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Article

Macroeconomic Determinants of Anti-Dumping Filings: Analyzing the Role of GDP, Growth Rate, and Merchandise Trade Balance in Reporting and Targeted Countries

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Abstract: This study aims to explore the relationship between macroeconomic factors and the decision to file an anti-dumping (AD) initiation, focusing on the post-WTO period from 1995 to 2022 for both reporting and targeted countries. We analyze the 20 most frequent users of the AD mechanism and the 20 most frequently targeted countries through econometric analysis to determine how gross domestic product (GDP) volume, GDP growth rate, and merchandise trade balance (MTB) influence the frequency of AD initiations. Our findings indicate that at least half of the sampled countries exhibit a significant correlation between AD filings and at least one of the macroeconomic variables examined. In many cases, GDP volume and MTB not only affect a country's decision to initiate an AD investigation but also influence how often it becomes a target of such measures. Although the results are fragmented across different economies, they highlight the role of the macroeconomic environment in shaping the decision to resort to AD mechanisms. By adopting a dual perspective, considering both reporting and targeted countries, and incorporating MTB as a key variable, this research extends beyond previous studies to provide deeper insights into the macroeconomic determinants of AD measures. These findings suggest that macroeconomic conditions play a crucial role in shaping trade defense policies, highlighting the need for policymakers to consider broader economic trends when formulating AD regulations.

Keywords: anti-dumping; protectionism; macroeconomic factors; GDP growth; trade policy; merchandise trade balance

JEL Classification: F13; F14; L5



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1. Introduction

The contingent measures adopted by the World Trade Organization (WTO) to protect against unfair trade practices remain one of the most controversial aspects of international trade. These measures evolved and gained popularity among countries, leading to the establishment of national laws for contingent protection. These laws defend domestic industries and maintain market stability. The WTO introduced several key trade defense measures in the mid-1990s, including safeguards, countervailing duties, and AD policies, with the latter emerging as the dominant tool (Bown, 2011; Prusa, 2005). Since the WTO's establishment, the use of the AD mechanism surged, expanding beyond traditional users to include a significant number of developing countries (Aggarwal, 2004). Initially designed

to combat dumping and ensure fair trade practices, the AD mechanism introduced new complexities, raising concerns about its feasibility and fairness (Zanardi, 2006). Originally intended as a safeguard against harmful trade, the AD mechanism has, in practice, become a tool for protectionist policies, often shielding domestic producers from legitimate competition (Coleman, 2024).

Criticism increased, with many researchers arguing that the AD mechanism has been systematically abused, transforming from a free-trade protection tool into a means of shielding domestic industries from competition (Bown & McCulloch, 2015; Davis, 2009; Prusa, 2005). A substantial portion of international literature addressed this issue, particularly the transformation of the AD mechanism into one of the most popular protectionist tools. In theory, AD duties should only be applied to cases where foreign producers engage in practices harmful to domestic markets. However, it is difficult to believe that the sharp rise in AD filings reflects an equivalent increase in unfair trade practices (Aggarwal, 2004). The vast increase in cases leads to skepticism regarding the true intent behind many of these filings.

Extensive research explored the motivations behind the strategic use of the AD mechanism. While most studies focus on specific industries, only a few analyze the broader macroeconomic environment. Researchers such as Feinberg (2005, 1989) and Knetter and Prusa (2003) pioneered investigations into how macroeconomic factors influence a country's decision to initiate an AD investigation. These studies established the importance of considering economic cycles and pressures in shaping protectionist measures. Additionally, while some studies explored the role of macroeconomic conditions, they either examined limited variables, such as GDP growth alone, or focused on specific economies (Aggarwal, 2004; Firme & Vasconcelos, 2020; Niels & Francois, 2006). There remains a significant gap in understanding how multiple macroeconomic factors interact to shape AD behavior at a national level, particularly in the post-WTO era.

The pre-WTO literature, however, faced significant limitations. Early research focused mainly on developed countries, which dominated the use of AD measures until the late 1990s, with limited emphasis on emerging markets and how global economic fluctuations influence AD activity (Leidy, 1989). Developing nations were largely excluded from these analyses. Moreover, data limitations restricted prior research, with much of the literature focusing on exchange rates while neglecting other key macroeconomic variables, such as GDP growth rates. For instance, Knetter and Prusa (2003) and Leidy (1997) explored how macroeconomic shocks might trigger AD filings, but key economic factors, such as global GDP comparison and trade balances, were often neglected.

This study examines the relationship between macroeconomic factors and AD filings, focusing on GDP volume, GDP growth rate, and MTB as key predictors. These variables are selected due to their critical role in shaping economic stability and trade policies, influencing both a country's decision to initiate AD investigations and its likelihood of being targeted (Feinberg, 2005). While previous research explored some macroeconomic determinants of AD filings, most studies concentrated on either individual industries or specific policy contexts, leaving a gap in understanding broader national-level economic drivers. Moreover, while some studies considered trade balance and exchange rates, the simultaneous impact of GDP volume, GDP growth, and trade balance on both reporting and targeted countries remains underexplored, particularly in the post-WTO era.

Unlike previous research that often focused on exchange rates or industry-specific factors, this study incorporates a broader set of national-level macroeconomic indicators. By considering both GDP volume and growth rate alongside trade balance, it provides a more comprehensive understanding of the macroeconomic conditions influencing AD filings (Knetter & Prusa, 2003). Additionally, while existing studies primarily analyze

why countries initiate AD investigations, this study also examines the factors that make countries more likely to be targeted. This dual perspective helps differentiate the economic conditions influencing protectionist behavior versus exposure to AD actions, a dimension often overlooked in prior research. Additionally, this study utilizes data from 1995 to 2022, covering both developed and developing economies. Compared to earlier research, which often relied on pre-WTO data or limited country samples, this study provides more recent and representative insights, accounting for contemporary trade patterns and policy changes.

By linking GDP fluctuations and trade balance trends to AD filings, this study strengthens the argument that AD measures are not merely responses to unfair trade, but also strategic economic tools used during economic downturns or trade imbalances. The study highlights the macroeconomic motivations behind AD filings, which can inform policymakers in reforming trade defense mechanisms to ensure they are not misused for protectionism. By providing empirical evidence that AD filings correlate with macroeconomic instability, this research contributes to the ongoing debate on the need for stricter WTO regulations to prevent abuse of AD measures.

The structure of this paper is as follows: Section 2 provides a review of the existing literature on AD measures, focusing on the macroeconomic determinants influencing filing decisions. Section 3 establishes the research questions, discussing the rationale behind the hypotheses and linking them to the literature. Section 4 outlines the research methodology, including data sources, variable selection, and econometric techniques employed in the analysis. Section 5 presents the empirical results, highlighting key findings and statistical correlations between macroeconomic factors and AD filings. Section 6 discusses the implications of the findings in the context of trade policy and economic trends. Section 7 concludes the study, summarizing its contributions and policy recommendations. Finally, Sections 8 and 9 present scientific and practical implementations and acknowledge limitations, while Section 10 suggests directions for future research.

2. Literature Review

Dumping, defined as the sale of goods in foreign markets at unfairly low prices, and the enforcement of AD duties as a countermeasure, have been extensively studied over the past few decades. A significant portion of the research explores various economic and political factors that influence the decision to initiate AD filings (Aggarwal, 2004; Meng et al., 2016; Sadni Jallab, 2007). Scholars attempted to demonstrate how these factors affect the AD decision-making process, making this one of the most challenging areas in trade policy research. Meng et al. (2016) found that domestic and foreign income growth, exchange rate devaluation, and a reduction in domestic prices could reduce the number of AD cases in involved countries. Therefore, there is evidence that these countries are using the AD law as a political tool, shifting it from its main objective of avoiding unfair trade.

Early studies, such as those by Feinberg (1989) and Leidy (1997), were among the first to highlight the correlation between macro-economic conditions and AD activity. These works argue that firms are more likely to pursue AD measures during economic downturns, when financial injury is easier to claim. Feinberg (1989) demonstrated that deteriorating economic conditions, particularly during recessions, increase the probability of firms requesting AD protection. This view is supported by Aggarwal (2004), who asserts that firms facing financial strain are more inclined to seek such protection as a remedy against foreign competition, particularly during economic crises. Ahn and Shin (2011) offer support to the hypothesis that the AD initiation filing decision clearly shows a cyclical movement highly correlated to the global economic recession. Bown (2011) offers further support to this hypothesis, suggesting that the use of an AD mechanism usually

risks when there is an economic crisis. The connection between economic health and AD filings was further elaborated by [Kang and Park \(2012\)](#), who analyzed the impact of the global financial crisis on AD filings. Their comparison of datasets from 2008 to 2009 suggested that adverse economic conditions heighten the demand for trade protection and that AD measures have been used as a substitute for tariff protection during the global financial crisis. Similar conclusions were drawn by [Davis \(2009\)](#) in his examination of AD activity within the European Union, where political and economic motivations intertwine to influence decisions to file AD petitions.

