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What can the WTO's Trade Disputes tell us About the Treatment of Developing Countries?

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Abstract:

The World Trade organization is the largest multilateral trade organization in the world, representing 98% of global trade. Seeking to promote trade between its 164 member countries, it is imperative that WTO agreements be followed by all members, such that the organization maintains its legitimacy.

The complexity brokering agreements that can be agreed on by 164 countries means that governments will have to give up the right to certain policy moves. This loss of policy space may be acceptable to some, but to developing nations it may be a hindrance from the goal of economic growth. Is giving up parts of their political sovereignty worth being part of the WTO? A Key aspect is the way the members of the WTO hold each other accountable. The dispute settlement mechanism is where governments may file complaints against other members of the WTO, should they believe that there has been a breach of WTO commitments. When an organization has such a range of economies, from the wealthiest and largest economies in the world, to the least-developed countries, can such a system really be fair? Are there statistical grounds to assume that the system favors the developed members of the WTO?

The objective of this study is to investigate the participation of developing countries in the WTO's DSM, and the fairness of the system towards countries of different economic standing. Looking at the disputes that have involved developing countries will give insight into where WTO members challenge them, as well as how fair the system is to countries of developing status. What is found is that only a small number of developing countries do participate in the DSM, and that they participate actively enough to make it seem as though the developing countries are participating at a normal rate. Additionally, there is no clear disparity between developed and developing countries in terms of who the DSM awards a case in favor of. This study finds that some characteristics of a dispute can be used to determine the outcome. This includes disputes that involve dumping, or a large difference in GDP per capita between participants having a lower chance of being ruled in favor of a developing country. Ultimately, while the DSM is a statistically fair system, it is a system underutilized by developing countries, and more support for poorer participants, or more faith in the system is needed.

Keywords: World Trade Organization; Dispute Settlement Mechanism; Developing Countries; Policy Space; Participation in multilateralism.

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List of Acronyms:

WTO – The World Trade Organization

GATT – The General Agreement on Tariffs and Trade

DSM – the Dispute Settlement Mechanism

GDP – Gross Domestic Product

AG – Agriculture or agricultural (goods)

CVM – Countervailing Measure

AD – Anti-dumping

IMF – International Monetary Fund

SCM – Subsidies and Countervailing Measures

TRIPS – Trade Related Aspects of Intellectual Property

TRIMS – Trade Related Investment Measures

USD – United States Dollar

LIC – Low Income Country

LDC – Least Developed Country

MFN – Most Favored Nation

TRQ – Tariff Rate Quota

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1. Introduction

Multilateral organizations are international bodies where countries work together towards common goals and to face global challenges. These organizations seek to create global networks of cooperation through agreements and commitments among members. For these organizations to function, all participants need to have trust in the fairness of the processes they are committed to, as well as the benefits that come from their commitments. For organizations that seek to implement agreements that span the entirety of the world, the balance between commitments and perceived benefits can be a difficult one to strike. Membership includes countries of different backgrounds such as their size, political power and wealth or differences in economic endowments, such as available resources, level of economic development and access to capital. Achieving agreements can be especially hard when dealing with cooperation between countries of very different economic status. While multilateral agreements might be implemented with the intention of being beneficial to all parties, a problem is that larger, richer countries can leverage their size and economic status to make things comparably more favorable for themselves. The poorer countries might then find themselves the target of less favorable agreements, or even unable to participate as much as their richer counterparts.

One multilateral organization that must navigate this problem is the World Trade Organization (WTO). The WTO seeks to facilitate trade on a global scale (WTO 2024a). This is done through brokering agreements between and among member states such that trade can happen with as few restrictions as possible. What this entails is the breaking down of barriers to trade in all markets across all members. This includes the reduction of tariffs, removal of quotas and limits on how much support governments can give their producers. While well intentioned and seeking the benefit of all members, the WTO and members alike have to keep in mind that such agreements effectively put limits on the right of sovereign governance a country has. This is because as agreements are signed, more restrictions are applied to what a government can do with their own economic policies. An important aspect of the WTO is therefore to attempt to strike a balance, and give proper time for negotiations for all agreements, such that no government feels hamstrung by their membership. Another aspect is the allowance of proper time to implement policies that conform with the new agreements.

The WTO deals with the trade of countries, and as such agreements and commitments can have a large impact on the local economy of a member state. Countries may therefore argue for policies that are beneficial to themselves but detrimental to others. Developing countries are especially susceptible to this given the goods they export, such as agricultural goods and minerals (Sheridan 2014). Between the WTO's negotiation rounds known as the Uruguay round that concluded in 1994, and the start of the Doha round in 2001, developing countries lost more than 100bn USD each year to protectionist policies from developed nations (Watkins 2001). Ensuring not only fair treatment of its members but also that agreements are being upheld is vital to the functionality and legitimacy of the WTO.

To help ensure that members comply with their commitments, the WTO includes a dispute settlement mechanism (DSM). The DSM functions is a means for members to hold each other accountable to their commitments (WTO, 2024b). When one member believes that the government of another has introduced policy that violates WTO agreements or commitments, they can file a dispute. These disputes include a consultation between the complainant and the offending party. This consultation is often enough for the parties involved to reach a mutual agreement. Fully 40% of disputes since 1995 have ended in a mutual agreement (WTO 2024c). In the remaining 60% of cases, however, panels have been established. A panel helps the parties to reach a conclusion if possible, and if not interprets the offending policy behavior or outcomes in terms of interpreting the legal texts of WTO agreements. Should a policy be found to be in violation of agreements made, the country is given a set period to bring it into conformity with WTO rules.

The DSM is intended to be a mechanism that enables fair trade and compliance with the rules of the WTO. However, in its implementation lies the risk that developing countries are unable to effectively and actively participate. There is even the risk that developing countries are more likely to be the target of disputes, hindering their ability to adapt policies to their own interests given their present situation. Dispute settlements demand time and resources that not all countries are able to expend, and so there is a real possibility that developing countries are unwilling to initiate disputes, lowering their participation in the system further. Looking into if there are any grounds to believe that these risks have become reality is the goal of this thesis.

1.1 Objectives

The objective of this study is to analyze the settled disputes at the WTO between 1995 and 2022 as they pertain to the treatment of developing countries. The period is from the inception of the WTO, until the last concluded year before data gathering for this thesis began. The treatment in the DSM context refers to the participation of developing countries in challenging other member states, as well as the types, numbers and settlement of cases that have involved developing countries and the issues that are of economic interest to them. Conducting a quantitative analysis of the disputes, both participants and their economic status as well as outcome and sector, will allow us to gain insight into the participation of developing countries. This will also allow us to see whether developing countries are more often the target of disputes from more developed nations. This might include finding a disproportionate number of cases that involve developing countries, compared to a small number of cases where the developing countries are the complainant. This can imply an unfair leverage of economic resources by more wealthy countries to influence the policymaking process of developing countries in a way that benefits them.

Data are gathered to conduct a combination of a qualitative and a quantitative analysis to answer the research questions.

Quantitative analysis will be conducted to answer the following research questions:

1. Do developing countries participate in the DSM? If so, do they participate as complainants or simply as defendants?
2. For what types of cases are developing countries more likely to be the target of disputes?
3. Are there grounds to assume that the DSM more often rules in favor of developed nations whether by their experience in multilateral systems, the power dynamics within the WTO, or their access to resources?
4. Do countries that have filed as developing in the WTO, those which a high level of income, have a measurable advantage in the DSM?

The quantitative analysis will be in the form of a regression analysis using relevant characteristics of each dispute to form explanatory variables.

Qualitative analysis will be conducted to answer these research questions:

5. Does the WTO decide cases favoring the complainant when the defendant is a developing country?
6. Are similar disputes settled differently when developing countries are involved?

1.2 AI use

This study will make no use of generative AI for text or summaries. In the unlikely event that any AI is used it will be to correct code related to the modelling, should the need arise.

1.3 Organization of the thesis

Chapter 2 of this thesis will discuss the background for the research problem. This will include a summary of the purpose of the WTO and the DSM, as well as statistics on the participation of member countries. Chapter 3 will provide a discussion of the economic theory related to trade liberalization under WTO rules and disciplines that are considered in the cases under the DSM. This will include a literature review to weigh in on the debate over the merits of WTO membership by developing countries. In chapter 4, the dataset, along with variables that will be used in the analysis for this study are defined. The models to be analyzed are explained. Chapter 5 reports the results and provides insight into the findings of the analysis. Finally, chapter 6 summarizes and provides concluding remarks.

2. Background

2.1 Principles of the WTO

The WTO was founded on five primary principles. These are trade without discrimination, freer trade, predictability, fairness, and encouraging development (WTO 2024v). Trade without discrimination, or non-discrimination is tackled through two main pillars. The first is the most favored nation, MFN, treatment. WTO members are not allowed to discriminate between their trading partners and must treat all members equally in terms of trade. This means no country is allowed to have lower import duties for goods from one country, but higher for another. There are exceptions to this, such as free trade agreements or customs unions, however. For example, goods traded between members of the EU are not subject to import duties, despite EU members having import duties on non-members. What MFN means, is that when a country joins the WTO and opens its market to international trade, it does so equally for all other WTO members.

The second aspect of non-discrimination is national treatment. National treatment is the principle that all goods, be they produced domestically or internationally, be treated the same under the law. This applies, of course, domestic regulations applied to the goods once they have entered the market, meaning this does not apply to import duties. National treatment applies not only to goods, but services and intellectual property as well.

The second of the WTO principles is working towards freer trade. This means opening markets, lowering import duties and removing trade distorting policies. The WTO understands that this must be done gradually, as to allow countries time to adjust their industries and their production levels in expectation of the changes. An example of this timeframe can be seen with the banning of export subsidies. A final date on permissible use of export subsidies was agreed upon in 2015, but the ban did not come into effect until January 1st, 2021. Developing countries are often allowed a longer timeframe to make these adjustments.

The WTO principle of binding and predictability go hand in hand with lowering trade barriers. Negotiating bound rates for policies such as tariffs allows members a sense of predictability when it comes to how investments might go. For instance in the event of investing heavily into the export of a manufactured good, a member will know ahead of time

how high the import duties they might face on the border of all other members might be. This predictability promotes investment, and prevents large, unexpected fluctuations in trade policy from other members. Though it may seem to run counter to the idea of freer trade, setting up bound rates can through this predictability be as trade incentivizing as lowering the barriers to trade. Following the Uruguay round of 1986-94, the bound rates for countries ended up being higher than they had been previously, but with the caveat that they could not be increased any further. The WTO also attempts to promote predictability through the removal of quotas, as quota rents may be administered in a way that is less transparent and predictable than a tariff.

This leads to the WTO principle of promoting fair competition. The WTO tries to establish fairness through their agreements, as well as the principles of MFN and national treatment. However, trade agreements and negotiations across 164 countries is complex, and often loopholes can be found in the rules, or some agreements may not have been followed through on by the member nations. In these cases, the WTO has its dispute settlement mechanism to allow countries to hold each other accountable to their commitments.

The WTO is also committed to encouraging development for its members. The WTO, despite not keeping records of member status, states that over two-thirds of its 164 members are filed as developing countries. The WTO has programs in place to allow for longer periods of implementation for commitments, as well as provisions aimed at increasing the market access for developing countries. Members are also required to safeguard the interests of developing countries when taking domestic measures such as anti-dumping and safeguard measures. Developing countries in the WTO also receive legal assistance in the form of guidance and counsel if the country is participating in disputes. The least-developed countries, the 35 poorest members of the WTO also receive extra attention in the form of additional aid for market assistance, more technical assistance and support for diversifying their economies on top of what developing members receive.

The principles, while good on paper, do offer some concerns over the policy space of members. These concerns are for instance governments not having having full autonomy to make the decisions it best sees fit for its nation’s economic growth. Critics are arguing that the power of the government to regulate its domestic market is being reduced over time as trade barriers are removed. While proponents of the WTO argue that entering into a fully non-

discriminatory international market is good for a country. Critics, however, worry that with developing countries having little market power of their own, the loss of ability to freely regulate their domestic markets and trade policies is a downside too large to ignore.

2.2 Dispute settlement in the GATT-1948

The WTO was formed after the Uruguay round of negotiations concluded in 1995. Prior to this, the rules for global trade had been set by the General Agreement on Tariffs and Trade, or the GATT (WTO 2024d). The GATT was a multilateral organization that started in 1948, following the second world war (Irwin et. al, 2008). In the first half of the 20th century, the world economy had seen tremendous growth, with low tariffs and increased global trade. However, both the great depression and the second world war had adverse effects on trade. The US applied stricter tariffs to protect domestic industry and were met with retaliatory measures from the European countries. As a result, international trade decreased, and economic growth slowed. In fear of such a thing happening again following the second world war, economists led an effort to broker a set of agreements that would keep trade a possibility. After years of negotiation, this what resulted was the General Agreement on Tariffs and Trade.

It was under the GATT that the first iteration of the DSM was created. Much akin to the current version, the DSM under the GATT was invoked when one country believed that international trade was being interfered with by the policies of another member (Davey, 1987). If the complainant could prove that they had seen a great enough reduction in benefits from their membership in the GATT caused by the actions of the defendant, then they could take retaliatory measures. These would come in the form of policies meant to correct for the damages, such as protection or support to the affected industry in the form of a tariff or subsidy.

This system initially worked, as the GATT was a relatively small, similar group of countries, and the DMS at this time excluded important sectors such as agriculture and services. China, Russia, and many of the developing countries had yet to join. Throughout the entire period of the GATT, 1948 to 1995, there were only 316 disputes filed (WTO 2024f), amounting to

between six and seven cases yearly. This contrasts with to the 615 disputes that were filed between 1995 and 2022, or a yearly caseload of 23 under the WTO. As the number of members increased, the number of disputes increased. It became obvious that the DSM under GATT-1948 regulations was flawed. Cases tended to drag on, as no proper time allotments were set in place. It was also much easier to block verdicts from going through, as it only took one dissenting country to reject the ruling of a DSM panel, preventing the case from being closed. Moreover, there were no disputes that applied to agriculture, where tariffs were high, and production was subject to high levels of support. These problems would be subject to change in the Uruguay round of negotiations as the WTO was formed.

