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Shifting Shores? The Effect of Anti-Dumping Measures on Egyptian Firms

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Abstract

This paper examines how Egyptian importing firms adjust when a product becomes subject to an anti-dumping investigation or duty. Using firm–product– origin customs data from 2005 to 2016, the analysis documents a pronounced investigation-stage adjustment: firms reduce import quantities while import unit values increase even before definitive duties are imposed. Enforcement leads to similar but more moderate adjustments. On the extensive margin, investigations reduce entry and increase exit in targeted product–origin relationships, indicating adjustment in affected sourcing relationships. The results provide no robust evidence of smooth diversion toward alternative suppliers, suggesting that anti-dumping procedures mainly operate through contraction and unit-value or compositional adjustments rather than sustained reallocation across origins. The paper provides firm-level evidence on how anti-dumping procedures shape import behavior in a developing-country context.

Keywords: NTMs, Anti-dumping, Firm-level data, Firm Adjustment, Egypt.
JEL Classifications: F13, F14

ملخص

تبحث هذه الورقة في كيفية تكيف الشركات المستوردة المصرية عندما يصبح المنتج خاضعًا لتحقيق أو رسوم مكافحة الإغراق. وباستخدام بيانات الجمارك الخاصة بمنشأ الشركة –المنتج– من عام 2005 إلى عام 2016، يوثق التحليل تعديلاً واضحاً في مرحلة التحقيق: حيث تعمل الشركات على خفض كميات الواردات بينما تزيد قيم وحدات الاستيراد حتى قبل فرض الرسوم الجمركية النهائية. ويؤدي التنفيذ إلى تعديلات مماثلة ولكن أكثر اعتدالا. وعلى الهامش الواسع، تعمل التحقيقات على تقليل الدخول وزيادة الخروج في علاقات المنتج المستهدف – المنشأ، مما يشير إلى التعديل في علاقات التوريد المتأثرة. ولا تقدم النتائج أي دليل قوي على التحويل السلس نحو الموردين البديلين، مما يشير إلى أن إجراءات مكافحة الإغراق تعمل بشكل رئيسي من خلال الانكماش وتعديلات قيمة الوحدة أو التركيب بدلاً من إعادة التخصيص المستدام عبر المنشأ. وتقدم الورقة أدلة على مستوى الشركات حول كيفية تأثير إجراءات مكافحة الإغراق على سلوك الاستيراد في سياق البلدان النامية.

1 Introduction

The past two decades have witnessed a steady rise in trade protection through anti-dumping (henceforth AD) duties, a form of non-tariff measure (NTMs)[1] that has become one of the most frequently used trade-remedy actions in the global trading system (Bown and Crowley, 2014; WTO, 2025). Since the mid-1990s, thousands of investigations have been initiated across almost fifty economies, and recent waves of contingent protection have attracted renewed attention from researchers and policymakers (Blonigen and Prusa, 2016). Although early users were primarily high-income economies, developing countries now file the majority of new cases as they confront expanding competitive pressure from large emerging exporters. This growing reliance on anti-dumping procedures has intensified in an environment where traditional tariff liberalization has largely stalled and where many countries have turned to alternative forms of protection. The expansion of anti-dumping activity has generated an extensive empirical literature on its drivers and consequences, yet much remains to be uncovered about how these measures shape the behavior of firms that rely on foreign suppliers for inputs and final goods.

The aim of this paper is to identify how importing firms adjust when a product becomes subject to an anti-dumping investigation initiated by Egypt or to the duty that may follow. The analysis focuses on changes in imported quantities, unit values, and extensive margins, and also examines whether firms redirect their sourcing toward alternative origins.

Egypt offers a particularly suitable context to study AD policy. Following WTO accession in 1995, Egypt has become an active user of trade remedies and is ranked second in Africa during the period 1995–2017 behind the Southern African Customs Union. Within the Middle East and North Africa (MENA), Egypt stands out as the primary initiator of AD investigations. The institutional framework also features relatively short investigation periods and recurrent use of provisional measures, creating distinct procedural

[1] According to UNCTAD, the International Classification of Non-Tariff Measures (NTMs) includes 16 chapters covering various categories. Chapters A–C are technical measures, while chapters D–O are non-technical. Chapter D groups contingent measures implemented to counteract adverse effects of imports, including measures addressing unfair foreign trade practices (anti-dumping, countervailing, and safeguard measures). Anti-dumping is Chapter D1.

phases that generate useful time variation for empirical analysis. Moreover, the combination of administrative customs records and detailed product-level AD policy data enables a granular mapping of firm–product–origin relationships to specific policy actions.