[Firme and Vasconcelos \(2020\)](#) analyze the macroeconomic determinants of AD case initiations using a Poisson regression model with panel data. Their findings indicate that reductions in imports, foreign income growth, worsening domestic income, currency devaluation, and a current account surplus influence the likelihood of opening AD cases. Specifically, a decline in imports and a worsening domestic economic situation are associated with increased AD activity, suggesting that trade protectionism intensifies during economic downturns. Conversely, higher foreign income growth may reduce the need for AD measures, potentially due to improved export opportunities for domestic industries. These results underscore the role of macroeconomic conditions in shaping trade defense mechanisms and highlight concerns over the potential misuse or overuse of AD policies. Additionally, [Coleman \(2024\)](#) examines the relationship between macroeconomic factors and the demand for AD measures, emphasizing the role of exchange rates, business cycles, and economic integration. The study finds that real exchange rate appreciations are positively associated with increased AD filings, as stronger currencies make domestic industries more vulnerable to import competition. Additionally, business cycles influence AD activity, with recessions and economic downturns linked to a higher demand for trade protection. However, the study challenges the assumption that economic downturns alone drive AD filings, suggesting that firms may seek protectionism beyond recessionary periods. Moreover, economic integration, measured through trade and financial flows, is negatively correlated with AD petition filings, indicating that countries more integrated into global markets are less likely to resort to trade defense measures. These findings highlight the complex interplay between macroeconomic stability, globalization, and AD protectionism, reinforcing the need to consider both domestic and international economic conditions in trade policy analysis.

The literature also explores how competition and currency fluctuations influence AD filings. [Knetter and Prusa \(2003\)](#) provided an influential study that demonstrated how a strong domestic currency could lead to increased imports and consequently more AD filings, as domestic industries seek protection from rising foreign competition. They found that currency fluctuations play a key role in shaping a country's trade policies and AD measures. Similarly, [Becker and Theuringer \(2001\)](#) explored the macroeconomic determinants of AD in the European Union, suggesting that economic shocks significantly increase the likelihood of AD actions. Other recent research by [Kagitani and Tomoda \(2022\)](#) explored the impact of foreign macroeconomic conditions on AD actions, emphasizing the role of exporting countries' economic performance. A study on U.S. AD activity finds that higher economic growth in exporting countries is positively correlated with the initiation of AD investigations, as well as dumping and injury determinations. This suggests that trade partners experiencing economic expansion are more likely to be targeted for AD measures, potentially due to increased export activity. Additionally, the study highlights the role of exchange rate fluctuations, finding that the appreciation of the U.S. dollar against an exporting country's currency does not significantly affect dumping determinations but is linked to injury determinations, indicating that domestic industries may be more vulnerable to currency-induced competitive pressures. These findings reinforce the argument that AD

measures are not solely reactive to unfair trade practices but are also influenced by broader macroeconomic conditions in both importing and exporting economies.

Feinberg (2005) found that a percentage change in the growth rate leads to a twofold increase in AD initiation filings. Furthermore, Moore and Zanardi (2011) suggest that the impact of the reduction in the growth rate of GDP is different for developing countries compared to developed ones. In particular, their observations confirm that the decrease in the growth rate is negatively correlated with the number of initiation filings only for developing countries, while they do not observe such a correlation for developed ones. Liu and Zhang (2022) in their study find that while market economic status is often cited as a rationale for AD actions, it is not the most decisive factor. Instead, the domestic economic conditions of importing countries play a stronger role in influencing AD investigations. This suggests that economic downturns, financial instability, or fluctuations in industrial performance within importing countries may drive the demand for trade defense mechanisms. Additionally, the concentration of AD measures within specific industries indicates that macroeconomic pressures, such as declining domestic production or increased import competition, contribute to the initiation of investigations. These findings reinforce the argument that AD measures are not solely responses to unfair trade practices but are also influenced by broader economic conditions in the importing countries, aligning with the broader literature on the connection between macroeconomic stability and trade protectionism. Other researchers, Rhee and Jang (2022), analyze the determinants of terminating AD measures in Korea from 2006 to 2019, identifying key macroeconomic factors that influence their duration. The study finds that GDP growth rate positively correlates with the termination of AD measures, suggesting that economic expansion reduces the need for trade protection. Additionally, employment levels play a crucial role, with higher employment rates increasing the likelihood of terminating AD duties, indicating that labor market conditions are a significant consideration in trade policy decisions. These findings highlight the complex interaction between macroeconomic stability and AD enforcement, reinforcing the role of economic conditions in shaping trade defense strategies.

The macro-economic variables taken into consideration can be divided into two major categories, those that capture the domestic financial conditions and those that capture the external economic pressure. Among the more widespread endogenous factors is the real GDP, unemployment, and industrial production. On the other hand, trade balance, real exchange rate, and import penetration can be considered as external influences. Many researchers believe that an aggregate output that considers and weighs all of the above-mentioned factors accordingly constitutes the best approximation and offers the most complete interpretation of the mechanism that affects the AD Initiation filing decision.

Research focusing on the trade balance and its effect on AD filings yielded insightful results, particularly in developing economies. Aggarwal (2004) argued that the deterioration of a country's trade balance is a crucial factor for developing nations in initiating AD investigations. This observation was corroborated by Niels and Francois (2006), who found that worsening trade deficits and weak currencies in emerging economies significantly increase the pressure to impose AD duties as a protectionist measure. These studies underline the importance of both domestic and international economic contexts in shaping AD policy, particularly in countries with fragile economic environments. Akbas (2022), in recent research on AD measures, highlights the role of macroeconomic factors in shaping trade protectionist policies. He examines Turkey's AD investigations and identifies key determinants, including trade deficits, and real GDP growth. Using a negative binomial regression model for the period 1989–2019, the study finds that AD filings are significantly influenced by economic downturns and trade imbalances rather than purely unfair competition concerns. The results suggest that countries may use AD measures as strategic

policy tools rather than solely as responses to dumping practices. These findings align with broader literature emphasizing the interplay between economic conditions and protectionist measures, reinforcing the argument that macroeconomic stability plays a crucial role in determining AD activity.

The following table (Table 1) groups similar findings together, making it easier to understand how different macroeconomic factors influence antidumping measures.

Table 1. Summary of macroeconomic factors influencing AD filings and Key references.

Macroeconomic Factor	Key References	Main Findings
Economic downturns and GDP growth	Feinberg (1989, 2005) ; Aggarwal (2004) ; Ahn and Shin (2011) ; Bown (2011) ; Kang and Park (2012) ; Moore and Zanardi (2011) ; Rhee and Jang (2022)	Economic downturns and lower GDP growth rates increase antidumping filings as firms seek protection.
Exchange rates and currency fluctuations	Knetter and Prusa (2003) ; Becker and Theuringer (2001) ; Kagitani and Tomoda (2022) ; Coleman (2024)	Currency depreciation increases import competition, prompting more antidumping filings, while appreciation affects injury determinations.
Business cycles and economic crises	Davis (2009) ; Moore and Zanardi (2011) ; Kagitani and Tomoda (2022)	Economic crises lead to higher antidumping activity as a substitute for tariff protections.
Employment and labor market conditions	Rhee and Jang (2022)	Higher employment rates correlate with antidumping terminations, showing labor market influence on trade policy.
Foreign income growth and external economic conditions	Firme and Vasconcelos (2020) ; Liu and Zhang (2022)	Higher foreign income growth reduces antidumping filings, as increased exports reduce the need for protectionist measures.
Trade balance and deficits	Aggarwal (2004) ; Niels and Francois (2006) ; Akbas (2022)	Trade deficits and worsening trade balances lead to more antidumping measures, especially in developing economies.

Source: Compiled by the authors based on a review of existing literature.