2.3 Dispute settlement in the WTO, post 1995

The WTO's DSM underwent some changes to accommodate the renegotiation of all the policies of the GATT. What had been problematic under the GATT, with disputes dragging on and the ease with which a country could block rulings, were to be corrected for under the new system. In the new procedures of the DSM, complainants and defendants are given set periods for each step of a dispute. Rather than drag on indefinitely, a case should be resolved within 15 months of the initial filing, with each step of the process taking no more than 90 days. While this timetable is flexible, the goal is to remain as close to, if not be faster than, the allotted time, specified under the rules.

Another problem was the weak institutional mechanisms to prevent enforcement of DSM rulings. As previously mentioned, under the GATT a single country could block a ruling from going through. Under the new system, however, rulings are made on general agreement between parties, such that it does not have to be unanimous. This means that even if a single country disagrees with the ruling, it will still go through. This allows for cases to be resolved more efficiently.

The DSM handles a significant number of requests for consultation each year, these requests act as the first notification of a dispute. As seen in figure 1, this number varies greatly, from a peak of 50 in 1997 to a record low of five in 2020, though the pandemic might have influenced the latter. We can also see figure 1 being frontloaded, with the lowest number of

requests for consultations prior to 2000 being higher than for all but two of the years from 2001 to 2022. This is likely due to the need to solve problems that arose prior to the WTO's new DSM, that were delayed either due to negotiations or due to the perceived weakness of the DSM under the GATT-1948. Pent up demand from the GATT-1948's weak system, may have caused the high number of disputes in 1996 and 1997.

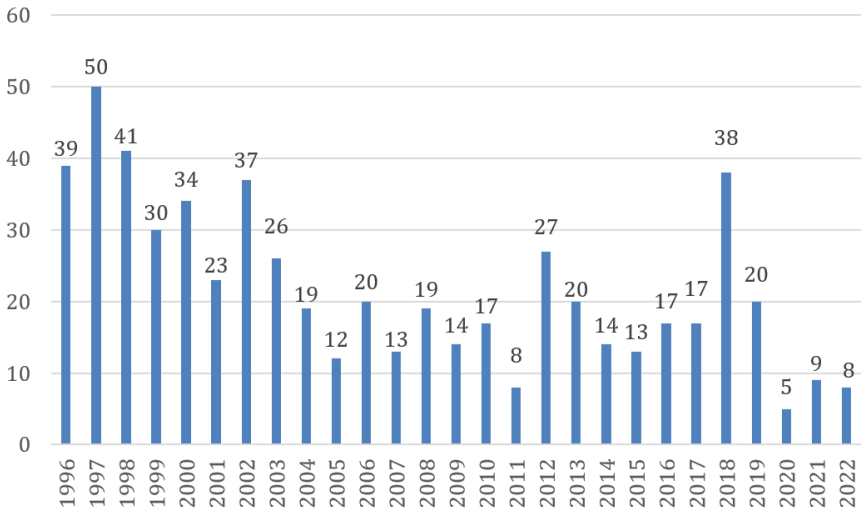

Figure 1. Requests for consultations (1995-2022),

Source: WTO 2024c.

As of 2022, the WTO had 164 members, the latest addition being Afghanistan in 2016 (WTO 2024e). Of these members, a total of 111 have participated in the DSM process (WTO 2024c). Figure 2 shows the number of members participating in each step of the DSM.

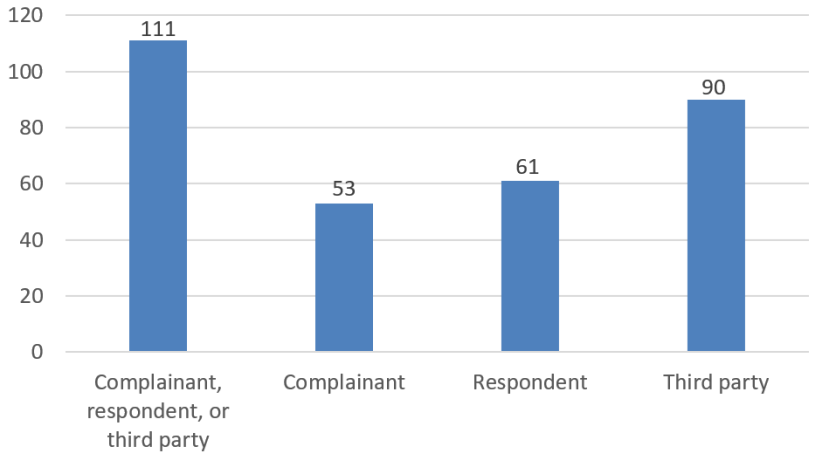

Figure 2, Number of members participating in the DSM, (1995-2022),
Source: WTO 2024c.

In total, there have been 203 disputes going beyond consultations and into a panel negotiation at the WTO between 1995 and 2022. Most members participate in the DSM. Between 1995 and 2022 111 unique members made use of the system. It is also noteworthy that more countries have participated as respondents to complaints rather than as complainants. This might be indicative of a small number of nations using the DSM far more actively than others, such as the US, being the complainant in 38 of the disputes. Conversely the US has been the defendant in 53 of the 203 cases taken to negotiations.

Support does exist for developing countries that attempt to utilize the DSM. The WTO secretariat offers assistance to developing countries in the form of legal staff to help with dispute resolution, as well as interpreting WTO rules (WTO 2024g). This can prove helpful as countries are put on a more even playing field in the resolution of disputes. There is also the requirement that panels constructed to deal with disputes involving developing countries be at least partially comprised of developing countries themselves. Such a rule strengthens the faith some may have in the DSM, as countries will be ruling on cases of those with similar backgrounds to themselves.

2.4 Participation by economic status

Looking at the participation of countries in the DSM since 1995 offers insight into whether developing countries have the means to have their voices heard. In the concluded disputes that ended without a mutual agreement or in termination during 1995 and 2022, there have been 203 disputes. Out of these, countries of lower-middle income or below were the complainants in 37 disputes and the defendants in 32 disputes. These countries will be referred to as low-income countries, (LICs) for the sake of readability. For complaints this equates to roughly 18 percent of disputes. For defendants, this equates to 16 percent of disputes. While these numbers might seem to indicate that LIC's are participating in the DSM, the World Bank defines 79 countries out of 229 as low to lower-middle income countries (World Bank, 2024a). This equates to over 34 percent of countries. As such, developing countries seem to be participating in the DSM at about half the rate they should be. If analysis were to include disputes that have reached mutual agreement or have been terminated, these percentages look different, however.

In the 26 cases that were terminated by the complainant rather than negotiated at the DSM, LICs filed 5. This means that in terminated cases, the LICs filed 19.2 percent of complaints, compared to the 16 percent of concluded disputes. They also responded to 6 of the 26 disputes, amounting to 23 percent of the disputes, five percent higher than when looking at disputes that reached negotiations and were ruled in favor of one of the parties. One of these terminated disputes was between two developing countries. Looking only at terminated disputes that involve LIC's versus middle income and above countries, the former sent in 16 percent and responded to 20 percent of complaints. The complainant figure remains the same as for disputes that have gone through the full settlement process, while the figure for defendants is slightly higher. This still supports the argument that LIC's are underrepresented as participants in the DSM.

Making up for the disparity in participation from the LIC's we have the countries defined as developing in the WTO's Trade Facilitation Agreement, TFA (WTO 2024w). When added to the countries defined as developing in the World Bank, they make up for 142 out of the 203 disputes carried through negotiations. This equates to 70 percent of all disputes, much closer to the number of developing countries the WTO has listed as members. Looking at terminated

disputes shows a similar trend, as the countries listed as developing in the TFA make up 54 percent of complainants as well as 54 percent of defendants, representing a significant leap from the numbers seen using purely the LICs of the world bank.

2.5 Developing countries in the WTO

Throughout the existence of the WTO, developing countries have been a topic of discussion. Both in terms of their ability to participate in the DSM, but also in terms of the benefits gained by the countries from their membership. The WTO themselves do not define countries as developed or developing. Countries are allowed to classify themselves, though this classification can be subject to dispute by other members (WTO 2024h). About two thirds of the members of the WTO have classified themselves as developing. These countries can make use of additional provisions within the organization. These provisions include additional time, policies for increased market access, and safeguards. Though countries are allowed to classify themselves, if they make use of these provisions, other members are allowed to question their classification as developing.

Despite this, the WTO does maintain a list of countries as developing, in accordance with the Trade Facilitation Agreement, the TFA (WTO, 2024w). This list reaffirms the claim that two thirds of the WTO have classified themselves as developing, as 125 countries out of the 164 members are classified either as developing or least developed. The list from the TFA deviates from the traditional understanding of developing countries as low-income countries, as it includes countries that have historically been of middle income or above, such as the Arab nations or the Republic of Korea. The list from the TFA is displayed in table 1:

Table 1. WTO members status as a developing country and income classification

WTO member	Developing under the WTO TFA	OECD member	World Bank, LIC
Albania	X		
Antigua and Barbuda	X		
Argentina	X		
Armenia	X		
Bahrain	X		
Barbados	X		
Belize	X		
Bolivia	X		X
Botswana	X		
Brazil	X		
Brunei Darussalam	X		

Cabo Verde	X		X
Cameroon	X		X
Chile	X	X	
China	X		
Chinese Taipei	X		
Colombia	X	X	
Cote d'Ivoire	X		X
Cuba	X		
Dominica	X		
Dominican Republic	X		
Ecuador	X		
Egypt	X		X
El Salvador	X		
Eswatini	X		X
Fiji	X		
Gabon	X		
Georgia	X		
Ghana	X		X
Grenada	X		
Guatemala	X		
Guyana	X		
Honduras	X		X
Hong Kong	X		
India	X		X
Indonesia	X		
Israel	X	X	
Jamaica	X		
Jordan	X		X
Kazakhstan	X		
Kenya	X		X
Korea, Rep of	X	X	
Kuwait	X		
Kyrgyz Rep.	X		X
Macao, China	X		
Malaysia	X		

Table 1. Continued.

WTO member	Developing under the WTO TFA	OECD member	World Bank, LIC
Maldives	X		
Mauritius	X		
Mexico	X	X	
Moldova	X		
Mongolia	X		X
Montenegro	X		
Morocco	X		
Namibia	X		
Nicaragua	X		
Nigeria	X		X
North Macedonia	X		
Oman	X		

Pakistan	X		X
Panama	X		
Papua New Guinea	X		
Paraguay	X		
Peru	X		
Philippines	X		X
Qatar	X		
Saint Kitts and Nevis	X		
Saint Lucia	X		
St. Vincent and Grenadines	X		
Samoa	X		
Saudi Arabia	X		
Seychelles	X		
Singapore	X		
South Africa	X		
Sri Lanka	X		
Suriname	X		
Tajikistan	X		
Thailand	X		X
Tonga	X		
Trinidad and Tobago	X		
Tunisia	X		
Turkey	X		X
Ukraine	X	X	
United Arab Emirates	X		X
Uruguay	X		
Vanuatu	X		
Venezuela	X		
Vietnam	X		
Zimbabwe	X		X
	X		X

Where the WTO does have a set definition, however, is for “Least-developed countries”, or LDC’s (WTO 2024n). These are designated by the United Nations and are recognized as such within the WTO. These countries have additional benefits, such as more assistance for participation in the multilateral processes. Some countries have also removed import duties for products exported by LDC’s. The UN recognized 45 countries as LDC’s as of December 2023. Of these, 35 are WTO members, while seven more are in negotiations to join the organization. The LDC’s are as shown in the table below:

Table 2. “LDC’s as defined by the UN”, data from (WTO 2024n).

Members of the WTO	**In negotiations to join the WTO**	**Non-members**
Afghanistan	Comoros	Tuvalu
Angola	Ethiopia	Kiribati
Bangladesh	Sao Tomé & Principe	Eritrea
Benin	Somalia	
Burkina Faso	South Sudan	
Burundi	Sudan	
Cambodia	Timor-Leste	
Central African Republic		
Chad		
Congo, Democratic Republic of the		
Djibuti		
Gambia		
Guinea		
Guinea Bissau		
Haiti		
Lao People’s Democratic Republic		
Lesotho		
Liberia		
Madagascar		
Malawi		
Mali		
Mauritania		
Mozambique		
Myanmar		
Nepal		
Niger		
Rwanda		

Senegal		
Sierra Leone		
Solomon Islands		
Tanzania		
Togo		
Uganda		
Yemen		
Zambia		

2.6 Types of disputes

The WTO classifies types of disputes by the agreement that a country is suspected to have violated. Figure 3 shows a much larger number of agreements cited than there are registered disputes in the same period. This is because the WTO allows a dispute to invoke several agreements that a member is in violation of. The issues raised are presented by the WTO as shown in figure 3:

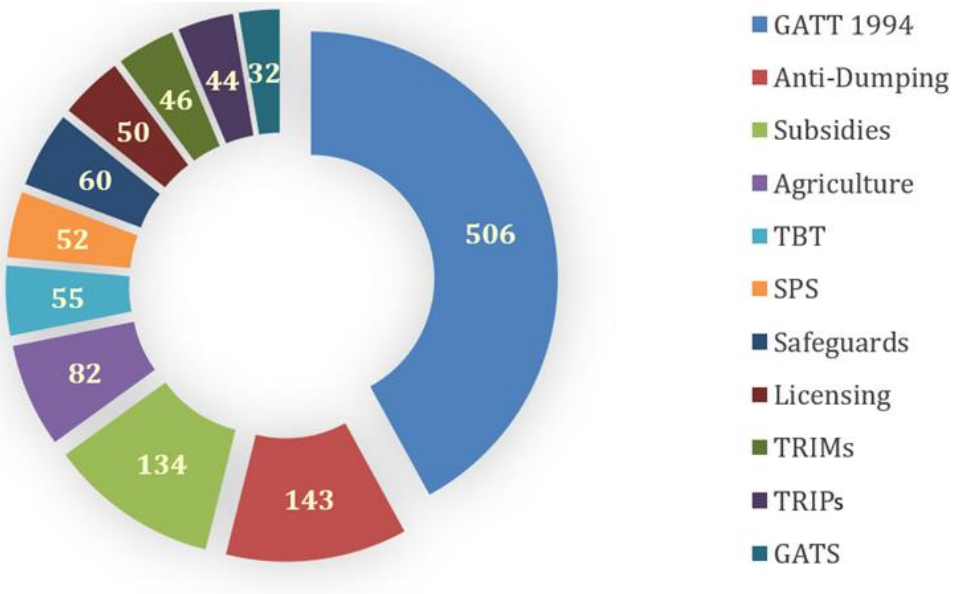

Figure 3, "Agreements raised in WTO disputes (1995-2022),

Source: WTO, 2024j.

