixed amount of resources	The leader makes the first move and chooses their strategy,	The responder acts as the "follower" as they can only choose to accept or reject	The proposer, in this case, acts as the "follower" because

	(e.g., money) to the responder.	taking into account how the follower will respond.	the offer.	they must make an offer based on how they think the responder will behave.
3	The responder can either accept the offer, in which case both players get their respective shares, or reject it, resulting in neither player receiving anything.	The follower observes the leader's choice and then chooses their strategy accordingly.	The leader (proposer) may strategically choose how to split the resources, anticipating how the follower (responder) will react.	The responder (leader) sets the tone for the interaction by deciding whether to accept or reject offers, and the proposer (follower) must adapt their offers accordingly.
4	This game is typically used to study fairness and cooperation in economic decision-making.	The Stackelberg Equilibrium is a concept often applied in settings where one player has an advantage in being able to move first or set the rules.	This resembles a Stackelberg Equilibrium scenario where the leader (proposer) takes the first action, and the follower(responder) responds accordingly.	

Discussion

The article delves into the theoretical underpinnings of empirical findings concerning the empirically proven skewed utilization of IEL within the WTO. The Transformation from the GATT to the WTO has widened the scope of the issues and modified the dispute procedure system to the advantage of poorer countries for example by introducing negative consensus. The empirical results show otherwise, the inherent structural bias of the economically developed countries. This might be a call to distance ourselves from Western ideas of development. Escobar (2012) shows the need to be away from this. As he puts it "local culture and knowledge; a critical stance toward established scientific discourses; and the defense and promotion of localized, pluralistic grassroots movements" are needed to be incorporated to create more structural balance between the developed and developing world. **The article contends that while the WTO does offer GPG, the nature of these goods is discrete rather than purely public. This discreteness undermines the goal of transparent trade flow, resulting in wealthier nations dominating the DSU process. The disparities in resources and perceived benefits between richer and poorer nations lead to unequal participation and outcomes. Economically disadvantaged countries bear heavier losses and expenses, creating a need for structural reforms that consider the needs of developing and poorer nations.** The inherent bias cannot be addressed with the amendments in the current system alone. These findings are consistent with earlier research, such as Bown (2002), which showed that the net effect only partially offsets the impact of the DSU reforms. Consequently, changes to WTO rules on retaliation have had minimal effect on reducing the likelihood of 'strong' countries acting illegally. In 2008, Bown reiterated that future reforms in multilateral organizations like the WTO, aimed at enhancing the success rate of economic dispute resolutions, should focus on the economic incentives and compliance costs faced by the disputants.

Conclusions

This article answers the question: “What theoretical substantiation underpins the observed pattern of wealthier countries within the WTO engaging more frequently in dispute settlement mechanisms utilizing international economic law, compared to non-rich countries, reflect the characteristics of IEL as a normal good within the context of GPG provision?” Firstly, the inherent systemic bias that is facilitated by **reliance on independent private legal experts introduces heterogeneity and potential bias, eroding the purity of IEL as a global public good. Secondly, Economically disadvantaged countries often lack incentives due to ignorance about potential benefits to engage actively in dispute settlement due to perceived limited gains and high costs. Thirdly, bilateral free trade agreements further marginalize poorer countries, exacerbating uncertainty and discouraging them from challenging dominant trade partners.** These results underscore the need for systemic reforms within the WTO to ensure equitable access to dispute resolution for lower-income countries, which could enhance global trade fairness. Additionally, addressing biases in international economic law may foster more inclusive economic growth and stability in the global market.

To address these challenges, structural reforms are imperative, moving away from Western-centric models and incorporating localized knowledge and grassroots movements. Recognizing that this system operates as a discrete global public good, it is essential to enhance its accessibility for lower-income countries. One key approach to achieve this is at the WTO to establish a centralized monitoring system that oversees the initiation of disputes. Such a system would not only streamline processes but also ensure that the interests of economically disadvantaged countries are adequately represented and supported within the dispute resolution framework. This would contribute to a more equitable and inclusive international economic landscape.

Additionally, the redesign of multilateral institutions like the WTO must consider historical trade disparities and the imperative of industrialization for poorer nations. Addressing incentive disparities and uncertainty in dispute initiation is crucial for equitable global economic governance and the sustainability of institutions like the WTO. Policymakers and stakeholders in international trade must urgently prioritize reforms to the WTO dispute settlement system, addressing inherent biases and accessibility challenges faced by lower-income countries. It is imperative to implement inclusive practices that empower all member nations, ensuring equitable participation in global trade. Immediate action is essential to create a fairer, more transparent system that fosters sustainable economic growth and stability for all.

One limitation of this study is its reliance on existing literature to explain the investigated empirical patterns, which may not encompass all perspectives on IEL and the WTO, potentially leading to incomplete conclusions. Additionally, the analysis primarily focuses on structural issues without fully exploring the complexities of member countries' political and economic contexts. The pay-off matrix approach may oversimplify the dynamics of dispute settlement at the WTO, ignoring other influencing factors. Furthermore, the recommendations for reform may lack practical implementation strategies. Lastly, the study does not address how changing global economic conditions and power structures could impact the relevance of its findings over time.

Future studies should focus on conducting empirical analyses that assess the impact of specific reforms to the WTO dispute settlement system on lower-income countries. Exploring the socio-economic factors influencing the engagement of these countries in dispute resolution would provide deeper insights. Additionally, comparative studies with other international trade frameworks could yield valuable lessons on best practices. Research should also investigate the role of grassroots movements and local knowledge in shaping effective trade policies. Finally, longitudinal studies examining the evolving dynamics of global trade in response to reforms could offer critical perspectives on the long-term implications of policy changes.

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Data availability:

Data Archiving and Networked Services (DANS) | NWO

Name dataset: Multilateral trade disputes until 2016

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