3. Hypothesis Development

Prior research suggests that macroeconomic conditions play a crucial role in shaping trade protectionist measures, including AD filings. Economic downturns, fluctuations in GDP, and trade imbalances have been identified as significant determinants of protectionist behavior ([Aggarwal, 2004](#); [Bown, 2011](#); [Feinberg, 1989](#)). Countries experiencing economic instability are more likely to resort to AD measures to protect domestic industries from import competition. However, most studies either focused on individual macroeconomic indicators or specific industry-level factors without offering a comprehensive analysis of how multiple macroeconomic variables influence both the initiation and targeting of AD measures at the national level. To bridge this gap, this study formulates hypotheses based

on the assumption that GDP volume, GDP growth rate, and MTB influence a country's decision to initiate an AD investigation as well as the likelihood of being targeted by such measures. These three variables were selected due to their fundamental role in shaping trade policy decisions.

GDP volume reflects the overall economic strength and market size of a country, which directly impacts its capacity to initiate trade defense measures and its exposure to foreign competition. A larger economy may be more inclined to impose AD measures to protect key industries, whereas smaller economies may have limited policy tools available.

GDP growth rate captures short-term economic fluctuations, which can influence AD activity by affecting domestic industry performance. Previous research (Feinberg, 1989; Moore & Zanardi, 2011) suggests that firms are more likely to seek AD protection during economic downturns when financial distress increases.

MTB serves as an indicator of external economic pressure. A worsening trade balance often triggers AD filings, as countries seek to counteract surging imports that threaten domestic industries (Aggarwal, 2004; Akbas, 2022). Deficit economies, particularly in developing nations, may use AD measures to restore trade equilibrium and shield local producers.

While other macroeconomic indicators, such as exchange rate volatility and inflation, also influence trade policy, their effects on AD filings are often indirect. Exchange rate movements may affect trade competitiveness, but previous studies (Knetter & Prusa, 2003) suggest that currency fluctuations do not consistently drive AD filings across all economies. Similarly, inflation influences domestic cost structures, but its relationship with AD measures is less direct compared to GDP or trade balance fluctuations.

Given these considerations, this study prioritizes GDP volume, GDP growth rate, and trade balance as the most direct and empirically supported macroeconomic determinants of AD filings.

Larger economies possess greater institutional capacity to monitor, investigate, and file AD petitions. Additionally, they often have well-organized domestic industries that actively lobby for trade protection when facing strong import competition. Countries with higher GDP volumes tend to have more diversified industries, increasing their exposure to foreign dumping and making them more proactive in utilizing AD mechanisms as a trade defense strategy (Moore & Zanardi, 2011). Empirical studies suggest that larger economies are more likely to initiate AD investigations, given their stronger regulatory frameworks and greater economic stake in international trade. Considering the above, it seems appropriate to state the following hypothesis:

Hypothesis 1. *GDP volume is positively correlated with the number of AD filings initiated by a country.*

Periods of economic downturns increase the likelihood of AD investigations, as domestic industries facing financial distress are more likely to seek trade protection (Feinberg, 1989). During times of slow growth or recession, firms experience declining demand and intensified competition, leading to increased lobbying for government intervention through protectionist measures. When economic conditions deteriorate, governments are more inclined to impose AD duties as a way to shield domestic producers from foreign competition and stabilize employment levels. Conversely, when GDP growth is strong, domestic industries tend to be more competitive, reducing their reliance on trade defense mechanisms (Ahn & Shin, 2011). Empirical research suggests that AD filings tend to spike during economic contractions and decline during periods of economic expansion, reinforcing the link between macroeconomic stability and trade protectionism. Building on this reasoning, the following hypothesis is proposed:

Hypothesis 2. *GDP growth rate is negatively correlated with the number of AD filings initiated by a country.*

A country's trade balance plays a crucial role in shaping its trade policy responses. Persistent trade deficits heighten economic and political pressure to restrict imports, especially in industries facing intense foreign competition (Aggarwal, 2004). When imports significantly outweigh exports, domestic firms often view foreign goods as a threat, increasing demands for trade protection through AD petitions. Governments, in turn, may initiate AD investigations to counteract perceived dumping, support struggling industries, and mitigate the negative effects of trade imbalances (Niels & Francois, 2006). Empirical evidence suggests that countries with sustained trade deficits tend to use AD measures more frequently, reinforcing the role of trade balance concerns in shaping AD filings. In light of these considerations, the following hypothesis is formulated:

Hypothesis 3. *There is a correlation between MTB and how many times a country files an initiation against another country.*

Larger economies tend to be major exporters, increasing their likelihood of being targeted for AD filings, particularly by smaller or developing economies seeking to protect their domestic industries. The high volume of exports from these economies often raises suspicions of dumping, even when pricing remains competitive. Additionally, economic powerhouses such as China, the European Union, and the United States are frequently scrutinized in AD investigations, as their trade policies and export behaviors influence global market conditions (Bown, 2011). Empirical studies suggest that larger economies face more frequent AD actions, reflecting both economic dynamics and geopolitical trade tensions. Given these factors, the following hypothesis is put forward:

Hypothesis 4. *GDP volume is positively correlated with the likelihood of being targeted for AD filings.*

Rapid economic growth is often accompanied by strong export expansion, increasing the likelihood that fast-growing economies will be perceived as dumping threats by their trading partners (Liu & Zhang, 2022). Countries experiencing high GDP growth rates frequently adopt aggressive export strategies, which, in turn, heightens their exposure to AD investigations. Moreover, industries in slower-growing economies may interpret import surges from high-growth nations as unfair competition, further fueling AD filings against rapidly expanding economies (Davis, 2009). Empirical evidence suggests that countries with sustained economic growth tend to face higher levels of trade scrutiny, as competitors seek to shield domestic markets from rising import penetration. Based on this reasoning, the following hypothesis is proposed:

Hypothesis 5. *GDP growth rate is positively correlated with the likelihood of being targeted for AD filings.*

Countries with large trade surpluses, particularly those with export-driven economies, frequently become targets of AD investigations, as their persistent surplus is often interpreted as a sign of aggressive pricing strategies (Kagitani & Tomoda, 2022). A consistent trade surplus suggests that a country is exporting at highly competitive prices, which may raise suspicions of dumping among its trade partners. Historically, countries such as China and Germany, known for their large trade surpluses, have been among the most frequently targeted in AD cases (Prusa, 2005). Empirical evidence indicates that export-oriented

economies with sustained surpluses face heightened scrutiny, as surplus accumulation is often linked to market distortions and trade imbalances. In light of this, the following hypothesis is proposed:

Hypothesis 6. *A country's trade surplus (positive MTB) is positively correlated with the likelihood of being targeted for AD filings.*

These hypotheses suggest that macroeconomic factors play a crucial role in shaping the decision-making process behind AD filings. They influence the incentives and pressures faced by both reporting and targeted countries. Economic conditions can affect whether a country initiates an AD investigation or becomes a target. Factors such as GDP, growth rate, and trade balance impact these decisions. Understanding these influences helps explain the strategic use of AD mechanisms in global trade.

4. Methodology

This study aims to explore the relationship between macroeconomic factors and the decision to file an AD initiation, focusing on the post-WTO period from 1995 to 2022. We focus on this period because, while the mechanism has been available to state authorities for decades, it was only after 1995 that its use became systematic. This shift was driven by the establishment of the appropriate institutional framework, which played a decisive role in the surge observed and the rapid increase in its use in subsequent years. It is noteworthy that the total number of AD measures imposed after 1995 is approximately 4463. Before 1995, comprehensive data on AD measures are not available due to the absence of the WTO framework, however, it is estimated that around 1500 to 2000 AD measures were imposed globally before that time. From this, we can conclude that approximately two-thirds of all AD measures were imposed in the period after 1995, while more than 50% of these measures have been imposed in the last 20 years.

Our research focuses on three key macroeconomic indicators: real GDP growth rate, GDP volume, and the trade balance (excluding services). These indicators were selected due to their fundamental role in shaping a country's economic stability and trade policies. GDP volume reflects the overall economic size and capacity of a nation, while the real GDP growth rate captures short-term economic fluctuations and broader trends in economic expansion or contraction. The trade balance, on the other hand, indicates a country's trade competitiveness by measuring the difference between exports and imports, excluding services, which are typically not subject to AD duties. By examining these variables, this study aims to identify how economic cycles influence AD activity, both in terms of initiating measures and being targeted. Understanding these relationships provides insights into the broader patterns of trade protectionism across different economic environments, particularly in the post-WTO era, where both developed and developing countries increasingly used AD measures as a trade policy tool.