The GATT 1994 is represented, in 506 of the 615 total disputes that have been initiated. These agreements relate to the basic principles of the GATT-1948 and WTO. These principles are numerous and so it is not surprising that they feature so often in disputes.

Alongside the GATT, anti-dumping, subsidies, and agricultural programs are often invoked. The WTO defines dumping as "a firm exporting a product at a price lower than that of its home market" (WTO 2024o). Anti-dumping, as such, refers to a country restricting imports from another due to suspicions that a foreign firm is dumping its goods on the international market. Even though the WTO allows anti-dumping for governments, the "Subsidies and Countervailing Measures Agreement" specifies that a country has to provide evidence of dumping, along with injury to domestic production, and calculate the extent to which the dumping is taking place. Anti-dumping is likely brought up in so many disputes due to the difficult process of proving not just dumping, but the necessary injury to domestic industry required to implement an anti-dumping measure (WTO 2024o). As such, measures may be called anti-dumping when in actuality they serve to limit the market access of international actors in a domestic market.

The third most invoked agreement involves subsidies. Subsidies are subject to the WTO Agreement on Subsidies and Countervailing Measures, the "SCM Agreement" (WTO 2024l). A subsidy is considered any "financial contribution" from a government or public body that benefits the recipient. This "contribution" can among others be in the form of direct payments, as debt being forgiven, or as the government providing goods or services that do not count as basic infrastructure. Regardless of the type of contribution, the important determinant for a subsidy is that it comes from a public body and is results in a benefit. The latter has caused some disputes by itself, as determining a benefit can be legally difficult. Some precedent, such as the dispute DS#70, i.e., "Canada – Measures affecting the Export of Civilian Aircraft", has been set in determining benefit as it relates to what the producers would otherwise receive from the marketplace (WTO 2000). Subsidies are split in WTO agreements as fully prohibited, and those that are subject to being challenged in the WTO. The second category of subsidies, while allowed, are up to being challenged by other WTO members in the DSM, or the affected goods can be subject to countervailing measures. CVMs are measures taken to balance out the losses caused by subsidies in other countries. These measures often come in the form of import duties. To adhere to WTO agreements, a member

must establish a causal link between subsidies in another country and an injury to domestic industry (WTO 2024l).

This is likely why subsidies are so heavily represented in the DSM, though not as often as anti-dumping, as they are brought up both as against agreements through prohibited support or support that is challenged. They are then also likely also brought up when countervailing measures are disputed.

Agriculture made up 4.32 percent of the world's GDP in 2022 (O'Neill, 2024). The WTO defines agriculture as the trade in food and farmed goods. This means that while grains, meat and vegetables are covered, so are the goods derived from them such as milk or cheese, and more processed goods such as chocolate or sodas. Alcoholic beverages, and naturally grown fibers such as cotton or silk are also covered in this category. Agriculture has been subject to WTO agreements since 1947 under article XVI of the GATT. Agricultural goods are subject to agreements on the level of support a country can give their farmers, both in terms of protection from outside competitors, and in terms of support for export. As of 2020, all members of the WTO are prohibited from using export subsidies for their agricultural industry. With such a broad definition of goods for a market making up nearly five percent of trade, agriculture is often brought up in the DSM.

The other agreements that are involved are technical barriers to trade (TBT), sanitary and phytosanitary measures (SPS), safeguards, licensing, trade-related investment measures, (TRIMs), trade-related aspects of intellectual property rights (TRIPS), and general agreements on trade in services (GATS).

Sanitary and Phytosanitary (SPS) agreements are those that involve health and safety related concerns of products. These are, similar to TBT measures, requirements placed on products, but instead of denoting quality or production methods, place restrictions on the animal, plant, human health, and environmental safety and procedures by which goods can be produced. These measures can involve requiring processes such as a treatment for removing pesticide residues and other harmful substances from the products, or hygienic restrictions to where the products can be produced (Trade4MSMEs, 2024). These measures should not be applied in

any more restrictive way than what is absolutely necessary to protect the lives of humans, animals and plants in a dignified manner.

The WTO encourages members to use international standards should such exist for products that are subject to TBT and SPS measures but leaves room for countries to apply regulations for domestic markets. These domestic standards have to be backed up by science in the case of both TBT and SPS measures. Both TBT and SPS measures can act as trade restrictions, and may be applied without good justification such as scientifically proven harm in the case of SPS measures, which is likely why they are cited in the DSM as often as they are.

Technical barriers to trade (TBTs) involve differing standards and regulations of products between countries (WTO 2024p). These barriers can include packaging in a certain way, weight or size of the product or labelling on the product (European Commission, 2024a). These measures are most often used to denote quality, production location or methods. TBTs can also be used to solve concerns related to health and safety of products, which would otherwise be dealt with through SPS measures.

Licensing refers to a permission that is granted to firms in order to sell can sell their goods in a domestic market (International Trade Administration, 2024a). These licenses allow governments to filter who can import to their country, restricting unwanted goods. This is by nature trade distorting, and if issues arise in licensing agreements they may arise in the DSM as parts of a dispute.

Trade-related investment measures (TRIMs) are measures taken to limit certain investments that may distort trade in goods and services. The WTO agreement indicates that no member can take measures to restrict or discriminate against any other country and their products. This means there are certain investment measures that are prohibited as per the WTO agreement. These include requiring local production, requiring a certain level of exports or balancing the trade flows of a country between exports and imports, as a condition for investment in the domestic market (International Trade Administration, 2024b).

Trade-Related Aspects of Intellectual Property Rights (TRIPs) is an agreement that relates to the protection of intellectual property (WTO, 2024m). Trading knowledge and ideas has

become easier with the advent of the internet, and so having clear trade agreements on the matter is important.

The General Agreement on Trade in Services (GATS) is the final, and least frequent of the agreements invoked in the DSM (Swiss Government, 2023). The agreement seeks to ensure transparency and predictability in the trade of services on a multilateral basis. Such as all other agreements, the GATS has rules of no discrimination, and applies to all levels of services traded. The GATS allows countries to commit to certain sectors for which to allow foreign suppliers of services. All of these topics for disputes, as well as their relation to WTO agreements, will be explained further in chapter 3.1 of this thesis.

2.7 Developing countries in the DSM

The total number of disputes in this time, that passed into negotiations, was 202. In the study period, 141 disputes involved developing countries. Of these, 76 were as the complainant, and 88 as the defendant. These numbers add up to more than 141 due to disputes that feature developing countries on both sides of the dispute. Given that developing countries as defined using the TFA list add up to 125, and the total number of members in the WTO is 164 as of Afghanistan joining in 2016, this means that developing countries featured in roughly 68.11% of disputes and made up 77.63% of WTO members. This disparity might not seem big at first glance, but of those 141 disputes, only 29 unique developing countries participated. Of these there were 25 unique complainants and 18 unique defendants. This means that 96 developing countries did not participate in the DSM at all in the study period. Out of the ones that did, 12 only did so as complainants, while four only participated as defendants. This implies the presence of some countries that are repeat offenders, using the DSM a significant amount to make up for the small percentage of developing countries participating, and unsurprisingly, these are the countries that are either considered rich for developing countries, such as the Republic of Korea, or have large, albeit not necessarily rich economies, such as China and India.

For the complainants, the Republic of Korea has filed 8 complaints, so has China. Brazil, India, and Indonesia have each filed 6. Those five countries alone make up 36 out of the 76

complaints filed by developing countries. Looking at the defendant side, an even more skewed image emerges. Eighteen developing countries have been defendants in 88 disputes. Out of these, China has been the defendant 20 times, and the Republic of Korea and Argentina 10 times. Indonesia has been the defendant 8 times and India 7 times. These top five account for 55 of the 88 defending developing countries. We can therefore tell that there is a clear concentration in which developing countries are active in the DSM, both as complainants and defendants It is usually those developing countries with higher income or are more active on the global market, such as China. China is also in close cooperation with Chinese Taipei, or Taiwan, who also participates in the DSM on their own. There is also a large concentration of which countries are filing disputes against developing countries. The US and the EU are most prominent in their dispute filing, unsurprisingly so, given the size of their economies and the number of countries they trade with. The US filed 27 and the EU filed 22 disputes against developing countries in the study period. Manufactured goods were the most heavily disputed issue, at 37 disputes filed. Thirty-two disputes were about agricultural goods, while 22 had dumping as a focus. Agricultural disputes were primarily filed against China, eight times, Indonesia, the Dominican Republic and the Republic of Korea four times each, and Argentina thrice. That makes up 23 of the 32 agricultural disputes filed against developing countries. Of the dumping focused cases, five were filed against China, while four were against India. No other country was filed dumping related disputes against more than three times.

LIC's participation has the same patterns as the overall for developed countries. China being among the most prominent LIC as, up until 2010 they were considered a lower-middle income country. This means that while not all of China's participation translates to LIC participation, it is still present. Out of 67 LIC disputes, 12 included China, 14 included Indonesia, 13 included India. Guatemala at five and the Dominican Republic at four disputes rounded out the top five. Combined, the five most prominent LICs participated in 48 out of the 67 disputes. Again, this means that while the participation of LIC's might look good on first glance, further inspection reveals problems with participation made to seem smaller by an active group of countries.

2.8 Need for analysis

The WTO admits that the numbers do not tell the whole story. Due to the complex nature of the DSM, it is difficult to truly count each case based solely on what is on the dispute settlement number. An example can be found with how requests for consultations are handled. A joint request for consultation may be brought forth by several individual countries, for instance operating as the “European Community”. This will then be counted as a single complainant, even though the dispute is being filed by multiple countries. Further deliberation of the cases may treat several cases with a single panel. For this reason, further analysis of the data is required. Understanding what lies beyond the numbers, for this thesis that being who the disputes involve, and what they involve.

3. Theory and Literature

3.1 Economic theory

The WTO focuses on liberalizing trade. That is to say, to break down policy barriers and allow trade to flow as freely as possible. International trade and cooperation are integral to the continued growth of an economy, and the well-being of its people (IMF, 2001).

3.1.1 Free trade versus trade policy

Free trade is the de facto trade model where we assume that no political or monetary barriers are in place to prevent countries from trading with each other. In this scenario, prices would be set by supply and demand, and countries would specialize in producing what they have advantages in (Loo, 2024). In a perfectly free global market without barriers to transportation or relocation, this would also mean that both capital and labor would flow to where returns are the highest and costs are the lowest.

Ultimately such a scenario puts the world in balance, where wages and prices converge between countries until purchasing power is equalized across the globe. This would also mean a globally higher supply and lower prices of goods. This is an aspect of what is known as the law of one price, LOOP. The LOOP dictates that near identical goods or services will cost the same across all open markets, in the absence of trade barriers and transaction costs, though the latter are often less of a problem, as costs are included in the price of the product. The LOOP holds surprisingly well with regards to certain goods, such as gold (Miljkovic, 1999). Beyond trade restrictions, transport times work against the LOOP as well. Goods that need to be fresh or have a clear timeframe within which they need to be used, are less subject to the LOOP because transporting the product to where the price would be the highest, or producing raw materials for the good could not be done. In these cases, it is the cost of production in these countries, which varies based on resource endowment, environmental factors and political differences that will determine the divergence from the global price(Miljkovic, 1999).

Of course, a perfectly free market with no restrictions to the flow of goods, capital or labor cannot exist outside of theory. As long as there are transportation costs, delays and costs of starting or stopping production, such a model will never reflect a complete image of trade. That being said, some countries will have advantages over others in terms of what resources they are endowed with or have greater access to. These could be natural resources, access to

labor or favorable conditions for production. When capitalized on, these advantages can propel a country's economic growth. And while trading actively with a country undergoing such growth can be it can also drown out local industries. This is where trade policy can be used as a tool for both parties.

Trade policy is government interference of the market-based system. These policies may seek to support local businesses faced with pressure from outside the country, grasp a larger part of the global market, or improve a country's balance of trade.

3.1.2 Trade interventions

Trade interventions, a subset of trade policy, are government actions intended to improve a country's balance of trade on the global market. The balance of trade of a country is the value of its imports versus the value of its exports. These interventions come in the form of tariffs, subsidies for supporters and quotas.

Tariffs are taxes on imported goods entering into a domestic market. A tariff represents a tax on top of the border price of a good that it will cost when introduced to a market. This works as a deterrent from exporting to countries that maintain these, as the added price the consumers see will reduce the quantity demanded for the goods. What tariffs aim to achieve is to hinder foreign producers from outcompeting local ones. A country may implement these in order to maintain industries that are competitively at a disadvantage compared to the global market, or to protect emerging industries from pressure. Tariffs also serve as a source of government income from the imported goods. The economic effect of a tariff is shown in figure 4.

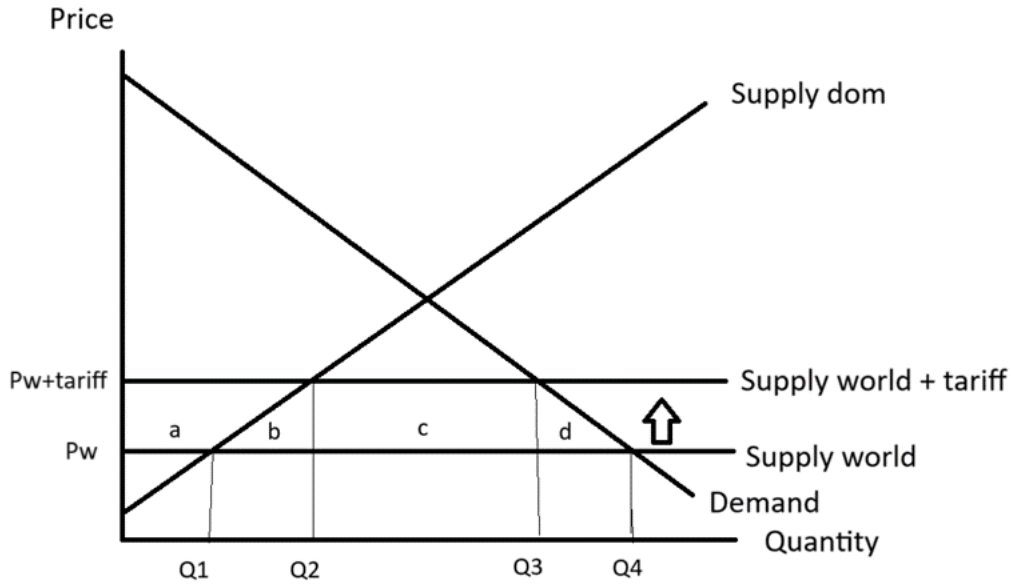

Figure 4: The effects of a tariff.