The empirical strategy exploits variation of different import margins within firm-product-origin over time by combining Egyptian firm-level customs data with the universe of anti-dumping (AD) measures imposed by Egypt on specific product–origin pairs over 2005–2016. The baseline specification includes firm–HS6–origin fixed effects, as well as origin–year and HS6–year fixed effects, which absorb origin-specific global shocks and product-level trends. This design controls for a broad set of macroeconomic, origin-specific, and product-specific shocks and exploits adjustment within firm–product–origin relationships over time. The analysis further distinguishes between the investigation and enforcement phases of the AD process, allowing the timing of firm responses to be examined explicitly rather than treating AD as a single treatment event. To assess whether AD measures induce trade reallocation across suppliers, the specification is augmented with third-country AD indicators that capture protection imposed on competing origins exporting the same product. This extension allows testing whether firms redirect imports toward non-targeted origins during investigations or enforcement.

The results indicate that firms adjust along both the intensive and extensive margins in response to anti-dumping procedures. Import quantities of targeted products decline during both the investigation and enforcement stages, while unit values increase, consistent with higher trade frictions associated with anti-dumping measures. The adjustment is more pronounced during the investigation phase, highlighting an investigation effect whereby firms respond to procedural uncertainty and the prospect of future duties before enforcement takes place. Extensive-margin responses are concentrated in the investigation phase. Investigations reduce entry into affected firm–product–origin relationships and increase exit probabilities, while enforcement generates little additional extensive-margin adjustment. At the same time, the evidence on reallocation across suppliers is sensitive to the fixed-effect structure. Specifications without sector–year fixed effects suggest short-run diversion during investigations, but this effect disappears once HS2–

year fixed effects are included. Following enforcement, imports from non-targeted origins decline while unit values increase. The findings are robust for the direct effects on targeted imports, while third-country effects remain more sensitive to alternative fixed-effect structures.

Contribution. A first contribution concerns perspective. The literature[2] has mainly examined how foreign exporters respond when facing AD duties imposed abroad, focusing on export values, product scope, or prices (Lu et al., 2013; Felbermayr and Sandkamp, 2020; Ciani and Stiebale, 2024). Evidence on how firms in the filing country adjust their sourcing behaviour is scarce. This paper instead studies Egyptian importers' responses, showing how protection reshapes firms' import sourcing. The analysis therefore complements existing work on import-side adjustments, which has been documented primarily for the European Union and the United States (Konings et al., 2001). Hence, this paper shifts the perspective from targeted exporting countries to the filing country and its importing firms.

A second contribution relates to the empirical setting. Existing firm-level studies on AD have largely focused on measures imposed by high-income importers against China (Chandra and Long, 2013; Jabbour et al., 2019; Konings and Vandenbussche, 2013; Prusa et al., 2022; Sandkamp, 2020). Micro-evidence from developing economies that initiate and enforce AD measures remains limited. Recent exceptions primarily concern China and Peru (Bao et al., 2021; Eckel et al., 2023; Ciani and Stiebale, 2024). In the MENA region, prior work on Egypt has relied on aggregate data (Hazem and Zaki, 2020). This paper uses firm–product–origin customs data to study anti-dumping enforcement in Egypt, providing new micro-level evidence on how trade defence instruments operate in a MENA economy characterized by heavy reliance on imports and frequent use of anti-dumping measures.

A third contribution relates to the dynamics of protection. AD measures unfold over distinct procedural stages, typically generating (i) investigation effects, (ii) enforce-

[2] Blonigen and Prusa (2016) provide a comprehensive overview of the empirical literature on antidumping. They find that the majority of studies focus on the determinants of antidumping filings and the effects of antidumping duties on trade flows.

ment or destruction effects, and (iii) diversion toward non-targeted origins (Hazem and Zaki, 2020). The paper estimates adjustments during the investigation phase and after definitive enforcement (similar to Lu et al. (2013)). This distinction reveals substantial pre-definitive-duty adjustment, consistent with anticipation, procedural uncertainty, and potentially provisional measures, in line with earlier evidence from the U.S., EU, and China showing that trade flows may respond before duties become effective (Prusa, 2001; Cuyvers and Dumont, 2005). In addition, the analysis examines potential reallocation across supplying countries and shows that evidence of trade diversion is sensitive to the fixed-effect structure. This provides new evidence on the dynamics of adjustment by distinguishing between the investigation and enforcement phases and by assessing whether protection induces substitution toward non-targeted origins.