To enhance transparency and facilitate data traceability, a table (Table 2) has been included in this section, listing each variable along with its corresponding data source and relevant website links.

Data on AD initiations are sourced from the WTO database, which provides annual statistics on both AD investigations and the imposition of final measures by member countries. The WTO database is comprehensive, providing country-level data on the number of initiations, as well as whether a country is acting as a petitioner or is the target of an AD investigation. While the WTO database does not include specific information on products or firms involved in these filings, it is a reliable source for understanding broader patterns in AD behavior over time.

Table 2. Data sources for macroeconomic variables and AD filings.

Variable	Description	Data Source	Website Link
GDP Volume	Total economic output of a country	World Bank	www.worldbank.org
GDP Growth Rate	Annual percentage change in GDP	World Bank	www.worldbank.org
MTB	Difference between exports and imports	IMF	www.imf.org
AD Filings	Number of AD cases initiated	WTO	www.wto.org

Source: Compiled by the authors, website links are provided for reference and accessibility.

Macroeconomic data are sourced from the World Bank database, which includes annual figures on GDP (in constant USD). Data on trade balances for all countries are derived from the International Monetary Fund (IMF) database. These figures are adjusted for inflation to reflect economic indicators more accurately and to enable more meaningful cross-country comparisons. For GDP, we consider two variables: the total GDP volume and the real GDP growth rate. GDP volume reflects the overall size of the economy, whereas the real GDP growth rate captures short-term economic fluctuations and growth trends. The trade balance, excluding services, is calculated by subtracting merchandise imports from merchandise exports, both valued in USD. This measure is significant for our analysis because services are generally not subject to AD duties, which primarily focus on tangible goods.

To ensure robustness in our analysis, we focus on the top users of the mechanism. The selection of the 20 most frequent users of the AD mechanism, as well as the 20 most frequently targeted countries, allows us to explore how macroeconomic factors may have a different impact on these two distinct groups. Developing countries, particularly emerging economies, have become increasingly active users of AD measures, often in response to the growing competition in global markets. Meanwhile, developed countries, though traditional users, may exhibit more complex patterns in their use of AD filings, especially during periods of economic expansion or contraction. We selected these 20 countries based on two key criteria. First, they account for a significant share of total AD initiations, ensuring a more reliable statistical analysis. These countries represent nearly 90% of AD filings, while the remaining 45 countries collectively contribute only about 10%. Additionally, it is evident that sporadic and non-systematic users undermine the credibility of the statistics. For this reason, it is preferable to exclude them from the analysis.

We use SPSS (IBM SPSS statistics 28) as our primary analytical tool because it can handle large datasets and perform detailed correlation analysis. To test our hypotheses, we employ the parametric Pearson correlation with a significance level of 5%. Specifically, correlations between reporting MTB–GDP–GDP% and targeted MTB–GDP–GDP% were calculated, both within countries and between countries. Such an analysis enables the researcher to identify hidden relationships of influence between countries, thereby drawing comparative conclusions. Algorithmic techniques for time series analysis (ARIMA, exponential smoothing) were applied, allowing the researcher to examine whether the time series of the entities of interest exhibit trends, seasonality, irregular movements, etc.

In summary, this study builds on existing literature by extending the analysis of macroeconomic factors to a broader and more recent dataset. By incorporating multiple macroeconomic indicators and focusing on both acting and targeted countries, our framework provides a comprehensive view of how economic conditions shape the use of the AD mechanism. This approach not only enhances the robustness of the findings but also offers a valuable contribution to the ongoing debate about the role of AD in international trade.

Major global events, such as the COVID-19 pandemic and the Russia–Ukraine war, significantly affected trade patterns and may have influenced antidumping activity. However, this study focuses solely on macroeconomic determinants, such as GDP and trade balance, to maintain analytical clarity and avoid confounding effects from short-term disruptions. While these factors were excluded to ensure a more precise assessment of long-term economic relationships, future research could integrate such external shocks to explore their impact on antidumping filings and trade defense mechanisms.

5. Results

Table 3 lists the top 20 most frequent users of the AD mechanism between 1995 and 2021. It describes the total number of initiations for the period under investigation each of these countries started.

Table 3. AD initiations—top 20 most frequent users 1995–2021—reporting country.

	Initiations by Reporting Country	Total Number of Initiations	Accumulated (%)
1	India	1096	17.07
2	United States	828	29.96
3	European Union	538	38.34
4	Brazil	434	45.09
5	Argentina	400	51.32
6	Australia	375	57.16
7	China	292	61.71
8	Canada	276	66.01
9	South Africa	244	69.81
10	Turkey	240	73.54
11	Mexico	168	76.16
12	South Korea	159	78.64
13	Pakistan	147	80.92
14	Indonesia	144	83.17
15	Egypt	117	84.99
16	Malaysia	109	86.69
17	Thailand	99	88.23
18	Colombia	96	89.72
19	Ukraine	85	91.04
20	Peru	80	92.29
	Total World	6422	

Source: Calculations based on the World Trade Organization—anti-dumping database.

The table provides a detailed ranking of the top 20 reporting countries that initiated AD measures, along with their respective share in the 6422 total cases worldwide. India ranks as the most active initiator, accounting for 17.07% of global AD initiations, followed by the United States (12.89%) and the European Union (8.38%). The top twenty countries account for more than nine out of ten (92.29%) of the total cases.

Figure 1 illustrates the distribution of AD initiations among the top 20 most frequent users and visually represents the percentage share of anti-dumping initiations by reporting countries.

The top five countries (India, the U.S., the EU, Brazil, and Argentina) account for more than half of the total cases (51.32%), reflecting their strong reliance on AD as a trade defense tool. Emerging economies, such as China, Turkey, South Africa, and Pakistan, are also key initiators, signaling a shift in global trade policies where developing nations increasingly utilize AD mechanisms to counteract unfair trade practices. The distribution of initiations

highlights that a handful of countries are responsible for the vast majority of cases, with the top ten initiators contributing over 73% of all filings, while the remaining countries collectively account for the rest.

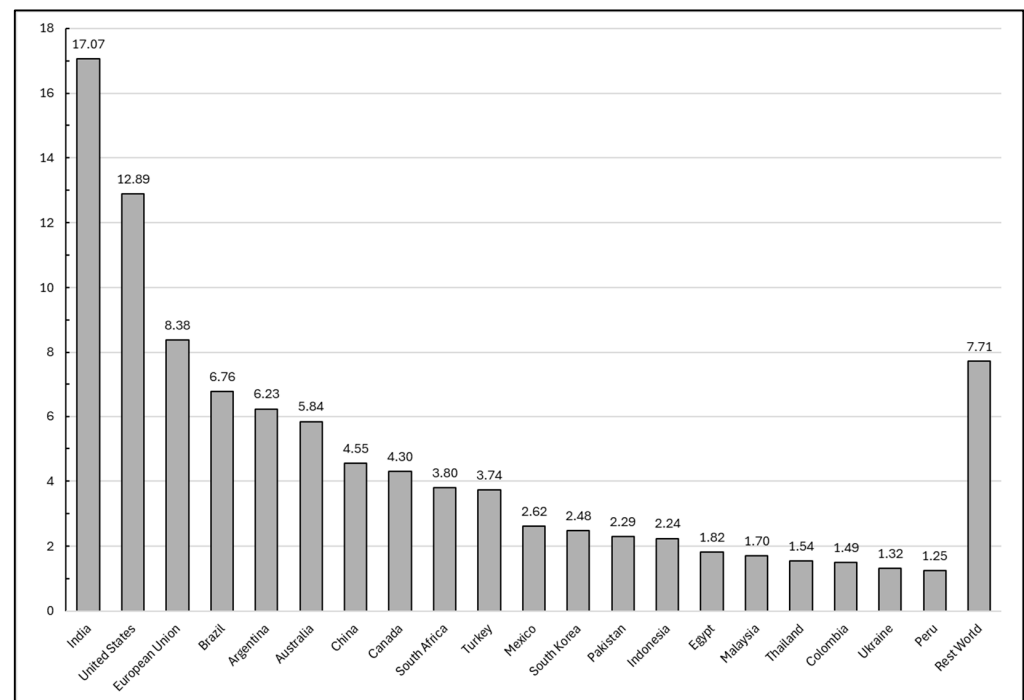


Figure 1. AD initiations—share of top 20 most frequent users 1995–2021—reporting country. Source: World Trade Organization—Anti-dumping database.

Next, we approach the number of petitions from another perspective as we see the most frequently targeted countries (Table 4).