In the graph above, a tariff has been implemented on an imported good in a small country. The country has no ability to impact the world price, Pw, but the tariff impacts the price seen by the domestic consumer, Pdom. This increases the price from Pw to Pw+tariff. The higher price leads to an decrease in imports, and the demanded quantity falls from Q4 to Q3. The higher price also leads to an increase in production, and the quantity supplied by domestic producers rises from Q1 to Q2. As a result, of this policy, the country as a reduction in consumer surplus of areas (a+b+c+d), while the producers have an increase in producer surplus of area (a). The government gathers tariff revenue denoted by area (c). As such, the welfare change is a reduction of economic surplus by areas (b+d). This welfare change signals that there are efficiency losses in domestic production and consumption as a result of the tariff.

Following the 1995 Uruguay round, and the foundation of the WTO, the tariffs of developed countries were lowered over a period of five years. This resulted in a cut of around 40% in the tariffs member nations had on industrial goods (WTO 2024q). Tariffs for WTO members are "bound", meaning that the members have negotiated set ceilings for how high their tariffs can be. For developed countries, these bound rates are often the actual duties the country places on goods, while developing countries have negotiated much higher rates, using them as ceilings, and leaving themselves room both lower and increase duties in response to market changes. It can be argued that the ability to negotiate bound tariffs this way is evidence of

developing countries being allowed some policy space to protect or support domestic production while collecting tariff revenue.

A trade or import quota is a more aggressive way to prevent imports. The WTO defines a quota as a restriction or ceiling on the total volume, or value, of certain imports or exports (Goode 2003). A quota serves as a hard limit to how much of a good can be imported, or the amount that can be spent on foreign goods. Any volume or value beyond this limit is prohibited. Import quotas are generally not preferred, neither by governments nor by domestic producers, when compared to tariffs. This is because they are more administratively demanding, generate no revenue for the importing country, and are much less transparent and predictable than a tariff (Smith, 2019). A quota has to have the rents, the value of the quota, often given to foreign exporters, who then sell to their goods on the domestic market. While a tariff increases the price at which the affected foreign good will be sold in the domestic market, a quota simply reduces the available quantity in a market. Though both of these increase the price of the affected good, a tariff would mean that domestic producers, not affected by the tariff, are at an advantage, as they have no added tax to their production. In cases of large disparities between the price of a foreign and domestic good, this means a tariff will do more to even the playing field. Article X1 of the GATT also prohibits any quantitative restriction of imports of any good, including quotas (WTO 1994). A tariff, often simply a specific rate on a good, has no rents that have to be given – or sold- to local firms, no limits to administer and brings in revenue for the government. Quotas suffer from all these caveats. For this reason, quotas have been replaced by tariffs, or by tariff rate quotas (TRQ's) for WTO members. The effects of a quota are shown in figure 5:

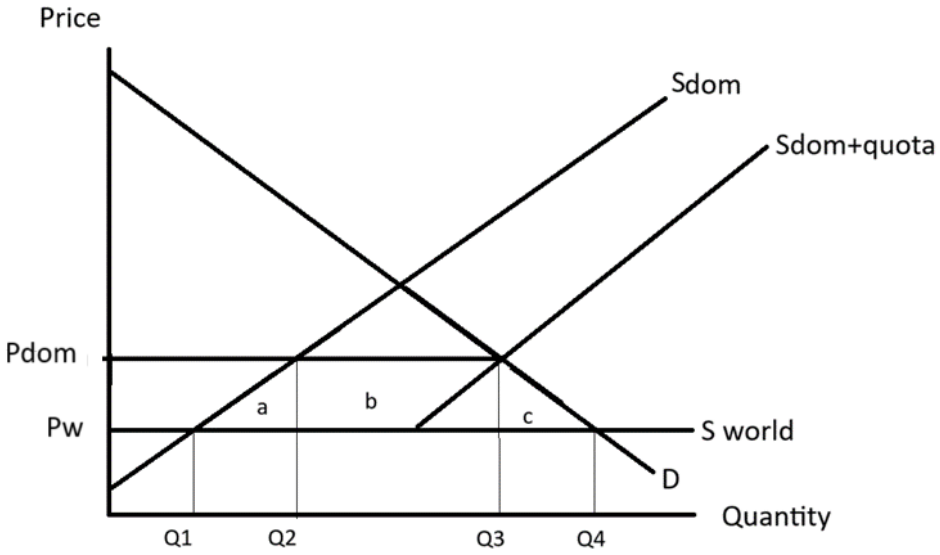

Figure 5: The effect of a quota.

When a country implements a quota, rather than a tariff, there is no government revenue to collect. The changes that can be seen are that the demanded quantity changes from Q4 to Q3, as that is the new allowed maximum under the quota. The imported quantity goes from the area Q2-Q4 to Q2-Q3. The price changes from Pw to Pdom, and domestic producers can supply more, with domestic production going from Q1 to Q2. There is a welfare gain of area (a)a for domestic producers, while consumers lose area (b+c). This is an overall welfare loss, as the surplus lost by consumers will outweigh that gained by producers.

Tariff-rate quotas (TRQs) are an amalgamation of tariff and quota. TRQs allow a certain amount of a good to be imported for a set tariff, then once this amount is reached the tariff rises to a higher amount. This new tariff can then be so high that it effectively works as a quota by disincentivizing imports at the rate. The new maximum rate must not exceed the Most Favored Nation, MFN, rate that the country has negotiated as their bound tariff. For a more temporary restriction, a government may want to use a safeguard or an anti-dumping measure. TRQs give countries more policy space, as they are able to restrict imports to a level they deem acceptable without imposing a hard upper limit.

3.1.3 WTO agreements

Safeguard measures are temporary restrictions on imports for a specific industry to protect it from harm. This harm is in the form of increased imports, or a sudden drop in the domestic price, of a good, which is threatening to cause, or is causing, significant damage to the industry. For this safeguard to be considered valid, a government has to prove that there is serious risk to the industry were imports left unrestricted. The safeguard measure must also be applied to the product being imported regardless of where it is being imported from (WTO 2024o). Safeguards existed in the GATT as article XIX but were not as often used as trade agreements between countries that involve a reduction in trade of the specific good. This practice of voluntary reductions was eliminated by the "Safeguard Agreement", which stated that WTO members committed to not "seek or maintain voluntary export restrictions" (WTO 2024o). When it comes to trading with developing countries, there are additional restrictions on applying safeguard measures. For a safeguard to be valid, a single developing country's export must account for more than 3% of the total imports of a product.

As previously stated in chapter 2.7, dumping is the act of a firm selling a good on the international market at lower than the price they would have received in the domestic market, as outlined in article VI of the GATT. Article VI was later agreed upon as part of the Uruguay round and is part of the commitments WTO members took. Anti-dumping measures as such are preventative measures taken to prevent injury to domestic industry for those countries who would otherwise import this good. Article VI of the GATT determines that for a member to determine that dumping is taking place, it must establish a normal price for the good (WTO 1994). This normal price is either based on similar products in the domestic market, or if no such goods exist, the cost of production of the good, or the highest price at which the "dumper" exports to a third country. Should the price of the exported good be found to be below this normal price, a measure to countervail it is permitted. This countervailing measure must be targeted at the specific product, and not affect any other products or firms exporting to the country. These countervailing measures are most often in the form of tariffs. The likely reason anti-dumping is invoked in the DSM is because determining dumping is a difficult and lengthy process. Countries may feel the need to apply anti-dumping measures to protect domestic firms should an increase in imports lead to a decrease in price in the domestic market. Anti-dumping measures also have to be specifically targeted at the product and firm that is dumping, and any spillovers onto other products and firms are as such subject to

dispute as well. When dumping is not properly determined, anti-dumping measures can be experienced as unfair and be disputed by the exporter. The anti-dumping measure taken must also be proportional to the level of dumping, meaning the value of the measure must equal the value of the dumping (WTO 2024o). For developing countries, determining a normal price for a good might prove difficult, and it is also unlikely that a small or emerging economy will be able to cause significant injury to a wealthier country's industry.

The "SCM Agreement" deals with subsidies and countervailing measures (WTO 2024l). The agreement outlines the rules for providing subsidies, as well as how countervailing measures can be implemented to reduce potential harm from imports that receive subsidies for their production. The agreement specifies that a measure is a subsidy when it meets three conditions; a "financial contribution", the contribution must come from a public body within the country, and that the contribution must be beneficial to the recipient. Even with all these conditions fulfilled, a subsidy is not subject to the SCM agreement unless it is specifically provided to a firm or an industry. This is the concept of specificity. The WTO sums this up as "a subsidy that distorts the allocation of resources within an economy should be subject to discipline" (WTO 2024l). The subsidies that are covered by the agreement are then divided into two specific categories. Those that are fully prohibited, and those that are actionable. Prohibited subsidies are not allowed to be utilized by any WTO member state. The prohibited subsidies are export subsidies, which were agreed to be prohibited post 2020 for agricultural products, and subsidies that are reliant on the recipients using local goods rather than imported goods. The developing countries of the WTO have special permissions regarding export subsidies for agriculture, as LDCs and those countries with a GNP per capita of less than 1000 USD per year, are exempt from the prohibition. The other developing countries of the WTO were given an eight-year timeframe to phase out their export subsidies, contrasting the five given to developed countries. Actionable subsidies are subject to challenge in the DSM, or to countervailing measures, because they have adverse effects. These are subsidies being the cause of serious injury to the domestic industry of an importing member of the WTO or subsidies that significantly distort trade in the subsidizing member. Lastly there is the effect of subsidies where the benefits an importing member has from being a WTO member and the additional trade flow of reduced import duties is reduced by imports subsidized by other members. All of these effects are valid reasons for a WTO member to issue a complaint to the DSM about the subsidies of another member.

Agricultural production subsidies are categorized in “boxes” in the WTO (WTO 2024r). These boxes are the “green” box, indicating that a subsidy is permitted because they are least trade-distorting, the “amber” box, indicating that the support needs to be reduced, the “red” box, which is support that is not permitted under WTO commitments. There are also the “blue” box, which is support that is conditional on the reduction of production, and the “S&D” box, the latter of which is specifically for developing countries.

The green box contains all support that is considered minimally trade-distorting. This support has to be entirely independent from production levels and cannot include price support. Support that falls into the green box includes income support for farmers, as well as environmental protection programs. The amber box is support that is trade-distorting. This support directly affects production and trade, and the WTO has determined that this support is to be reduced. Some members of the WTO want the support that would fall into this box entirely removed, arguing that it would be more harmonized if each member had the same level of support for their agricultural sector, at the “de minimis” level of 5% for developed and 10% for developing countries. This has been met with some resistance, as the agreement reached at Doha was simply to reduce the level of support. Thirty-four members of the WTO have committed to reduce their amber box support, while the remaining members of the WTO have to maintain their support at the de minimis level. After the amber box comes the blue box. The WTO calls this box “the amber box with conditions” (WTO 2024s). The blue box is essentially amber box, conditional on a reduction in trade-distortion. That is, support that is considered trade-distorting, but comes at with the caveat that production must be reduced with time. There are no spending limits to the blue box subsidies, given that they enforce their conditionality. If a country wishes to implement temporary subsidies despite WTO regulations or believe that subsidies in another country are affecting their trade positions, it may enact countervailing measures (CVMs).

CVMs are usually import duties imposed on a product that is believed to be the beneficiary of subsidies in the exporting country (European Commission 2024b). To adhere to the WTO guidelines for CVM implementation, countries need to establish three things. That there are imports being subsidized in their home countries, these imports are causing injury to domestic industry, and there is a causal link between the subsidization of the imports and the injury. A country wishing to implement a CVM are also subject to five additional requirements. The country must ensure that there is sufficient support from the domestic industry being targeted

to launch an investigation. The country must perform an investigation before any measures are taken. The country must avoid agreements such as a voluntary export restriction on the part of the exporter. A voluntary export restriction is when an exporting country agrees with an importing country to restrict the volume of a product that the exporter will sell on the international market. This can be beneficial to the importer as it will increase the domestic price, assuming the exporter was large enough to affect the world price, and as such provide room for domestic industry to grow. The country is committed to terminate the CVM within a period of five years unless the damage to domestic industry has continued beyond this period. And finally, the country must allow an independent review of the investigation as well as the measures set in place.

Import licensing refers in the WTO to "administrative procedures requiring the submission of an application before the importation of goods" (WTO 2024t). Formerly covered in article VIII, article X and the Import Licensing Code of the GATT-1948, licensing now falls under the WTO "Agreement on Import Licensing Procedures". The agreement dictates that licensing should be simple, transparent and predictable. This is to minimize how complex the import and export processes are between WTO members, as well as the complexity of documentation needed. Members are also required to publish their laws and regulations as they pertain to import and export in an impartial manner, so the requirements for trade can be clearly understood by the international community. The WTO requires members to respond to licensing applications within 10 days, and to offer them as impartially as they would for non-licensed goods. There is a subset of licensing called automatic licensing where the application is approved in all cases. Neither automatic nor manual licenses are allowed to be granted such that it has a negative or restrictive impact on imports. The objective of this prohibition is to prevent licensing procedures from being used as import quotas or to substitute for other practices inconsistent with WTO disciplines (R. J. Garcia, personal communication, May 5th 2024a).

Trade-related investment measures (TRIMs). This agreement covers exclusively the trade of goods. The agreement recognizes that some investments will have distorting effects on trade, however it outlines prohibited investment measures without defining what a trade-related measure is. The prohibited measures are those that require a certain level of local content,

those that require local production or require some level of export. Additionally, a measure cannot require a balance of import and exports, a transfer of proprietary knowledge or technology to the domestic market or a balance of foreign inflows and outflows (International Trade Administration 2024b). The TRIMS agreement is another measure taken to prevent a government from applying policies inconsistent with the WTO disciplines (R. J. Garcia, personal communication, May 5th 2024b). In addition, the agreement lays forth the ruling that no TRIMs may be applied that are not consistent with article III, national treatment, or article XI, prohibition of quantitative restrictions. When signing onto this agreement, all members of the WTO were ordered to inform of any measures that did not meet the new requirements. They were then ordered to terminate all these investment measures within a period of two years for developed members, or five years for developing members. LDCs were given seven years for the termination of their investment measures. Any investment measures found to be in violation of this agreement, still in force after the allotted time were subject to dispute in the DSM.