The paper is structured as follows. Section 2 presents the institutional framework governing anti-dumping procedures under WTO rules and their implementation in Egypt. Section 3 describes the data and presents stylized facts. Section 4 outlines the empirical framework and identification strategy. Section 5 reports the main results and robustness checks. Section 6 concludes.

2 Institutional Framework

2.1 The WTO Framework on Anti-Dumping Measures

Anti-dumping measures are the most frequently used form of temporary trade barrier (TTB). Their use is governed at the multilateral level by the World Trade Organization (WTO) through the Agreement on Implementation of Article VI of the GATT 1994, commonly known as the Anti-Dumping Agreement (ADA). The ADA establishes the legal framework under which member countries may impose anti-dumping (AD) duties on imports from a specific source when dumping causes or threatens material injury to a domestic industry, including the possibility of duties exceeding bound tariff rates. Under Article VI and national trade laws, dumping occurs when goods are exported at prices below their "normal value". Normal value is generally based on comparable

domestic-market prices and, where those cannot appropriately be used, may be based on third-country prices or a constructed value.

Under the WTO framework, anti-dumping investigations are conducted by national authorities following detailed procedural rules. These rules specify how dumping margins are calculated, how injury must be demonstrated, and how the causal link between dumped imports and injury is established. Importantly, a petition for investigation must be made by or on behalf of the domestic industry and must satisfy the standing requirements established under the Anti-Dumping Agreement. These requirements ensure a minimum degree of support from domestic producers. Initiating an investigation is therefore complex and resource-intensive, requiring detailed industry-level data on prices, costs, and injury.

To ensure fairness and transparency, the ADA requires public notice of investigations, opportunities for interested parties to present evidence, and publication of the final determinations. Institutionally, the Committee on Anti-Dumping Practices (AD Committee) oversees the implementation of the ADA. WTO members must notify the Committee of their national anti-dumping legislation and any new measures adopted. The Committee serves as a platform for peer review, monitoring, and consultation regarding members' compliance with the ADA.

The WTO's institutional framework for anti-dumping therefore combines national autonomy in investigation and enforcement with multilateral oversight and legal discipline through notification and peer monitoring mechanisms. The requirement that cases be initiated by an industry, rather than a single firm, and the substantial administrative costs associated with filing and pursuing such cases, help explain why anti-dumping actions often arise in sectors with organized and influential producer groups rather than as reactions to individual firm-level trade shocks.

2.2 The Egyptian Anti-Dumping Framework

Egypt's approach to anti-dumping regulation has evolved gradually in response to changes in trade policy and international commitments. Although Egypt acceded to the General

Agreement on Tariffs and Trade (GATT) in 1970, early trade policy relied mainly on import restrictions and quantitative controls rather than legal trade remedies. Until the early 1990s, there was no clear domestic framework for addressing dumping or subsidization, and Customs Law No. 66 of 1963 provided only indirect reference to such practices.

The situation changed with the economic reform and structural adjustment program launched in 1991, which shifted policy toward trade liberalization and tariff-based protection. Following Egypt's accession to the World Trade Organization (WTO) in 1995, the government was required to align its trade legislation with multilateral disciplines, including those contained in the WTO Anti-Dumping Agreement.

In response, Law No. 161 of 1998 on the Protection of the National Economy from the Effects of Harmful Practices in International Trade was enacted. This law established Egypt's modern trade-remedies regime. The law and its executive regulations set out detailed procedures for anti-dumping, countervailing, and safeguard investigations. They explicitly link domestic rules to WTO principles while preserving some interpretive flexibility in their application.