The table (Table 4) presents the top 20 most targeted countries in anti-dumping investigations, highlighting their total number of cases and cumulative percentage of global initiations. China is by far the most targeted country, facing 1839 cases, which accounts for 28.64% of all AD initiations worldwide. This reflects China's dominant role in global trade and its frequent accusations of unfair pricing practices. South Korea (480 cases, 7.47%) and the United States (316 cases, 4.93%) follow, showing that even major economies are subject to anti-dumping actions.

Figure 2 presents the share of AD initiations against the most frequently targeted countries and visually represents the percentage share of anti-dumping initiations by targeted countries.

Table 4. AD Initiations—top 20 most frequent users 1995–2021—targeted country.

	Initiations by Targeted Country	Total Number of Initiations	Accumulated (%)
1	China	1839	28.64
2	South Korea	480	36.09
3	United States	316	41.02
4	India	259	45.05
5	Thailand	256	49.03
6	Indonesia	241	52.79
7	Japan	237	56.48

Table 4. Cont.

	Initiations by Targeted Country	Total Number of Initiations	Accumulated (%)
8	Russia	191	59.45
9	Malaysia	188	64.95
10	Brazil	165	67.18
11	European Union	143	69.06
12	Turkey	121	70.83
13	Viet Nam	114	72.35
14	Ukraine	97	73.70
15	Mexico	87	74.99
16	South Africa	83	76.07
17	Singapore	69	76.89
18	Canada	53	77.69
19	Argentina	50	78.46
20	Hong Kong	40	80.00
	Total World	6422	

Source: calculations based on the World Trade Organization—Anti-dumping database.

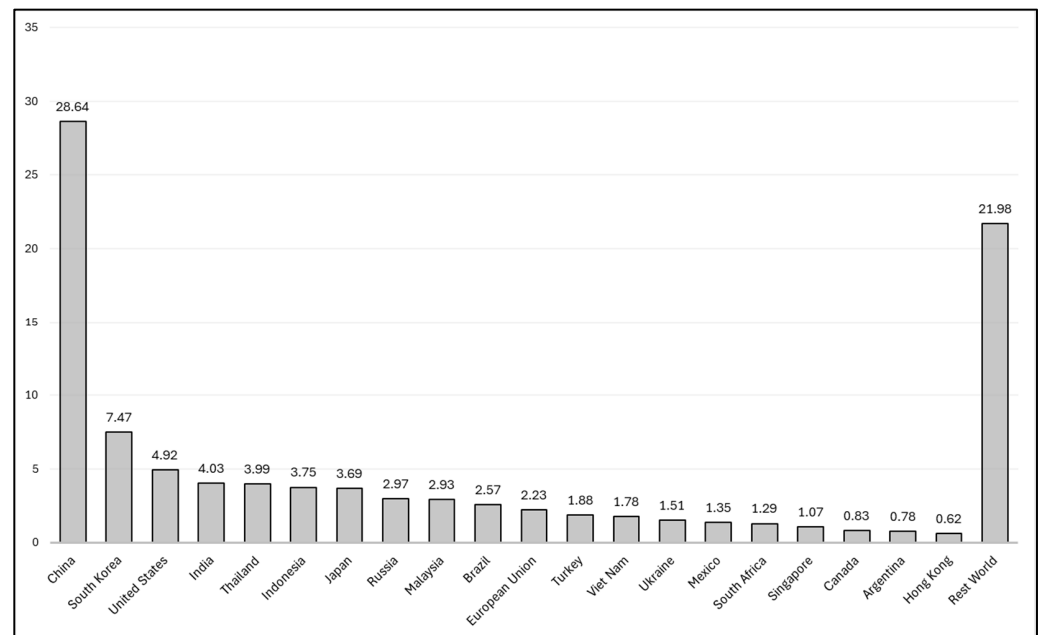


Figure 2. AD initiations—share of top 20 most frequent users 1995–2021—targeted country. Source: World Trade Organization—Anti-dumping database.

Developing nations such as India (4.03%), Thailand (3.99%), Indonesia (3.75%), and Malaysia (2.93%) are also heavily targeted, indicating that Southeast Asian economies have been frequent subjects of trade defense actions. Additionally, Japan (3.69%), Russia (2.97%), and the European Union (2.23%) demonstrate that industrialized economies also face significant anti-dumping scrutiny. The top 10 targeted countries account for 67.18% of all cases, while the top 20 countries represent 80% of total initiations, meaning a small group of economies bears the vast majority of anti-dumping actions.

Tables 5 and 6 present the results of the parametric Pearson correlation analysis, examining the relationship between AD initiations and three key macroeconomic variables: GDP volume, GDP growth rate, and MTB. A positive correlation (closer to 1) indicates that an increase in the macroeconomic variable is associated with an increase in AD filings, while a negative correlation (closer to -1) suggests an inverse relationship. The statistical

significance of each correlation is measured at the 5% level ($p < 0.05$), with significant values denoted by asterisks (* $p < 0.05$, ** $p < 0.01$). Additionally, we present results at the 7% level.

Table 5. Correlation of AD initiations to GDP—GDP%—MTB—top 20 reporting countries (1995–2021).

	Reporting Country	Reporting AD		Reporting GDP	Reporting GDP %	Reporting MTB
1	India	Pearson correlation Sig. (2-tailed)	1	0.147 0.465	−0.507 ** 0.007	0.073 0.718
2	United States	Pearson correlation Sig. (2-tailed)	1	0.114 0.57	−0.371 0.057	0.012 0.952
3	European Union	Pearson correlation Sig. (2-tailed)	1	−0.687 ** 0	0.259 0.192	−0.480 * 0.011
4	Brazil	Pearson correlation Sig. (2-tailed)	1	0.556 ** 0.003	0.083 0.68	−0.558 ** 0.002
5	Argentina	Pearson correlation Sig. (2-tailed)	1	−0.1 0.62	−0.365 0.061	−0.196 0.327
6	Australia	Pearson correlation Sig. (2-tailed)	1	−0.17 0.396	0.091 0.651	−0.003 0.987
7	China	Pearson correlation Sig. (2-tailed)	1	−0.085 0.675	−0.165 0.412	−0.144 0.473
8	Canada	Pearson correlation Sig. (2-tailed)	1	−0.221 0.269	−0.3 0.154	−0.092 0.647
9	South Africa	Pearson correlation Sig. (2-tailed)	1	−0.639 ** 0	0.182 0.364	0.431 * 0.025
10	Turkey	Pearson correlation Sig. (2-tailed)	1	0.107 0.595	−0.085 0.673	−0.052 0.798
11	Mexico	Pearson correlation Sig. (2-tailed)	1	−0.18 0.368	0.051 0.8	0.142 0.481
12	South Korea	Pearson correlation Sig. (2-tailed)	1	−0.234 0.259	0.194 0.352	−0.345 0.091
13	Pakistan	Pearson correlation Sig. (2-tailed)	1	0.161 0.524	0.115 0.649	−0.125 0.621
14	Indonesia	Pearson correlation Sig. (2-tailed)	1	−0.021 0.923	0.004 0.984	−0.496 * 0.016
15	Egypt	Pearson correlation Sig. (2-tailed)	1	−0.017 0.941	0.197 0.393	0.171 0.459
16	Malaysia	Pearson correlation Sig. (2-tailed)	1	0.425 0.062	−0.008 0.975	0.178 0.453
17	Thailand	Pearson correlation Sig. (2-tailed)	1	−0.018 0.94	−0.163 0.492	0.14 0.556
18	Colombia	Pearson correlation Sig. (2-tailed)	1	0.315 0.143	0.081 0.715	−0.132 0.548
19	Ukraine	Pearson correlation Sig. (2-tailed)	1	0.368 0.101	0.198 0.389	−0.369 0.1
20	Peru	Pearson correlation Sig. (2-tailed)	1	−0.539 * 0.012	−0.094 0.684	−0.193 0.402

Source: SPSS. * $p < 0.05$, ** $p < 0.01$.

Significant correlations are marked with asterisks, indicating statistical relevance. For instance, India shows a significant negative correlation between AD initiations and MTB (−0.507, $p = 0.007$), suggesting that as India's trade balance worsens, the number of AD initiations increases. Similarly, Brazil exhibits a strong positive correlation between AD initiations and GDP (0.556, $p = 0.003$), indicating that higher economic output is associated with increased AD filings. The European Union displays a strong negative correlation with GDP growth (−0.687, $p = 0.000$), implying that during slower economic growth, AD initiations rise. South Africa and Indonesia also show statistically significant correlations between AD filings and macroeconomic factors, with South Africa's AD initiations posi-

tively correlated with MTB ($0.431, p = 0.025$) and Indonesia's being negatively correlated ($-0.496, p = 0.016$). These findings suggest that trade defense measures are influenced by broader economic conditions, with countries responding to economic slowdowns or trade imbalances by increasing anti-dumping actions to protect domestic industries.