Trade-Related Aspects of Intellectual Property Rights (TRIPs) "TRIPS Agreement" of the WTO, which plays a large role in facilitating the trade of knowledge on the international market. The WTO defines intellectual property as "creations of the mind" (WTO 2024u). Before the TRIPs agreement, protections around these creations were inconsistent around the world, and the WTO sought to bring predictability and conformity around a set system of rules.

The TRIPS agreement covers five areas: How the basic principles of international trade apply to intellectual property, what the minimum standards for protection of this property should be provided by members, which procedures should be used to enforce these standards, how to settle disputes involving intellectual property in the DSM, and finally special arrangements for the implementation of TRIPS provisions (WTO, 2024u). The agreement also features the main WTO tenants of not treating domestic nationals better than foreign nationals, and the MFN treatment of not discriminating between nations.

In the TRIPs agreement, seven types of intellectual property protections are defined (WTO, 2024u). The first is copyright, which is the right of an artist or author to their artistic work. Performers, broadcasting organizations and the creators of computer programs are also protected under copyright. The second type of intellectual property is the trademark. Trademarks cover logos or symbols used to differentiate goods from one supplier to another. These symbols are protected by the same trademark protection as the goods they are placed upon. Thirdly is the geographical indicator. These are words such as “Champagne” denoting that a sparkling wine is from the Champagne region of France. The agreement dictates that members of the WTO must bar products not from these regions to be listed with the same name, such as to not mislead consumers. Fourth is the industrial design. This is the outward appearance of a product rather than its technical specifications, and under the TRIPS agreement is protected for at least 10 years. Fifth is the patent.

For all fields of technology, a patent can be registered to protect inventions from being copied by competitors in the field. Both product and process are protected by patents, which last for at least 20 years under the agreement, and in the case of a process, the resulting product is also protected. A patent gives a list of minimum rights to the owner but gives governments the right to issue “compulsory licenses” on certain products such as medicines. Sixth is layout designs for integrated circuits. While aimed at providing at least 10 years of protection, integrated circuit designs are mostly protected by patents. Seventh and finally there are protections for undisclosed information, such as test data and trade secrets. For information to qualify for this type of protection, which can be enforceable by contract, it must have commercial value, be secret, and the owner has to take reasonable steps to keep the information secret.

TRIPS protect the rights of those who create new knowledge or technologies, but they also prevent knowledge from being freely used by those who need it. On the one hand, the TRIPS agreement allows for disputes to prevent countries from having rules that are lackluster in their aim to prevent intellectual property theft. This can for instance be seen in “DS#362 – Measures Affecting the Protection and Enforcement of Intellectual Property Rights” (WTO, 2024x). In this dispute, the US successfully argued that China was not doing enough to enforce the protection of intellectual property rights. On the other hand, preventing the free

flow of knowledge can have adverse effects on the development of economies. For developing countries, obtaining the license to use certain intellectual property might be an expensive or difficult process. This may lead to the illegal use or approximation of protected intellectual property by developing countries, though so far, only four disputes have invoked the TRIPS agreement against developing countries.

The General Agreement on Trade in Services (GATS) has been the least invoked agreement in the DSM. This is despite the services being the largest contributor to world GDP, at 64 percent in 2021 (O'Neill, 2024). Looking at developing countries, the GATS would be even less frequently invoked in disputes than for developed countries. This is because, traditionally, economic development has been viewed as going from relying on agriculture, to industry and manufacturing, before becoming dominated by services at the final stage of development (Gunther, 2024). Reaching an economy that primarily provides services rather than agricultural or industrial goods requires a level of development. It is therefore likely that a lot of the developing world has yet to reach a state where services will make up a significant number of disputes.

The GATS covers services that are supplied across borders, as well as foreign services that are consumed abroad. It also includes commercial presence, which is when a service provider originating in one country has a presence in the form of property, such as FDI, either owned or leased, in the territory of another WTO member. The last type of service provision that are covered by the GATS is natural persons, which is when a person enters another country than that of their origin to provide a service in that country. Members retain the rights to decide on the presence of natural persons in terms of allowing residence in their country.

The GATS also includes the rights of members to decide which services are allowed to be provided, as well as the amount of these services, in pursuit of their own political goals. These are both subject to MFN and national treatment rules, as members are not allowed to discriminate between domestic and foreign service providers when determining how much of a service can be provided on their territory. Members are required to publish all their measures of application of all rules regarding service provisions in their territories. There are special exemptions to the GATS for specific policy interests, where countries are free to implement special measures. These are namely regarding maintaining or protecting public

morals and public order, protection of human, animal and plant life, and securing compliance to laws or regulations. The latter has to be consistent with the agreement, for instance measures to combat fraudulent behavior. Developing countries have some special provisions in the form of the commitment of all members to strengthen the domestic services capacity as well as their access to distribution channels for services. Developing countries are also given permission to open fewer sectors to international services and liberalizing fewer types of transactions. These special provisions may also be a reason why services are so rarely invoked in disputes involving services.

3.1.4 Developing Countries and WTO Agreements

Developing countries are, as all members of the WTO, committed to the agreements listed above. These commitments tie countries to complying with the WTO regulations, otherwise be targeted by disputes, and instructed to comply, should they be found in violation of their commitments. The problem with such a system for developing countries in particular is the reduction in policy space that this allows for. Countries undergoing development are not allowed to implement certain programs or systems to help establish their industries. This can be in the form of not being allowed to introduce export subsidies to help domestic industries gain a foothold in the international markets, or subsidies for production to help relieve the reliance on foreign producers. An example of the latter is from Indonesia, where a program to further domestic manufacturing of automobiles was challenged by the EU, the US and Japan by disputes (Kragelund 2015).

The binding of tariffs was also meant to provide predictability and transparency for trading partners, however, for many the bound tariff has become a negotiating tool. Developed countries will often have high bound tariffs, then apply low ones (Brown 2009). This leads to a lack of predictability, when a large economic conglomerate such as the EU can raise its tariffs nearly fourfold on nonagricultural goods. The problem does not just lie with developed countries and their bound rates, however. Developing countries often bind their rates even higher, India has negotiated a bound rate of 114% on agricultural goods, compared to the 5% of the US. This means that trading between developing countries is made more difficult. This prohibition of domestic support also hamstrings the policy space that would otherwise be

useful for diversifying an economy, as new and emerging industries cannot be given the full support a government may wish to provide for domestic producers.

The TRIPs agreement has brought an imbalance as well. The protection of intellectual property, while important, has meant that it is hard for developing countries to make use of new knowledge and technology, as it is protected by licenses. There is also a power imbalance where most patents are filed in developed countries such as the US, and the filing of intellectual property protections is over ten times more such likely to occur in developed countries than in developing ones (UNCTAD, 2024). Even getting a geographical recognized as a protected label can be a resource demanding endeavor, that many developing countries simply cannot afford to undertake. Overall, while the WTO attempts to bring fairness and balance to the trading system, there are still considerations that need to be made to help developing countries continue to evolve as economies.

3.2 Literature Review

Some of the literature will come directly from the WTO, as it is the main organization looked at in this thesis. This will be in the form of the dispute reports, as well as official policies the organization operates with. The WTO also outlines the procedures through which the disputes are settled, allowing insight into the procedural fairness of the settlements. The dispute reports, as well as all official WTO documents are from 1995 and later, with reports being excluded after 2022.

3.2.1 Critiques of the Multilateral system and its effects on Policy space

To weigh in on the debate of the merits of WTO membership for developing countries and how it affects their ability to utilize their policy space, it is important to understand what those critical of the WTO have said. Watkins (2001) presented a list of eight promises the WTO made to developing countries that were at the time of his writing not followed up on. These promises were a lack of open markets for poor countries, the continuation of agricultural protection policies and little improvement in market access for textiles. The remaining promises were that LDCs would receive a better deal, action would be taken in Africa, global patent rules would safeguard health in poor countries, developing countries would receive

technical assistance and finally that the WTO would assist in creating the necessary conditions for sustained growth for poor countries. This critique was made during the period of 1995 to 2001, prior to the Doha round of negotiations. Seeing what critics had to say about the treatment of developing countries in the WTO prior to Doha can be of assistance to understand how the organization has developed over the past two decades.

Policy space is the idea that governments can make the rulings they deem to be the best within their own country. Essentially, it is the boundaries within which a government can design policy to promote its social objectives. Joining a multilateral organization and signing off on agreements can come with commitments that will limit this policy space. An example of this can be the commitment of WTO members to prohibit export subsidies on industrial goods and discontinue the use of agricultural export subsidies in 2020 (WTO 2024h). This is an increment on policy space as it disallows governments from using the tools of export subsidies even if they believe it is the best course of action. Policy space has been a debate with regards to WTO membership, especially for developing countries.

Brown (2009) discusses the critique that agreements from the GATT and the WTO are inherently unfavorable to developing countries. The author goes as far as to state that "if one were to write a multilateral trade agreement designed to completely disregard the interest of developing countries many features of the current agreement would provide a template for how to start" (Brown, 2009). Brown goes on to bring up tariff bindings, and how they provide difficulties for developing countries, as many nations will bind high tariffs, only to apply much lower ones. This reduces predictability for potential trading partners, and disincentivizes investment into these sectors. This is especially true for developing countries, where resources are scarce. Conversely, Brown also argues that developing countries have not sufficiently bound tariff rates for enough of their imports, using Chad's 13.5% and Bangladesh's 15.5% as examples of this. This is not a fault of the WTO, but of how the governments of these countries have negotiated in the WTO. What this means is that the governments of these countries can impose much higher tariff rates on imports than in developed nations. This might seem good for domestic producers, but limiting access to imports of technology and materials for production leads to a stagnancy in their development, as resources from the companies cannot go to research and development. It also means a much higher price towards their consumers. While this is a case of the WTO allowing policy

space, this is a place where it has been used to limit development. Brown highlights more problems with the tariff rates, and with systems such as the DSM not being strict enough with its wealthier members when they implement policies that would otherwise be prohibited. One such example of not being strict enough is when it comes to trade-distorting agricultural subsidies, Brown argues. Brown concludes that there seem to be two distinct WTO's, one for rich countries and one for poor ones. While the systems in place are intended to be fair and provide a well-functioning organization for all members, the systems in place are not nearly as beneficial for developing countries as they are for developed countries. This is because the negotiated tariffs and agreements at the time had disproportionately affected industries important to developing countries, such as agriculture.

Hoekman (2005) argues that differential treatment with regards to developing countries and their policy space might be needed. This is because, among other things, that the burden of adjusting to commitments and agreements is relatively larger for a poorer country. A wealthier country will be more equipped to handle the adjustment towards conforming to a commitment that affects their local industries than a developing country would be. This is simply due to the ability to tackle the costs that come with the adjustment. Hoekman argues that there must be some distinction between the market access and rule-making parts of the WTO. This would involve three steps: developing countries accepting the core principles of the WTO, a new set of "enabling" rules within the organization, and credible commitments from wealthier countries to aid developing countries in benefiting from trade agreements.

Khan (2007) argues that the policy space of countries is closing. Looking especially at low-income countries from the 1980s to the early 2000s, Khan argues that the GATT/WTO and the IMF have a negative impact on policy space, and therefore economic development. The pressure to liberalize trade and use far lower tariff rates than the bound rates they have negotiated. The study compares the bound rates that low-income countries have negotiated in the WTO to the applied tariff rates, and if this comes in a period when the country is trying to appease the IMF due to loans. Doing this, they found a significant connection between the size of the gap between the bound and applied tariffs and being a low-income country when compared to a higher income country. The IMF can achieve this by leveraging poorer countries needs for loans or grants and tying this to meeting IMF expectations. While this is

not necessarily the fault of the WTO, it serves as a reflection of the experiences of poorer countries with multilateralism. Khan looks at the political restructuring as a result of letters of intent signed. Doing this, the study found that 91% of LICs were subject to structural adjustments via the signing of these. While the study offers a negative view of membership on policy space, it acknowledges that countries still seek membership as well as conformity to the rules, meaning that most governments seem to be of the opinion that the positives outweigh the negatives.

Mayer (2009) offers a contrasting view to Khan. Similarly to Khan, Mayer looks at countries from the 1980s until the early 2000s. Rather than accepting a shrinking policy space, or seeking to reform the WTO and its agreements, Mayer offers a secondary solution. To seek increases in policy space elsewhere. This can come from other areas of macroeconomic policy. Through an article based on prior research, Mayer argues that trade policy does not have to be the be all end all of economic policy space. Rather, exchange rates, income and monitoring short-term financial inflows can all be utilized by a government to efficiently enact policy to affect their economic development. Applying monetary and fiscal policy in this way would comply with WTO agreements, while still allowing a country to make policy changes as it seeks to develop its economy. These changes might be to monetary policy rather than trade policy, such as interest rate adjustments. In this way, fiscal and monetary policy can accomplish the same goals as trade policy, and the policy space must be made here instead. The article argues the benefits of international integration are only increasing, though differently for countries of different levels of development. Finding a balance between integration and the amount of freedom governments have in developing national policy seems to lean in favor of increasing economic integration on a global level.

Policy space was again brought up in relation to the sharing of information and intellectual property rights. Shalden (2005) focuses on the relationship between the creation of knowledge and the use of this knowledge as it relates to WTO regulations. In this case, TRIPs are the agreements in question. While TRIPs increase the incentive to create knowledge, the protection of intellectual property through patents and copyright make it harder for information to be shared between parties. This also exacerbates the divide between developed and developing countries as well, as most patents are registered in developed countries.

According to Shalden, close to 80 percent of all patents between 1995 and 2004 were registered in the USA, Japan and Germany. By contrast, the ten developing countries with the most patents registered represented only about seven percent. While the Doha round confirmed the right of developing countries to take out compulsory licenses on certain IPs, especially with regards to public health. The debate over this licensing argues that it disincentives the development of new knowledge, however, as it allows other nations to utilize new information from other WTO members.

The WTO is locked in a difficult balance between allowing its members the right to own their research and new knowledge, and allowing information to flow freely, and allow knowledge to be utilized. Shalden goes on to recommend that the developing countries of the WTO seek to make the compulsory licenses on medicine permanent, as well as limit the number of patents that can be put on more generic goods. He also recommends that the policy space close further, by increasing the power of the WTO as a coordinating force of economic policy on the multilateral level. This will come as a tradeoff between multinational cooperation, and the policy space of each individual nation to do as they see fit.