Under this framework, the Anti-Dumping and Subsidy Investigation Authority within the Ministry of Trade and Industry serves as the competent authority. It comprises four main directorates, including those responsible for anti-dumping measures. The department is tasked with receiving and examining complaints, conducting investigations, calculating dumping margins, assessing injury, and recommending measures to the Minister of Trade. The executive regulations specify the stages of an investigation, ranging from the determination of dumping and injury to the imposition of provisional and final duties, the acceptance of undertakings, and periodic reviews.

Although these procedures closely follow the WTO Anti-Dumping Agreement, several provisions, especially those related to injury assessment and final duties, give Egyptian authorities broad discretionary powers. In borderline cases, this discretion may affect how injury and causality are assessed.[3] In the Egyptian context, scholars note that the

[3]See Andersen Egypt (2024), Anti-Dumping Law Reforms," available at https://eg.andersen.com/ar/Anti-dumping-law-reforms/ and Anti-Dumping and Competition Law in Egypt," available at https://eg.andersen.com/ar/anti-dumping-and-competition-law-egypt/.

system has evolved from a protectionist regime to a rules-based framework. It is formally consistent with WTO disciplines, while still shaped by local institutional realities and administrative capacity (Abdel-Azim and Khalil, 2022).

In practical terms, anti-dumping actions in Egypt reflect industry-level rather than firm-level dynamics. A complaint must be submitted by or on behalf of domestic producers representing a substantial share of national output of the like product. Preparing such petitions requires detailed data on prices, costs, and injury indicators, which entails significant administrative and financial costs. As a result, investigations are typically initiated by organized industry groups or large firms with sufficient capacity to coordinate evidence and pursue legal procedures. This collective mechanism explains why anti-dumping measures in Egypt tend to arise from coordinated industry petitions rather than individual firm reactions. This institutional feature is important when interpreting these measures as policy exposure in empirical analysis.

3 Data and Stylized facts

3.1 Data on Anti-dumping Measures

Information on anti-dumping measures is drawn primarily from the Integrated Trade Intelligence Portal (I-TIP Goods) maintained by the World Trade Organization (WTO). The I-TIP database provides a single access point for notifications of non-tariff measures (NTMs) submitted by WTO members and includes a comprehensive record of technical barriers to trade, sanitary and phytosanitary measures, anti-dumping actions, countervailing measures and specific trade concerns raised in WTO committees.

To ensure consistency and accuracy, these data were aligned and verified using the Global Anti-Dumping Database (GAD), part of the Temporary Trade Barriers Database compiled by Signoret et al. (2020) and hosted by the World Bank, which builds on earlier work by Bown (2005) and Bown (2011). According to this database, Egypt is the most frequent user of anti-dumping measures within the group of "Other Antidumping User Countries with Limited Data," confirming its active use of this policy instrument during

the period under study.

Using these sources, a detailed dataset was constructed to identify anti-dumping actions by product, origin, and year. The database distinguishes between the investigation and enforcement phases using the recorded initiation, implementation, and withdrawal dates of each case. This information was merged with the GOEIC import panel at the HS6 level to identify, for each product–origin–year observation, exposure to an anti-dumping investigation or an enforced measure.

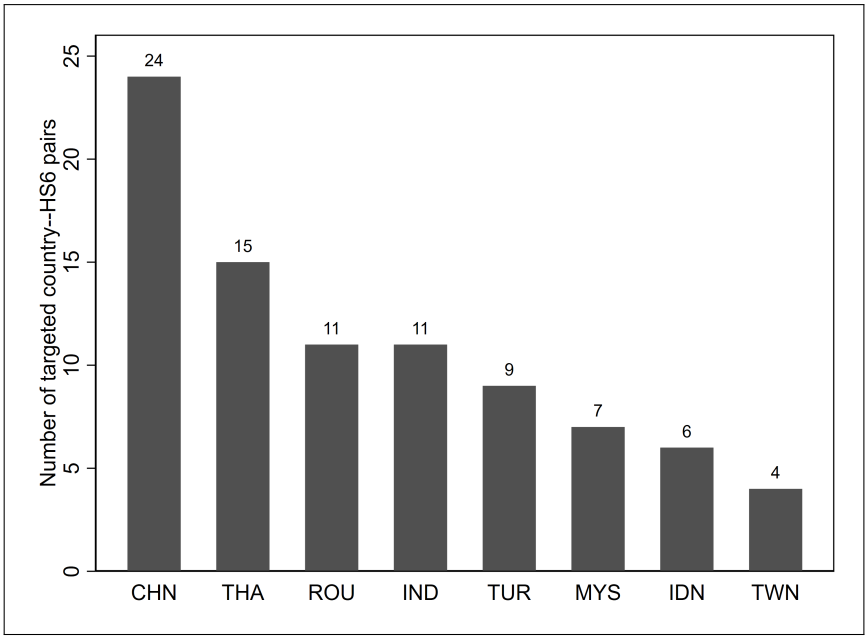
Moreover, to account for the broader trade policy environment, the analysis also incorporates applied import tariffs by origin and sector (HS6 level). This allows separating the effect of anti-dumping actions from standard tariff protection. Tariff data were obtained from the World Integrated Trade Solution (WITS) for the same set of origin countries covered in the sample for the period 2005–2016.