Table 6. Correlation of AD initiations to GDP—GDP%—MTB top 20 targeted countries (1995–2021).

	Targeted Country	Reporting AD		Reporting GDP	Reporting GDP %	Reporting MTB
1	China	Pearson correlation Sig. (2-tailed)	1	0.286 0.148	−0.660 ** 0	0.349 0.07
2	South Korea	Pearson correlation Sig. (2-tailed)	1	−0.2 0.318	0.001 0.995	0.25 0.208
3	United States	Pearson correlation Sig. (2-tailed)	1	−0.650 ** 0	−0.02 0.919	−0.648 ** 0
4	India	Pearson correlation Sig. (2-tailed)	1	−0.151 0.451	−0.109 0.587	0.25 0.209
5	Thailand	Pearson correlation Sig. (2-tailed)	1	−0.13 0.52	0.242 0.223	−0.114 0.57
6	Indonesia	Pearson correlation Sig. (2-tailed)	1	−0.362 0.063	−0.172 0.39	0.256 0.198
7	Japan	Pearson correlation Sig. (2-tailed)	1	−0.525 ** 0.005	0.021 0.918	0.354 0.07
8	Russia	Pearson correlation Sig. (2-tailed)	1	−0.491 ** 0.009	0.023 0.909	0.420 * 0.029
9	Malaysia	Pearson correlation Sig. (2-tailed)	1	0.27 0.173	−0.309 0.117	0.303 0.124
10	Brazil	Pearson correlation Sig. (2-tailed)	1	−0.334 0.095	−0.341 0.089	−0.21 0.304
11	European Union	Pearson correlation Sig. (2-tailed)	1	−0.182 0.373	−0.179 0.38	0.08 0.698
12	Turkey	Pearson correlation Sig. (2-tailed)	1	0.420 * 0.033	−0.159 0.439	−0.264 0.192
13	Viet Nam	Pearson correlation Sig. (2-tailed)	1	0.673 ** 0.001	−0.383 0.078	0.688 ** 0
14	Ukraine	Pearson correlation Sig. (2-tailed)	1	−0.642 ** 0	0.049 0.812	0.490 * 0.011
15	Mexico	Pearson correlation Sig. (2-tailed)	1	−0.128 0.533	0.127 0.535	−0.059 0.773
16	South Africa	Pearson correlation Sig. (2-tailed)	1	−0.713 ** 0	0.112 0.593	0.381 0.06
17	Singapore	Pearson correlation Sig. (2-tailed)	1	−0.233 0.324	−0.424 0.063	−0.414 0.069
18	Canada	Pearson correlation Sig. (2-tailed)	1	−0.392 0.064	0.071 0.765	0.225 0.303
19	Argentina	Pearson correlation Sig. (2-tailed)	1	−0.222 0.308	−0.121 0.582	−0.069 0.754
20	Hong Kong	Pearson correlation Sig. (2-tailed)	1	−0.556 ** 0.009	−0.114 0.622	0.594 ** 0.005

Source: SPSS. * $p < 0.05$, ** $p < 0.01$.

In Table 6, we see that China, the most targeted country, shows a strong negative correlation between AD initiations and GDP growth ($-0.660, p = 0.000$), indicating that periods of slower economic growth tend to coincide with increased anti-dumping actions against China. Similarly, the United States exhibits a strong negative correlation between AD filings and GDP growth ($-0.650, p = 0.000$), but a strong positive correlation with MTB ($0.648, p = 0.000$), suggesting that as the U.S. trade balance improves, it faces more AD measures. Other significant findings include Japan and Russia, where AD initiations

negatively correlate with GDP growth (Japan: -0.525 , $p = 0.005$; Russia: -0.491 , $p = 0.009$) but positively correlate with MTB (Russia: 0.420 , $p = 0.029$), suggesting that these economies face more AD actions when their trade positions improve. Vietnam shows a strong positive correlation with GDP volume (0.673 , $p = 0.001$) and MTB (0.688 , $p = 0.000$), indicating that as its trade activity increases, it is more frequently targeted. Meanwhile, Ukraine (-0.642 , $p = 0.000$), South Africa (-0.713 , $p = 0.000$), and Hong Kong (-0.556 , $p = 0.009$) exhibit strong negative correlations between AD initiations and GDP growth, reinforcing the trend that countries experiencing economic slowdowns tend to face more AD investigations.

At this point, we present the findings of our statistical analysis on two levels. Initially, we focus on examining the correlation between the three macroeconomic variables under investigation in relation to the countries in the sample. Our aim is to test the research hypotheses: whether these macroeconomic variables influence the frequency with which a country resorts to the antidumping mechanism against another country. Key takeaways include:

- GDP volume exhibits a significant positive correlation with AD initiations in multiple countries, reinforcing the hypothesis that larger economies file more AD cases.
- GDP growth rate generally shows weaker correlations, suggesting that economic downturns may not uniformly drive AD filings across all countries.
- MTB reveals a significant inverse correlation in some countries, indicating that deficit economies are more likely to resort to AD measures.

These results highlight that while macroeconomic factors influence AD filings, the strength and direction of the relationship vary across economies.

Table 7 provides a summary of the extent to which each hypothesis is supported across the 20 most frequent AD-reporting countries. The table differentiates between fully fulfilled hypotheses (statistically significant in expected direction) and partially fulfilled hypotheses (some level of correlation but weaker statistical support).

Table 7. Fulfillment of hypotheses on the relationship between macroeconomic factors and AD filings—reporting countries.

Hypothesis	Number of Countries (Fully Fulfilled)	Number of Countries (Partially Fulfilled)	Total Number of Countries in Sample
GDP volume affects the frequency of AD filings.	5	1	20
GDP growth rate affects the frequency of AD filings.	1	2	20
MTB affects AD filings.	4	0	20
Number of counties fulfilling at least one of the hypotheses.	7	3	20

Source: Authors' calculations based on data analysis from the WTO anti-dumping database and macroeconomic indicators from the World Bank and IMF.

The results indicate that GDP volume is the strongest predictor of AD initiations, with the highest number of countries showing a significant correlation, reinforcing the argument that larger economies actively use AD measures as trade defense tools. In contrast, GDP growth rate appears to be the weakest predictor, with only a few countries displaying significant relationships, suggesting that economic downturns do not consistently drive AD filings. The analysis reveals that 10 out of the 20 countries in the sample exhibit a statistically significant correlation between at least one macroeconomic variable and the number of antidumping petitions.

Specifically, 6 countries (the EU, Brazil, South Africa, Malaysia, Peru, and Japan) show a correlation with the total GDP volume, indicating that for these countries, GDP volume significantly affects the frequency of resorting to the antidumping mechanism (Japan demonstrates a weak correlation). The literature suggests that fluctuations in economic activity, both in exporting and importing countries, can significantly impact these decisions (Knetter & Prusa, 2003; Prusa, 2005). A slump in GDP volume is likely to result in poor performance for domestic companies, prompting them to claim financial injury, and making it easier to seek AD duties. Foreign companies, in contrast, may reduce prices to remain competitive in these markets, thus risking accusations of dumping. Therefore, a decline in GDP volume tends to increase domestic companies' likelihood of seeking AD measures, while foreign firms' risk being accused of dumping due to price adjustments.

Regarding the economic growth rate, we observe that only 3 countries (India, the USA, and Argentina) demonstrate a correlation. However, except for India, this correlation is relatively weak. This finding highlights the difficulty in establishing a robust link between antidumping measures and a highly volatile and unstable variable, such as economic growth, that would consistently drive specific behavior.

The third variable examined is the trade balance and its effect on the frequency of antidumping petitions. Here again, only a few countries (4 out of 20) exhibit a statistically significant correlation. Specifically, the EU, Brazil, South Africa, and Indonesia have a p -value < 0.05 , indicating that the composition of their trade balance substantially influences the frequency of resorting to the antidumping mechanism. This suggests that trade deficits increase the need for domestic industries to seek protection, prompting more AD filings. A deficit can create pressure to shield domestic markets from imported goods perceived as unfairly priced. Countries with trade deficits tend to file more AD petitions, indicating that a negative trade balance intensifies protectionist tendencies.