Lee, Shin, and Shin (2015) look at the global renewed interest in industrial policy after 2008 and into the post-2015 era. The study also looks at the WTO between 1995 and 2010. Following the financial crisis of 2008, countries, both developed and developing, started looking toward policies to increase bolster their production and increase their competitiveness on the international market. With this renewed interest in industrial policy comes renewed discussion of the policy space each country is allowed. The authors note that while some have argued that limits to policy space would impose limits to the development potential of a country, others argue that such limits may be beneficial for the global economy, as gains on the international market are made at the expense of other countries. The latter forms the basis for the argument for the WTO and its rules and agreements. The authors argue, however, that the limitations on policy space affect countries asymmetrically, with developed countries seeing far less pushback on their policies than middle-income countries do.

Making findings similar to those of this thesis, the study goes on to negotiate the asymmetric treatment of policy space in the WTO, between 1995 and 2010. The authors describe an asymmetricity in not only the participation of countries of different economic status but also in compliance with rulings. If a country is found in violation of a ruling, then they are advised to comply with the WTO commitments and remove the offending policy, however, if the country fails to comply with the rulings, then the offended party is allowed to retaliate. However, retaliating against one of the largest economies in the world is not always a straightforward process, and not always enough to mend injury to the domestic market. The paper mentions a case in which Antigua and Barbuda were locked out of the US gambling market, the largest market in the world, and despite winning the dispute, did not receive anywhere near the compensation it had sought. The US instead withdrew gambling from the services it had opened up to the international market. Thus, Antigua and Barbuda were locked out of the largest online gambling market in the world, despite having won their dispute. The study also finds examples of the economic south as respondents, such as the Indonesian car market being subject to disputes in 1996, after the government attempted to build a domestic car manufacturing industry by reducing the country's reliance on foreign manufacturers. The move was met by disputes from the EU, Japan and the US, effectively killing the motion and leaving the Indonesian car manufacturing industry stagnant.

Kragelund (2015) looks at policy space for developing countries as it relates to cooperating with wealthier partners, such as China and the OECD. The period of the study is 2000 to 2015, though examples in the paper go back into the early 20th century. The paper looks at Africa as the platform for development, and how the policy space of different African countries has been affected as a tradeoff for receiving aid and economic opportunities from the economic north. The Development Assistance Committee, DAC, has placed the policy space of African nations at its center, as it is considered to enhance the effectiveness of any aid given to the nation. As it is understood, aid does not directly affect the sovereignty of a nation, though policy space on the other hand may be influenced. This is because aid is often conditional, and often so on the receiving end conforming to the wishes of the donor. Thus, the policy space for developing nations, in this study those in Africa, has been closing in order to appease the goals of donors. The study claims that the end of the cold war marked a reduction in interest from the economic powers of the world. This is because during the cold war, the interests of the west and those of the east drew them to be invested in cooperation

with African nations, and thus the aid receiving nations could leverage the fact that they had two diametrically opposed donors both vying for their cooperation. This gave the African nations the space to negotiate deals that would allow them to keep as much policy space as possible.

After the cold war, this interest dwindled as eastern bloc countries ended their aid programs, and with them, the policy space they allowed Africa to negotiate. The rise of China's interest in Africa would be the resurgence of this leverage. Now, Africa could play the interests of China versus the interests of the OECD to negotiate aid deals that allowed for the retainment of policy space. China provided a tempting offer for cooperation, especially given their seeming attentiveness to state-driven growth and agriculture. After the financial crisis of 2008, which seemingly originated in the OECD countries, China was an even more attractive partner. China assisted in development, and quickly became a major lender and financier of projects such as hydropower in Ethiopia, surpassing the World Bank. The paper notes, however, that the aid coming not only from China, but other emerging donors to African nations, is mostly directed toward the resource-rich countries, while the resource-poor countries see little to no interest. These countries therefore also lost out on the negotiating leverage for policy space that these new donors would have afforded them. Over time though, China and other emerging donors would begin to cooperate with the OECD in their development efforts for Africa. This means the end of opposing views for donors once again, and the leverage for policy space is shrinking. This comes as a byproduct of for instance the trilateral development cooperation program, which seeks to bring an OECD country, an emerging donor, and an African nation together to utilize the strength of all three to further development. However, with this comes the problem that the OECD nation often controls the resources, sets up the monitoring processes and initiates the cooperation. This means that there may not be as much benefit to the receiving country as expected. The trilateral development cooperation program is fairly new, but skeptics are worried that it is a step backwards to the OECD countries providing aid in exchange for limiting policy space.

3.2.2 The DSM

Horn and Mavroidis (2008) offer insight into the DSM. Their study sheds light on the process of the DSM, as well as the participation of countries by classification. For the period of January 1st, 1995, through October 25th, 2006, they look at all 351 requests for consultation. The classification they have opted to use is one of G2, industrialized- and developing countries, and LDCs. G2 countries including the European Community and the United States. Though this classification might make analysis easier within the confines of the variables the study puts forth, it will not be used for this thesis. This is due to issues with the way developing countries are separated from industrialized ones. In their study, industrialized countries are simply those that are members of the OECD or have become members of the EC. They also claim to have included in the industrial category countries with high income per capita that are not members of the OECD, yet this seems inconsistent as it leaves historically wealthy countries such as Qatar and Saudi Arabia defined as developing countries. This is despite Qatar having a higher GDP per capita than their example country of Singapore for the past six years prior to the study (World Bank, 2024b). Despite this inconsistency with the classification, the study lays forth an interesting groundwork for analysis of the DSM. This is especially true for their findings around the participation of countries, as well as the direction of disputes involving the EC and US, being mostly as respondents rather than complainants. The study finds that LDCs are barely participating in the DSM at all. The study also concludes that it appears that developing countries are participating, despite classifying certain countries like China and Mexico, notoriously active in the DSM, as not developing. Finally, the study finds that there is less of a dominance in the DSM by those countries they classify as G2 countries than the authors had expected.

The debate over how being a member of the WTO affects a developing country has been a long one. Some authors and studies have found that membership opens countries up to receiving the same MFN treatment as other WTO members, allowing them to trade without discrimination on the global market. Critics have argued that developing countries are disproportionately affected by the negatives, like high bound tariff rates on their primary exports. The debate around policy space has also provided insight into how countries are affected by multilateral agreements. While there are those critics that argue that membership in the WTO does more harm than good by reducing the ability of a government to take the best course of action for their country's development, others argue that policies must simply

be formed in other spaces, such as monetary policy. There is much criticism of how developing countries have been treated in the WTO, yet the organization keeps growing, gaining its latest member in 2016. The DSM has also been in focus, as it has been criticized for being unfairly weighted in favor of developed countries. In chapter 4, this study will explore how the statistical outcome of disputes involving developing countries can be hinted at through analyzing the characteristics of the disputes.

4. Method and Modelling

Trade disputes handled in the WTO are available at the WTO website related to dispute settlement (WTO 2024j). These are listed by status. For the purposes of further analysis, only those listed as having been ruled in favor a participating country will be used, as those have a decided "victor". GDP per capita data are from the World Bank where possible (World Bank 2024c). For Taiwan's GDP per capita, data from the IMF are used (IMF 2024). The World Bank categorizes countries into four income groups. These are low, lower-middle, upper-middle, and high income. The World bank provides historical data for all countries or territories that report their economic statistics separately (World Bank 2024a).

The WTO allows countries to self-define themselves as developed or developing, not based on income. However, a notable exception are the least developed countries, the 35 countries which receive differential treatment. The WTO does provide a list of developing countries in their trade facilitation agreement, which was combined with the list of least developed countries to create the list of countries listed ass developing in the WTO. The list of countries from the WTO's trade facilitation agreements is referenced against the historical income data from the World Bank to get an overview of which are upper-middle income or above countries are being classified as developing in the WTO. The WTO makes its members and their join date public (WTO 2024e). Most of these will be listed as January 1st, as these countries were members of the GATT and therefore immediately joined the WTO upon its formation. Going into each member's profile on the WTO website gives information on if a country was a member of the GATT, and their join date.

To look at a causal relationship between being a developed country in the WTO and results from DSM cases, we must create a dataset of the cases and relevant variables. Having categorized which countries are considered developing at the WTO, it is possible to identify which disputes involve developing and developed countries. The variables "complainant" and "defendant" indicate which countries are active participants in a respective dispute.

This allows one to see how many cases are initiated by developing countries compared to developed countries, as well as to allow an analysis of whether a developing country initiates a dispute matters to the eventual result. This variable is called "Com_dev", for the

complainant is a developing country, in the dataset. If instead the developing country is a defendant in a dispute, the variable “Def_dev” is used.

The variable “win_dev” denotes whether a developing country wins a dispute. It is a variable with only two possible outcomes, 1 and 0. If the “victor” of a dispute is a developing country this variable has a value of 1, and zero if it loses. This variable only has values for disputes in which developing countries participate. The “Win_dev” variable serves as the dependent variable for the model that is constructed. The objective of the study is to analyze how the DSM has affected the developing countries, so cases that do not involve developing countries are omitted. Disputes that have a developing country as both the defendant and the complainant will be included, and counted as a win for the developing countries, as they serve to prove that these countries are participating in the DSM. These cases also give insight into what characteristics are common for disputes involving developing countries.

The variables “GDP_def” and “GDP_com” represent the gross domestic product (GDP) per capita of the defendant and complainant in the disputes. These aim to see if there is any connection between the victor of disputes involving developing countries, and the GDP per capita, here used as a proxy for economic power, of the participants. These are both presented as USD in the year the dispute was initiated. These were later transformed into their natural logarithms. This was done to normalize their distribution, as well as to standardize the variables. While the other variables in the model are either dummy variables with a value of 1 or 0, categorical with values up to 4, or the MEMBYCOM or MEMBYDEF variables who have maximum values of 74, the GDP variables would have values of over 50 thousand. To get the model to converge when two of the variables has values magnitudes higher than the rest, the natural logarithms of these two variables were used instead.

The MEMBYCOM and MEMBYDEF variables are numerical variables that indicate how long a complainant and a defendant have been members of the WTO or the GATT at the time of the dispute. These numbers will give an indication of whether the complainant or the defendant being a longer standing member of the organization is a benefit to if the developing country wins the dispute it is involved in. If, for example, a country has been a member of the GATT since 1948 and is the defendant in a dispute that takes place in 1998, then the value of the MEMBYDEF variable will be 50. It would stand to reason that in a dispute, having more

experience in the organization is a positive, and so it is expected that these variables will show a significant impact on the odds of the victor being a developing country.

Part of the objective of the study is to see whether the type of dispute plays into the odds of a developing country being victorious in their disputes. As such, more variables were added to take into account the nature of the dispute. The DUMP variable is a dummy that represents disputes that deal with dumping, mostly in the form of anti-dumping measures taken by the respondent. It has values of 1 and 0, 1 denoting that dumping was invoked in the dispute. It is interesting to get a look at how many disputes involve dumping, as well as the direction of these disputes and the effect of dumping being invoked on the outcome of disputes. This is because if there is a clear pattern, for instance, if that was only developed countries disputing alleged anti-dumping policies of developing countries it could indicate that there is either a pattern of overt protectionism from developing countries, or an attempt at limiting the ability of these countries to protect their industries from the international market. The DUMP variable is most frequently used to denote when a country disputes the anti-dumping measures taken by another country. The AG variable deals with agricultural disputes. Similarly to the DUMP variable, the AG variable is also a dummy, with a value of 1 for disputes that deal with food, textiles and other goods derived from agricultural activities and 0 otherwise. Agriculture makes up roughly 29% of the GDP of developing countries, so getting an overview of how the DSM has treated cases involving the sector can give insight into potential harm. In the case that the variable turns out to be significantly negative, or benefit in the case that the variable is significantly positive.

The PILLAR variable is a categorical variable. It has values from 1 to 4, each denoting a different kind of dispute. A value of 1 denotes that the dispute deals with market access. These disputes are mostly about import duties, countervailing measures or anti-dumping measures. These are also about TBT or SPS measures that are hindering foreign producers from accessing a market. While many of these will also be noted as cases involving dumping, the category itself serves to quantify which types of disputes are being filed. A value of 2 refers to the use of subsidies beyond support. A value of 3 denotes that export subsidies or other export-disrupting activities are taking place. This can for instance be a restriction on the quantity of a good that a country is willing to allow its producers to export. A value of 4

denotes disputes involving intellectual property, and the TRIPs agreement. Of the disputes in the dataset, only four of them fall under the category of TRIPs, and of these, all were filed by developed countries, namely the EU and the US, against China and India for selling products protected by copyright.

"Lowinc" is another dummy variable that is added to the dataset. It has values of 1 and 0, where 1 implies that the country is not only listed as a developing country in the WTO, but also has an income of lower-middle or low in the World Bank at the time of the dispute. This variable is added to see if being listed as a developing country in the WTO while being of upper-middle or above income is a benefit, perhaps unfairly so, in the DSM. Interpreting this variable will mean looking at the sign of the coefficient. If the coefficient is positive, it implies that countries that are both listed as developing in the WTO and an LIC in the World Bank has a positive impact on the odds of winning a dispute. Conversely, a negative coefficient would imply that having an income of upper-middle or above while being listed as developing at the WTO increases a country's odds of winning the dispute.

The dataset also includes the sector affected by the disputes, called "sector" in the dataset, to see which sectors are most disputed. It also contains the variable "type", which displays the type of dispute, or which agreement is most prominently questioned in the disputes. These two variables have no numerical values, they exist to allow for easier quantification of the types of disputes and the sectors affected by them.

A TREND variable is included, with which the aim is to capture a trend in the DSM regarding developing countries. If the TREND value is found to be significant, we can ascertain that the DSM has been trending towards a certain treatment of developing countries. It is taken as a value of 1 in 1995, 2 in 1996 and so on until 2022. The year variable is simply known as "TREND" in the dataset. The sign of the coefficient would imply either a positive development, as far as the odds of a developing country winning a dispute goes, should the coefficient be positive, or a negative one if the coefficient was negative. If this variable is significant, it would also be interesting to divide the dataset into shorter timeframes, and look more closely at the periods of time the variable implies is less fair, determined by which sign

the coefficient has, and see if there is a cutoff year where the fairness improves for developing countries.

4.1 Model

The model that is constructed is represented by equation (1):

$$Win_{dev} = \alpha + TREND + \beta_1 GDP\_def + \beta_2 GDP\_com + \beta_3 MEMBYDEF + \beta_4 MEMBYCOM + \beta_5 DUMP + \beta_6 PILLAR + \beta_7 AG + \beta_8 Lowinc + \varepsilon \quad (1)$$

Where "win_dev" takes on a value of 1 or 0, depending on whether a developing country the dependent variable for the number of cases won by a developing country. MEMBYCOM and MEMBYDEF represent the number of years the complainant and defendant since the country has been a member of the multilateral trading system, the GATT and/or WTO. DUMP is a dummy variable that takes the value 1 or 0 depending on whether or not a case involves a dumping allegation. PILLAR is a categorical variable that takes on values from 1 to 4, depending on which type of dispute it is. A value of 1 denotes a dispute related to market access, a value of 2 a dispute over subsidies not directly linked to export, a value of 3 denotes a dispute involving export subsidies or other prohibited export measures. A value of 4 denotes a dispute involving intellectual property. AG is a variable that takes on the values 1 if the dispute involves agricultural goods as a main sector, and a value of 0 means that agriculture is not an important issue in the dispute; and ε is the error term.

Because "win_dev" is a dummy variable with the only two possible values being 1 and 0, it makes sense to use a logit model for this analysis. Logit models are specifically designed to provide output as odds affecting the binary outcome of the dependent variable. Using this will mean that each of the coefficients of the independent variables will represent how they contribute, as well as the direction of the change in the odds that the dependent variable will have a value of 1.

In the model α represent the intercept of the model, while TREND, MEMBYCOM, MEMBYDEF, DUMP, GROUP, AG, ln_comp, ln_def, PILLAR and Lowinc make up the independent variables. PILLAR is also wrapped in brackets with a "c" in front to denote that it is a categorical variable.

The model was tested for heteroskedasticity, serial correlation and multicollinearity. Heteroskedasticity occurs when the variance of the error term is not constant for all coefficients. This can lead to biased estimations from our model. These estimations may then cause incorrect interpretations of both the dependent variable and the independent variables. The model was tested using a Goldfeld-Quant test, as it is a logit model, to see if there were signs of heteroskedasticity.

Serial correlation may occur when values of the residuals in the model are related to each other at different times. This is a concern for the model used in this study, as over time the GDP per capita of countries is likely to have increased, meaning that there may be correlation between the "TREND", "MEMBYCOM/DEF" variables and the "GDP_def" and "GDP_com" variables. Serial correlation in the model was tested for using a Durbin-Watson test. Multicollinearity was tested for using variance inflator factors. These factors provide a set of values denoting how much multicollinearity affects the variance of the coefficient of a variable. Multicollinearity may occur if two or more of the independent variables in the model are correlated with one another. This is a concern for the same reasons as serial correlation is a concern in the model, as well as the potential correlation between "TREND" and the "MEMBYCOM/DEF" variables.

5. Discussion of results

5.1 The Testing the model

The model was tested for heteroskedasticity using a Goldfeld-Quant test. From this test the current function value ended up being just under 0.32 and the p-value ended up being roughly 0.73. Since the p-value is above 0.05 there is not enough evidence to suggest that there is a violation of the null hypothesis of this test, which is that no heteroskedasticity is present. Thus, the conclusion is that there is no heteroskedasticity, and the model will not give biased or inconsistent estimates for the variables. The current function value meant that the model was an appropriate fit of the logistic regression to the data.

Testing for serial correlation was done with a Durbin-Watson test. This test allowed us to see if there was any indication that there were variables that were correlated with each other over time. This test yielded the same current function value as the Goldfeld-Quant test, and a Durbin-Watson statistic of 1.63. This indicates that there is a slight degree of serial correlation in the model. For this reason, the model was run with a covariance type of "HC3", which accounts for the positive serial correlation in the model.

The model was tested for multicollinearity using variance inflator factors. These factors use a threshold of 10 to indicate multicollinearity in the model. The results from obtaining these factors are shown in table 3:

Table 3. Variance inflator factors.

Variance inflator factors:	
Variable	**VIF**
Intercept	487.30
C(PILLAR)[T.2]	1.08
C(PILLAR)[T.3]	1.12
C(PILLAR)[T.4]	1.15
GDP_Com	3.22
GDP_Def	2.83

MEMBYCOM	1.30
MEMBYDEF	1.41
TREND	1.40
AG	1.14
DUMP	1.22
Lowinc	2.30

The variance inflator factors indicate if there are any signs of multicollinearity in the logit model. For there to be signs of multicollinearity, the VIF for a variable should be over 10. In this model, the only variable with a VIF greater than 10 is the intercept, which has a VIF of 487.30. This would seem to indicate that there is some level of multicollinearity within the model, as the VIF is so high, however, since the intercept itself is not a predictor variable, this is not much of a concern for the interpretation of the model. As such, the high VIF value for the intercept will be ignored for the remainder of the study.

5.2 The Logit Regression model

What we can see from the results are as follows:

The model has a pseudo R-squared of 0.5681, meaning that it explains roughly 57% of the variance in the "win_dev" variable. Of course, the outcome of each dispute is influenced not only by the variables chosen for this model, but also by the agreements invoked, and the findings of the DSM panel. These decisions are based on the panel's understanding of the agreements, the points presented by the complainant and the counterarguments raised by the defendant. It is still interesting to get a statistical overview of how these factors impact the likelihood of the outcome of a dispute going in favor of a developing country, as well as how they impact the likelihood of a complainant getting the offending policy taken by the defendant changed.

The results of running the Logit regression of equation (1) are shown below in table 4:

Table 4: Logit regression results, coefficients, Std errors and P-values.

Variable	**Coefficient**	**Std Error**	**P-value**
Intercept	20.0970	7.782	0.010***
C(PILLAR)[T.2]	0.0196	0.756	0.979
C(PILLAR)[T.3]	0.8439	1.042	0.418
C(PILLAR)[T.4]	-9.4829	1.333	0.000***
GDP_Com	-1.4770	0.496	0.003***
GDP_Def	-0.4933	0.471	0.295
MEMBYCOM	-0.0839	0.028	0.003***
MEMBYDEF	0.06	0.018	0.002***
TREND	0.0033	0.042	0.936
AG	-0.7073	0.596	0.296
DUMP	2.5614	0.741	0.001***
Lowinc	-2.4243	1.043	0.020**

In table 4, the statistical significance of the variables is denoted by the number of asterisks behind the number. No asterisk means that the variable is not significant at the 10% level. The variables that are not statistically significant at the 10% level are PILLAR values 2 and 3, subsidies and other support, as well as export subsidies. TREND and AG are also not significant at the 10% level. A single asterisk would have meant that a variable was significant at the 10% level, but not at the 5% or 1% level. There are no variables in the model that have this level of significance. Two asterisks means that the variable is significant at the 5% level, but not at the 1% level. Three asterisks means that a variable is significant at the 1% level.

The significance of the variables will be interpreted in accordance with a 5% level. This means that variables with a p-value of less than 0.05, denoted by two asterisks in table 4, will be considered to have a significant impact on the outcome of the disputes. The significant variables include the intercept, “PILLAR” category 4, intellectual property, “GDP_com”, the natural log of the GDP per capita of the complainant, “MEMBYCOM” and “MEMBYDEF”,

the years of membership of the complainant and defendant, respectively, at the time of the dispute. “DUMP”, the disputes that involve dumping, most of which are cases involving anti-dumping regulations hindering market access. And “Lowinc”, which denotes that a country is not only listed as developing in the WTO’s trade facilitation agreement, but that also have an income status of lower-middle or below.

The first of the significant variables is the intercept. This can be explained by the fact that the model combined the interception and the categorical value 1 from the “PILLAR” variable. The intercept represents the log-odds of the dependent variable, in this case the “win_dev” variable to be 1, or the chance of the victor of the dispute to be a developing country. The intercept includes the values of the first value for the “PILLAR” variable as a reference value. It is likely made significant by that fact. The first value of the “PILLAR" variable is the one that denotes that a dispute involves matters of market access. This is 119 of the 141 disputes, and slightly favors developing countries, as 60 of their dispute wins were market access related. That is just barely over half, at 50.42% of disputes. As such,

Category 4 of “PILLAR” is related to intellectual property and the TRIPs agreement. The variable has a large negative coefficient of -9.4829, meaning that for each of the disputes dealing with intellectual property, the log odds of the developing country being the victor is reduced by 9.4829 units. Out of the disputes in the dataset used for the regression model, only four dealt with intellectual property, all of them with the developing country as the defendant, and all of them lost by the developing country. This makes sense, as developed countries have more resources for research and development, and as such, will own more intellectual property. In the least developed countries, only 2197 filings for trademarks, a common way to protect IPs, are filed, compared to the global average of 26034 (UNCTAD 2024). It is therefore more likely that a developed country would have existing IP’s than a developing country, and so it is unsurprising that the disputes featuring TRIPS have a developed complainant and a developing defendant.

The natural log of the GDP per capita of the complainant is negative and significant. GDP per capita is used as a proxy for economic power. Unsurprisingly, the negative coefficient implies that the log odds of the dispute ending in a victory for the developing country decreases by 1.4770 units for each unit increased by the GDP per capita of the complainant country. This

points to a power imbalance, where the wealthier countries are winning more disputes against poor countries. This is further backed up by the summary statistics. In the dataset only 69 of the 141 disputes were won by developing countries. While this could be explained by the complainant winning most of the disputes they initiate, only 62 of the dispute victories for developing countries came from cases they initiated, despite being the initiator in 76. This also accounts for disputes between two developing countries, which is counted as a win for the developing countries, as well as both initiation and defense. The developed countries initiated the remaining 68 disputes. Of these, developing countries won four, further backing up the idea that the complainant wins most of the disputes they initiate.

"MEMBYCOM" and "MEMBYDEF" were intended to see if being a member for longer leads to a higher probability of winning a case due to experience with the multilateral process. What the results suggest is that the longer a complainant has been a member has a small yet statistically significant negative effect on the probability that a developing country is the victor in the dispute. Conversely, the defendant having been a member for longer is suggested to have an equally small, yet again significant, positive effect on the likelihood of the developing country being victorious in the dispute. This is as expected, as being a member of the multilateral system for longer would indicate more experience with the system. It is also expected because China, a country that did not join the WTO until 2001, was the target of a large number of disputes, and the defendant had a lower chance of winning than the complainant. As such, the number of years that the less targeted developing countries had been members would stand out as a positive indicator of dispute victory. For each year of membership for the complainant, the log odds of the developing country winning goes down by 0.0839 units. Conversely, for each year the defendant has been a member the odds go up by around 0.0556 units. This implies that being a member for longer, having more experience in the WTO and GATT regulations, is a benefit when dealing with disputes. The small size of the effect of these variables is not surprising, with the average member years of complainants being 43.63 years and the member years of the defendants being 41.72 years. There is also the case of developing countries representing 76 of the complainants and 88 of the defendants, sometimes disputing against one another, and as such showing newer members winning disputes. Some developing countries have also been members of the GATT since 1948, such as Argentina and Brazil, having the same value for their "MEMBYCOM" and "MEMBYDEF" variables as the developed countries.

The “DUMP” variable is also significant at the 5% level. This variable shows if a dispute involved some mention of dumping. The dispute in these cases were about anti-dumping measures which restricted market access (by definition). Every single one of the disputes involving dumping also dealt with market access restrictions. Anti-dumping made up 31,21% the 141 disputes that dealt with developing countries, and of these the developing countries won 61.36%. Out of the 44 disputes involving anti-dumping, developing countries were the complainant in 33 and the defendant in 22, with nine disputes where they featured on both sides. This means that developing countries are more often accused of dumping, and then dispute the anti-dumping measures taken. These measures were taken by developed countries and developing countries the same number of times, at 22. This is why it is unsurprising that for a dispute to involve a mention of dumping has a significant and positive effect on the probability of the victor being a developing country. When a dispute involves dumping, the log odds of the developing country being victorious increases by 2.5614 units.

“Lowinc” was meant to capture whether there is a difference in the success of LIC’s versus the countries that despite being middle or above in income were listed as developing in the WTO’s trade facilitation agreement. Developing countries as listed in the WTO include some historically well-off countries, such as Chinese Taipei, the Republic of Korea and Argentina. These countries, despite being listed as developing the dataset and in the WTO’s TFA, have a “Lowinc” value of 0 to denote that they are not what the World Bank would consider developing from a wealth perspective. Being a wealthier country would mean having more resources to devote to dispute settlement. These countries would then have a higher chance of being victorious in the disputes they partake in. This variable is significant and has a negative coefficient. Thus, there exists statistical evidence to suggest that being a middle- or above-income country listed as a developing country in the WTO gives an advantage compared to LIC’s in dispute settlement. The variable has a value of 1 if a country is an LIC. For each dispute with this value being 1, there is a loss in the log odds of the developing country being victorious in their dispute by 2.4243 units. The WTO provides assistance to developing countries in terms of dispute settlement assistance and finding that wealthier members are winning more while being listed as developing within the organization can be a cause for concern, and a signal that some stricter requirements for who can receive this aid might be needed.

5.3 Research questions:

5.3.1 Do developing countries participate in the DSM? If so, do they participate as complainants or simply as defendants?

Looking at the distribution of countries participating in the DSM, developing countries are participate in the process, and at close to the rate of the developed countries. There is a wide range of developing countries in the WTO, with 125 out of 164, or 76.21% of countries classified as developing in the organization, as per the TFA list. Of the 203 disputes that have gone to negotiations in the study period, 141 were participated in by developing countries. Developing countries are also not simply defending their policies, but actively disputing the policies made by other countries. Of the 141 disputes developing countries participated in, 76 were initiated by the developing countries. This means that for the study period they have initiated just as many disputes as they have been complained about in the DSM. There is some level of "infighting" between developing countries, as there are 15 disputes between two developing countries, but this is not enough to change the idea that they are participating in the DSM. Looking at the total of developing countries, the most popular sectors and types of disputes were manufacturing at 57 out of 141 and agriculture at 52 out of 141. Dumping was also often invoked, at 40 disputes discussing dumping. The Republic of Korea and China were the most represented in the manufacturing disputes, with China appearing in 16 of the 57 disputes, as the complainant only twice, while Korea appearing in 10, eight of which as the complainant. Japan filed seven and responded to one dispute about manufacturing, while Brazil filed two disputes and were the respondent of five. Indonesia rounded out the five most disputed manufacturing nations with six disputes, all as the respondent. Out of 57 manufacturing disputes, 46 were about market access restrictions in some form where 10 were about anti-dumping measures imposed on imports. Three disputes were targeted at China for export restrictions. On the agricultural side, the Republic of Korea again was the most prominent nation, with seven disputes, all of them as the defendant. Mexico participated in six disputes, four as defendant and two as complainant. Aside from these two countries, agricultural disputes were spread out evenly across the rest of the countries. Ten of the disputes surrounding agriculture were also about anti-dumping, and all but two of them were about market access, with the remaining two being disputes over export subsidies. Anti-dumping for multiple sectors made up 16 disputes, making it the third most common type of

dispute for developing countries to participate in. The number of disputes participated in by economic classification is shown in table 5.