In summary, we can conclude that for these 10 countries, at least one of the three macroeconomic variables investigated is statistically significant and plays a decisive role in the decision-making process for utilizing the antidumping mechanism. Notably, if we consider that these countries account for 58.98% of all antidumping petitions globally, we can infer that a substantial share of such petitions is related to some macroeconomic factor.

The second level of analysis focuses on the correlation between the macroeconomic variables under investigation and the frequency with which a country is targeted for the imposition of antidumping duties. Specifically, the research hypothesis being examined is whether the frequency of a country being targeted for antidumping measures is associated with any of those macroeconomic variables.

Table 8 extends the analysis by evaluating whether macroeconomic factors influence the likelihood of a country being targeted for AD filings. Like Table 7, it differentiates between fully fulfilled and partially fulfilled hypotheses.

The findings suggest that GDP volume is the most consistent determinant of being targeted for AD filings, as larger economies face frequent accusations of dumping due to their high export volumes. Meanwhile, GDP growth rate again emerges as the weakest predictor, indicating that rapidly growing economies are not necessarily more vulnerable to AD measures unless accompanied by a large trade surplus. The results regarding this targeting reveal that 12 out of the 20 countries in the sample exhibit statistical significance with a p -value < 0.05 .

More specifically, we observe that 10 countries demonstrate a correlation between the frequency of being targeted and their GDP. For 8 of them (The United States, Japan, Russia, Turkey, Vietnam, Ukraine, South Africa, and Hong Kong) the results indicate that GDP volume is a macroeconomic factor that significantly influences the frequency with which

a country becomes a target for antidumping measures by its competitors. Indonesia and Canada experience a weaker correlation.

Table 8. Fulfillment of hypotheses on the relationship between macroeconomic factors and AD filings—targeted countries.

Hypothesis	Number of Countries (Fully Fulfilled)	Number of Countries (Partially Fulfilled)	Total Number of Countries in Sample
GDP volume affects how often a country is targeted.	8	2	20
GDP growth rate affects how often a country is targeted.	1	1	20
MTB affects how often a country is targeted.	9	0	20
Number of counties fulfilling at least one of the hypotheses.	12	0	20

Source: Authors' calculations based on data analysis from the WTO anti-dumping database and macroeconomic indicators from the World Bank and IMF.

The second macroeconomic factor, GDP growth rate, exhibits a weak correlation, limited to just two countries: China and Singapore (with the latter showing a p -value < 0.07). This finding suggests that the high volatility and fluctuations of this variable contribute significantly to the inability to establish a robust statistical correlation.

Regarding the third variable, the trade balance, we observe that 9 countries demonstrate a statistically significant correlation. Specifically, China, the United States, Japan, Russia, Vietnam, Ukraine, South Africa, Singapore, and Hong Kong confirm that the level of their trade balance influences the frequency with which they are targeted by their trading partners.

In conclusion, our analysis indicates that for these 12 countries, at least one of the macroeconomic factors we investigated is associated with the frequency of being targeted. Notably, it is equally important to highlight that these countries account for 47.32% of all antidumping cases. This finding underscores that macroeconomic variables can, to some extent, explain the behavior and decision-making processes related to resorting to the antidumping mechanism.

The results of our analysis reveal significant variability in how macroeconomic factors influence AD filings. For approximately half of the countries studied, GDP volumes and merchandise trade balance shows a correlation with the number of AD filings, indicating that AD measures largely depend on the trajectory and evolution of specific macroeconomic indicators.

Figure 3 provides a global overview of the significant correlations identified in the study.

Notably, key trading powers such as China, the United States, and the European Union exhibit strong statistical correlations between macroeconomic conditions and AD filings, reinforcing the idea that economic power and trade imbalances shape AD activity. However, the figure also reveals regional variability, as some economies do not display significant correlations, suggesting that additional factors, such as industry-specific policies and political motivations, may influence AD decisions. These findings highlight the complexity of AD behavior and the need for further research incorporating political and institutional variables.

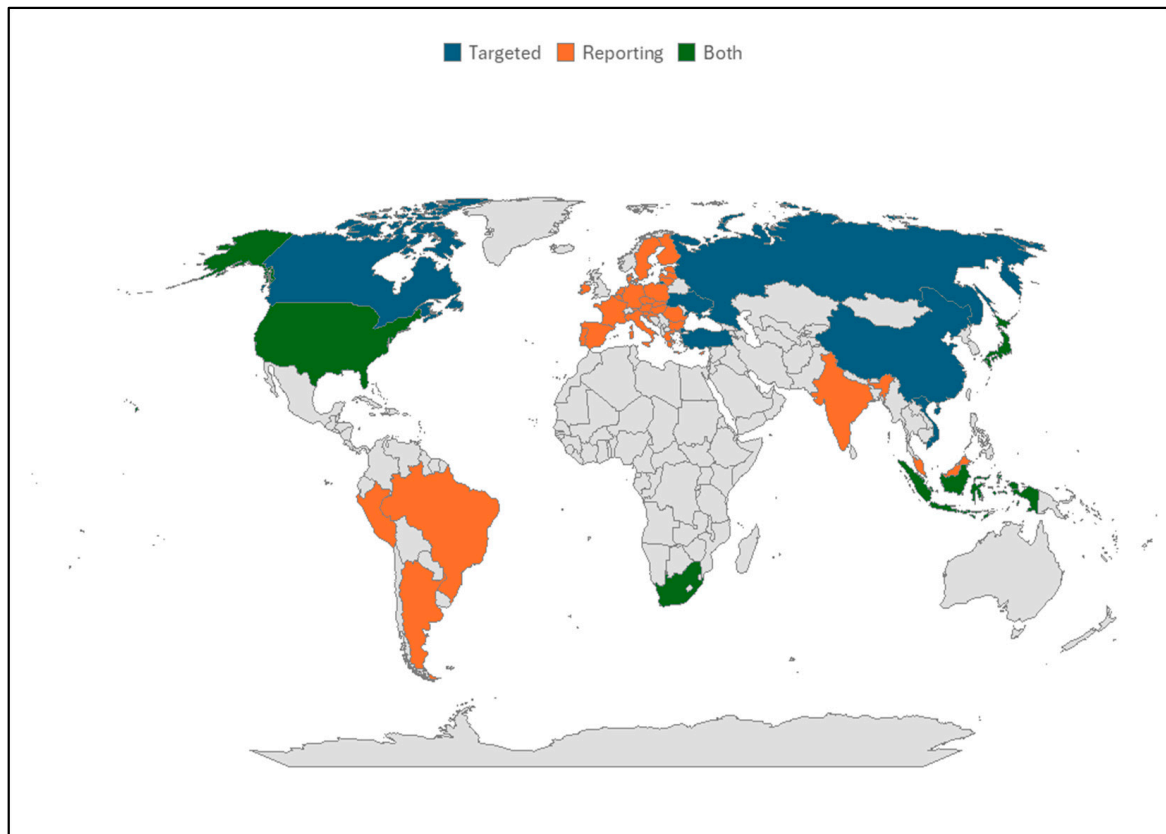


Figure 3. Countries with significant correlation coefficient as reported or targeted entity. Source: developed by the authors based on the statistical analysis results.

6. Discussion

Our analysis reveals that for many developing countries, deteriorating economic conditions, such as declines in GDP growth and worsening trade balances, are strongly correlated with increased AD filings. In contrast, developed countries exhibit more complex behavior, with some findings suggesting that these countries rely less on AD measures during periods of economic expansion, which aligns with earlier research by [Moore and Zanardi \(2011\)](#). These findings not only confirm the cyclical nature of AD activity but also provide new evidence about the varying motivations behind such filings across different economic environments.

Our research spans a particularly productive period for the AD mechanism, as it covers the peak of its utilization (1995–2022). Furthermore, the depth of recent data enables us to conduct reliable statistical analyses that more accurately describe the emerging trends in international trade, as the abundance of data enables more accurate statistical analyses.

Our findings confirm that macroeconomic factors influence the decision to resort to the AD mechanism, with particularly strong effects observed in several countries. Our findings support previous research ([Ahn & Shin, 2011](#); [Bown, 2011](#); [Feinberg, 1989](#)) showing that economic downturns significantly drive AD filings. As our results indicate, countries experiencing declining GDP volume are more likely to initiate AD cases, reinforcing the argument that trade defense mechanisms are often used as counter-cyclical policy tools. Specifically, we find that GDP is a prominent factor in this relationship, while the growth rate appears to have weak correlation. This can be attributed to the fact that the growth rate is a highly volatile variable with significant fluctuations that cannot be easily transformed into trade policy measures. These findings are largely expected and consistent with the results in international literature.