Table 5: Disputes, complainants and defendants by classification.

Participants by classification	**Number of disputes**
Developed complainant, developing defendant	65
Developing complainant, developed defendant	53
Developing complainant, developing defendant	23
Total disputes	141

When considering LICs instead, as per the World Bank classification, the same seems to be true. Of the 141 disputes involving developing countries, 63 involve these poorer countries. Comparing this to the 34% of the World Bank's list of countries meeting this classification, 67 out of 141 is 47.52%, so in fact a high level of participation. They also participate as complainants in 40 of these disputes, and defendants in only 32, the number exceeding 67 due to cases where both participants are LIC's. Despite the resources needed to participate in the DSM, the defense of local industry and fair trade arrangements seems to be important enough to the LIC's that they are willing to participate.

The LICs primarily filed disputes revolving around anti-dumping measures taken by other members. This covered agricultural and manufacturing goods. Manufacturing goods made up 36 of the 76 disputes filed, and of these 10 were about anti-dumping measures taken by the defendant. Agriculture was a primary focus in 27 of the disputes filed by the developing countries. This is unsurprisingly, given the reliance for LDC's on agricultural income. In fact, looking solely at the LIC's and their filed disputes, agricultural goods were a primary focus in 16 out of 42, or 38%, of the filed disputes. Out of these 42 disputes filed by LIC's, only seven involved manufacturing. Nineteen involved anti-dumping measures, and out of these 19, six were about anti-dumping measures taken on agricultural products. Out of these 42 disputes, 10 featured LIC's as both defendant and complainant, and out of these, six were anti-dumping. Table 6 provides insight similar to that of table 5, for LIC participants.

Table 6: LIC participation as complainant and defendant

Participants by classification	**Number of disputes**
LIC complainant, developed defendant	27
Developed complainant, LIC defendant	23
LIC complainant, LIC defendant	17
Total disputes	67

It is clear that the LICs more often participate in the DSM when disputing the policies of other LICs, at 25% of disputes, compared to the overall for developing countries at 16%.

The DSM does have a problem with the concentration of who participates. Looking purely at developing countries, we can see that there are some countries that participate actively, while a majority of the 125 countries classified as developing never participate at all. The top five complainants filed 6.2 disputes each, the remaining 20 countries filed 2.1 The side of the defendants painted an even more skewed picture, with 18 defendants in 88 disputes, but the top five countries were represented in 50 of these 88. These top five were again China, the Republic of Korea, India and Indonesia, with Argentina instead of Brazil. For the remaining 13 defendants, an average of 2.9 disputes were filed against them, while an average of 10 were filed against the top five.

5.3.2 Are there grounds to assume that the DSM more often rules in favor of developed nations whether by their power dynamics within the WTO or their access to resources?

There is clear evidence that developing countries lose more disputes than they win. Only 69 of the 141 disputes involving developing countries participated in ended in favor of the developing country. The remaining 72 ended in defeat. Defeat entails having to change trade policy measures, such as anti-dumping or safeguard measures, or removing a subsidy. However, developing countries still do win roughly 45% of the disputes they participate in.

Of the 72 losses, 21 were by China, eight were by Indonesia, seven were by Argentina, seven were by the Republic of Korea, and seven by India. The remaining 22 losses were spread out across 11 other countries. China lost a total of seven anti-dumping disputes in which they were the defendant, they also lost two in relation to the TRIPS agreement, as well as several to export restrictions and subsidies. These anti-dumping cases were disputes where China had implemented anti-dumping measures without being able to fully prove both that dumping was taking place and that it had caused serious injury to domestic industry. Chinas losses were primarily in the manufacturing sector, with 16 of their losses being related to manufactured goods. Indonesia also lost primarily in relation to manufacturing, but also in attempting to dispute a TBT measure taken by Australia. For those cases considered neither agricultural or industrial, they are listed as such because a specific good was not the focus of the dispute, or the dispute spanned multiple industries.

5.3.3 For what types of cases are developing countries more likely to be the target of disputes?

The dataset made for this thesis classifies the disputes as "Agricultural" when they pertain to agricultural goods, "Manufacturing" when they deal with manufactured goods, "Anti-Dumping" when there are anti-dumping measures that cover both sectors or a specific good is not the focus of the dispute, "TRIMs" when investment measures are involved and "TRIPs" for intellectual property. Using these classifications, we can see for which types of disputes developing countries are likely to be the defendants. The standout categories are "Agriculture" and "Manufacturing". Agriculture is the sector mentioned in 32 of the 88 disputes, which is unsurprising, as the sector makes up 29% of the GDP of developing countries (CBD, 2018). Manufacturing makes up 38 of the disputes, being the most common sector for developing countries to be the target of. Manufacturing goods are common staples of Chinese export, and China is expectedly represented as the defendant in 15 of the 38 manufacturing disputes.

We can also look at what categories of disputes are common. For instance, dumping is mentioned in 22 of the 88 disputes that target developing countries. Most of these mentions are in disputes revolving around agricultural and manufacturing goods. Five disputes also cover anti-dumping measures for both manufacturing and agriculture and are therefore classified as purely "anti-dumping" disputes. When it comes to categories of disputes, market access is the most common by a factor of eight. Fully 65 of the 88 disputes fall into the

category of limited market access. In descending order of frequency, the categories follow as category 3, export subsidies. Eight of the disputes involve export subsidies and their use in violation with WTO agreements. After this, category 2 which involves subsidies or other internal support to production follow. These are the actionable subsidies or the prohibited subsidies such as the red box that are in use. Lastly, category 4, intellectual property appears in four disputes, all targeting developing countries. All of these are ruled in favor of the complainant, likely due to illegal use of intellectual property without obtaining the proper license to do so.

5.3.4 Do countries that have filed as developing in the WTO yet have a high level of income have a measurable advantage in the DSM?

Looking at the results of the logit regression model, there certainly is evidence that countries that are listed as developing in the WTO yet have a higher level of income than LIC's have an advantage over their lower income counterparts. These wealthier developing countries have the means to participate actively and devote economic resources such as dedicated officials to DSM proceedings and are therefore better able to defend themselves and win in disputes. From the Logit regression we can see that being an LIC does negatively impact the odds of winning a dispute, however, the summary statistics seem to disagree. If we separate the LIC's from the wealthier developing countries, we can see that out of the 69 wins 37 of them went to LICs. Considering LICs are present in 67 out of the 141 disputes, this means that LICs win roughly 55.22% of their disputes. Comparatively, 32 wins have gone to the wealthier developed countries, after being represented in 74 disputes, or a winning ratio of 43.2%. This directly contradicts the Logit regression, though there might be an explanation. The winning ratio of LICs is still lower than 50%, meaning that there is a negative impact from being a developing country overall, there just isn't an additional one from being an LIC on top of being a developing country. This is backed up by looking at developed countries, who win 51% of the disputes they participate in against developing countries. What we can assume from this is that the aid the LICs are getting in their dispute settlements is working to help stabilize the impacts of income on being able to protect a nation's interests in the DSM.

5.3.5 Does the WTO decide cases favoring the complainant when the defendant is a developing country?

Again, there is clear evidence that this is the case, but the opposite is also true to the same extent. Of the 88 disputes where developing countries are the defendants, only 16 were ruled in favor of the defendant. While this may give the impression that the system is unfairly weighted in favor of the developed countries, looking at disputes initiated by developing countries paints a different picture. Of the 76 cases where the complainant is a developing country, 58 were won by the complainant. Rather than providing any evidence that the DSM is rigged in favor of developed countries, it seems that the DSM simply favors the complainant. This is to be expected, of course, as it would be frivolous to launch disputes without ensuring as closely as possible that the dispute is valid. It also raises the point that a country participating in the DSM is an important way to ensure that the country is not being discriminated against, or otherwise treated in a way that is inconsistent with WTO disciplines. Furthermore, this importance highlights the tragedy of the low participation from developing countries that aren't China, the Republic of Korea, India, or any of the other active countries. More active participation, perhaps aided by further support from the WTO, would help create a more balanced multilateral system.

5.3.6 Are there cases of similar disputes being settled differently when developing countries were involved?

There is disappearingly little evidence that there are disputes that have been resolved in a different way when developing countries are involved. The pattern of the disputes that cover developed countries, such as market access, import duties and anti-dumping or safeguard measures as emerges for developing countries. In the same vein as with developed versus developing countries, the complainant is most often the victor of a case, while the defendant often ends up having to change their policies to comply with their commitments as WTO members. Some disputes are overturned, just such as with developed versus developing countries, but it is a small minority, and the DSM panel finds that the complainant has not properly found evidence to determine that the defendant has broken their commitments.

6. Conclusion

This study aimed to use the dispute settlement mechanism of the WTO to shed light on the treatment of developing countries on the multilateral stage. In doing so, the goal was to add to a debate surrounding the benefits of multilateralism for these countries, as well as potential downsides. The paper looked at the period of 1995 to 2022, corresponding with the official formation of the WTO and the last concluded year when this project was started. The paper aimed to do so through the lens of the DSM by asking questions surrounding the participation of developing countries in the mechanism, as well as the fairness with which they are treated.

The WTO does not keep a list of countries that have filed as developing within the organization. Thus, two definitions were used. The first, and the one used for regression analysis later in the study, used the definition given by the WTO's Trade Facilitation Agreement, which outlined 90 countries as developing, and 35 countries as least-developed countries. These countries were combined to form the list of developing countries used to make the dataset of disputes. The second definition, which formed the reasoning behind the Lowinc variable in the dataset, was based on the World Bank's definition of lower-middle- and lower-income countries. These countries would go on to be called LIC's in the paper.

The DSM has been a key aspect of ensuring that compliance with WTO commitments for both developing and developed countries. This mechanism has allowed countries to hold each other accountable to their WTO commitments and ensure cohesion within the organization. The DSM is participated in actively by members of both developed and developing status. Out of the 207 disputes that went to negotiations, 141 were participated in by developing countries. The problem, however, lies with who participates in the process, as out of these 141 disputes, only 25 unique developing countries participated as complainants, and 18 as defendants. After accounting for those who participated as both, only 29 unique developing countries participated in the DSM. Out of the complainants, the five most common countries were China, the Republic of Korea, Indonesia, India and Brazil. These five countries filed 34 of the 76 disputes from developing countries. Unsurprisingly, the countries with the highest GDP and share of the global market were the most prominent in the dispute mechanism.

Developing countries do not truly participate in the DSM at the rate they should. Critics of the WTO mean this is because the DSM is asymmetric in its enforcement of rulings, and that

powerful economies such as the US can avoid compliance with rulings by leveraging their market power, such as with online gambling in the Antigua and Barbuda case. The DSM comes with clear limitations to the policy space of a nation, developing or otherwise. These limitations are on how a government may implement policies as they see fit, as members of the WTO are committed to complying with the signed agreements. This can be a double-edged sword, as it means all members have to treat all other members the same in terms of trade, and that they cannot differentiate between domestic products and those from foreign producers once they have entered into the market. However, it also means that a government cannot provide support beyond what is allowed in the WTO, even if it would be to the benefit of the development of its country. These limitations especially affect the development of poorer countries, as they are unable to implement programs that would help establish themselves on the international market. These would be programs such as the car manufacturing effort of 1996 in Indonesia, or other export subsidies.

Logistic analysis was done after constructing a logistic regression model using factors for each dispute. These factors were a mixture of dummy, categorical and numerical variables intended to account for some important, quantifiable, characteristics of each dispute.

The logistic regression analysis ended up being able to explain 56.81% of the variation in the dependent variable. It was found that the GDP per capita of the complainant was negatively impacting the odds of the dispute being ruled in favor of the developing country. As were the number of years the complainant had been a member of the multilateral process, the dispute revolving around intellectual property protection, as well as being classified as a lower-middle- or low-income country by the World Bank. What positively impacted the odds of a dispute being ruled in favor of the developing country was cases that involved dumping, and anti-dumping measures, as well as the number of years the defendant had been a member of the multilateral process.

Overall, the DSM does not inherently have a bias favoring the developed countries from a statistical standpoint. This may be because the primary users of the DSM are developed countries and those developed countries which have a higher income or a larger share of the global GDP. It may also be because only those countries who can afford to do so bring their disputes to negotiations in the first place. It may also be because once the agreements are

signed, there is little incentive to set a precedent that certain countries can break them without being challenged. As so, the system will hold itself balanced based on the rules of the WTO.

6.1 Limitations of the study

The study is limited in its ability to accurately estimate outcomes of political issues using data gathered from reports. The study attempts to use factors such as which sector and which agreements are invoked when solving a dispute. It does however not have access to who forms the panel to decide the dispute or which side of the dispute third party observers are on. The study also lacks a true definition of "developing country" as per the WTO, as this is not something the WTO keeps records of (WTO Enquiries, personal communication, April 5th, 2024). The substitute definitions, per the TFA and the World Bank, while based on an official WTO website and income data respectively, can only guess at which countries have truly filed as developing.

6.2 Recommendations for further research

For further research it is recommended that the researcher add additional variables to the analysis, such as the share of GDP that the disputed good has in the country that is being disputed. It could also be prudent to get more details about a smaller subset of disputes, rather than to try to analyze all the ones involving developing countries. It would also be sensible to get more details about the dispute settlement process, such as what the real cost of seeing a dispute through to the end is. The DSM was reworked following the end of 2023, with a new system in place after January 1st, 2024. If enough time has passed before further research is done, it could be interesting to research how the DSM has changed, if rulings are made differently, and if the variables used have changed significance. It could also serve as an interdisciplinary study, where an economist works with a researcher with a background in legal studies to get a better grasp of the legality of the disputes. Following up on what countries did after their rulings, if compliance was ensured and after what time could also be a point of study.

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