However, our research goes beyond identifying the correlation with GDP-related factors and seeks to investigate the impact of the trade balance. The analysis focuses on MTB that excludes the influence of services, as the mechanism is directed toward goods rather than services. In this case as well, it is observed that the trade balance often significantly affects a country's decision to resort to the mechanism. The observed relationship between trade balance deterioration and increased AD filings aligns with prior studies ([Aggarwal, 2004](#); [Akbas, 2022](#); [Niels & Francois, 2006](#)), which highlights that trade deficits often push governments toward protectionist measures. Our study extends this evidence by confirming that worsening trade balances not only drive AD filings but also increase a country's likelihood of being targeted.

Another interesting finding is that these factors are related not only to a country's decision to initiate an AD action against another country, but also to the frequency with which a country becomes a target of such actions. The evidence that GDP volume and trade balance influence the frequency with which a country is targeted for AD measures is supported by [Liu and Zhang \(2022\)](#), who argue that macroeconomic stability plays a role in determining a country's exposure to AD investigations. This suggests that trade imbalances and economic strength can increase a country's likelihood of being accused of dumping.

Additionally, the results show that the impact of GDP growth on AD filings varies by economic development level, aligning with [Moore and Zanardi \(2011\)](#), who found that economic contractions drive AD filings primarily in developing countries. Our findings suggest that GDP fluctuations have a weaker effect in developed economies, likely due to their diversified industrial structures and alternative trade policy tools.

These findings support criticisms that the AD mechanism evolved into a protectionist tool rather than a safeguard for fair competition. Our findings reinforce the concerns raised in studies ([Davis, 2009](#); [Prusa, 2005](#)) that AD measures are often used strategically rather than purely as a response to unfair trade practices. The statistical correlations between AD filings and macroeconomic instability support the argument that AD policies frequently serve protectionist purposes, particularly during periods of economic uncertainty. Consequently, given that AD filings are closely linked to macroeconomic conditions, as shown in this study and supported by ([Coleman, 2024](#)), there is a strong case for WTO reform to ensure that AD measures are not misused for protectionist purposes. Policymakers should consider incorporating macroeconomic criteria in AD investigations to prevent unjustified trade restrictions.

Additionally, while our analysis highlights the role of macroeconomic factors in driving AD filings, it is important to acknowledge the influence of political economy factors and trade policy dynamics. Lobbying by domestic industries has been identified as a significant driver of AD petitions, as firms and industry associations exert pressure on governments to impose trade restrictions as a form of protectionism. In some cases, AD measures are used not in response to genuine dumping, but as a strategic tool to shield politically influential industries from foreign competition. Moreover, regional trade agreements also shape AD trends by altering the incentives for filing petitions. Countries within trade blocs, such as the European Union, often rely more on internal dispute resolution mechanisms rather than AD duties against fellow members, whereas AD cases tend to rise against non-members. Additionally, political factors such as election cycles and shifts in trade policy can influence AD activity, as policymakers may use protectionist measures to secure domestic support during periods of economic uncertainty.

7. Conclusions

In conclusion, while previous research laid the groundwork for understanding the economic and political factors influencing AD activity, our study expands the scope by

incorporating a wider range of macroeconomic indicators and applying them to both developed and developing countries. By doing so, we offer a more nuanced understanding of how global economic conditions shape trade protection policies. Our findings contribute to the ongoing discourse on the role of AD measures in international trade and may provide a foundation for future reforms to better regulate the use of these mechanisms.

This study enhances the understanding of how macroeconomic factors, specifically GDP volume, GDP growth rate, and MTB, affect AD filings across both reporting and targeted countries. By incorporating data from both developed and developing nations, our analysis moves beyond the industry- or sector-specific focus of earlier studies, offering a broader macroeconomic perspective. This broader scope allows us to identify new patterns in AD behavior, particularly in emerging economies that increasingly relied on the mechanism as their economies expand and global trade pressures intensify. The findings of this study hold significant practical implications for policymakers, trade regulators, and businesses engaged in international trade. By demonstrating that macroeconomic conditions, particularly GDP volume and trade balance, influence both the initiation and targeting of AD measures, this study provides valuable insights for designing more balanced trade policies.

As a summary, we can say the empirical findings and the extensive international literature dealing with the subject of AD duties show that a wide range of factors, including political, financial, macroeconomic, and legal, influence a country's decision to initiate a filing. Depending on the characteristics of each country, these factors seem to have different weight and influence on the final decision to file. Traditional user's vs. emerging users, developed countries vs. developing countries, level of legal expertise, political stability, inside ties and increased influence in international organizations seem to play a decisive role in shaping the mix of factors that ultimately influence the decision to file. [Nielsen and Svendsen \(2012\)](#) study lobbying activities in EU AD practices and find that there is a significant relationship between lobbying and political position. [Li \(2018\)](#) focuses on China as the country that faces the most AD investigations and concludes that a few factors, such as trade volume, GDP per capita, exchange rate, and others less obvious such as population and accession to WTO, are statistically significant. On the other hand, [Choi and Kim \(2014\)](#) show that India effectively took advantage of antidumping filings against export-oriented Asian countries during periods of low GDP growth and high unemployment. China, however, frequently filed antidumping measures against export-oriented Asian countries experiencing a trade deficit and a high unemployment rate. Their study suggests that Indian AD activities are closely related to trade liberalization policy and is highly concentrated on a few key industries with a massive footprint in the Indian economy.

8. Scientific and Practical Implementations

In sum, this study highlighted the critical role of macroeconomic factors in shaping AD filings, providing both empirical evidence and a theoretical framework that enriches the academic discussion on trade protectionism. The importance of macroeconomic stability in influencing trade policy decisions has been emphasized, especially in emerging markets where these mechanisms are increasingly utilized as defensive economic strategies.

The significance of our findings lies in their ability to inform not only policymakers, but also future academic research. By bridging the gap between macroeconomic conditions and trade policy, we provide a foundation for exploring new dimensions of AD usage. As global economic conditions become more volatile, understanding the underlying drivers of protectionist measures will become ever more crucial, and this study serves as a steppingstone toward that understanding.

9. Limitations

The limitations in research related to antidumping measures and macroeconomic factors primarily concern the use of aggregate national data, which may mask important industry-specific dynamics. AD filings often involve highly targeted sectors, and a more granular analysis might reveal stronger correlations between macroeconomic factors and AD behavior within specific industries. Additionally, the exclusion of service-related trade data limits the scope of our analysis, as services play an increasingly significant role in global trade but are completely outside the purview of AD laws.

Additionally, the emphasis on the top 20 reporting and targeted countries results in the underrepresentation of smaller economies and infrequent AD users. This limitation suggests that further research could expand the analysis to a more diverse group of nations to capture a broader range of AD behaviors and the factors driving them.

10. Directions for Future Research

Our study contributes to broader discussions about rising protectionism in global trade, particularly as countries face increasing pressure from economic volatility and the lingering effects of financial crises. The findings provide empirical evidence for the argument that AD mechanisms are not purely reactive but are often used preemptively by countries experiencing economic downturns. This aligns with the growing concern that such mechanisms are being co-opted as strategic tools to manage domestic political and economic challenges rather than to address genuine unfair trade practices.

For future research, we propose several areas of focus. First, the development of a multifactorial model that includes as many macroeconomic factors as possible to evaluate the overall impact of the macroeconomic environment on the mechanism. Another interesting area of research is to measure the delay effect. That is, the speed at which macroeconomic variables influence a country's trade policy, or, alternatively, how quickly a macroeconomic indicator is transformed into a trade policy measure.

Additionally, examining the interplay between macroeconomic factors and political dynamics, such as lobbying and electoral pressures, could provide deeper insights into the motivations behind AD measures. Furthermore, research that delves into the long-term consequences of repeated AD filings on trade relationships, particularly between emerging and developed economies, would be valuable in understanding the broader impacts of this trade policy tool.

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Abbreviations

The following abbreviations are used in this manuscript:

AD	Anti-dumping
GDP	Gross domestic product
IMF	International Monetary Fund
MTB	Merchandise trade balance
WTO	World Trade Organization

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