Table A1 reports the full list of products subject to Egypt's anti-dumping (AD) enforcement over 2005–2016. The pattern is consistent with Egypt's industrial structure: the targeted products are predominantly low- to medium-technology manufactures such as plastics, rubber tyres, blankets, ceramics, welding electrodes, batteries, lamps and simple stationery goods. These are sectors in which domestic production capacity exists, often with large state-owned or long-established private producers, and where foreign competition, especially from Asia, has historically been strong. The fact that these items are produced locally makes it economically plausible that Egyptian firms would file AD complaints, since they directly compete with imported like-products and are sensitive to price undercutting. The product-level targeting therefore fits well with the institutional and economic context behind Egypt's use of AD instruments.

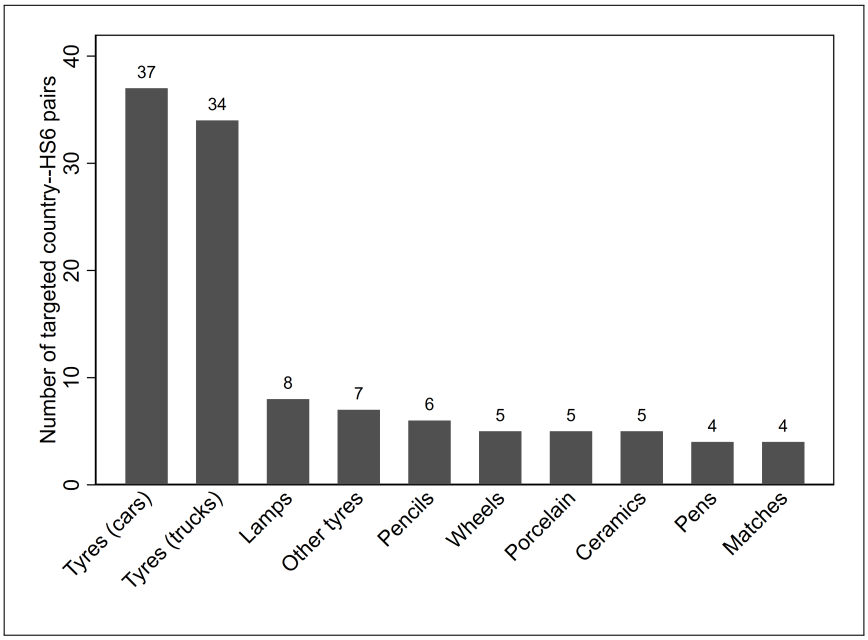
The institutional process is well established: in the sample, investigations last around 12 months on average, with the shortest observed investigation lasting 7 months; WTO rules allow investigations to last up to 18 months. Figure 1 reports the distribution of anti-dumping measures across partner countries (panel a) and across HS6 product lines (panel b). Each bar corresponds to a distinct country–HS6 action, so a duty applied to several products from the same origin is counted multiple times. Panel (a) shows a

clear concentration: China accounts for 24 measures, more than the next two countries combined, followed by Thailand (15), Romania (11), India (11) and Türkiye (9). A second tier of Asian suppliers, such as Malaysia, Indonesia, Taiwan, Korea and Japan, is also present but with considerably fewer cases.

Panel (b) reveals a similarly uneven pattern across products. Two rubber-tire categories (HS 401110 and 401120) dominate, with 37 and 34 actions respectively, far above any other item. A smaller set of products, including electrical components (HS 853931), rubber articles (401199), stationery (960910, 960810), vehicle parts (870870), and ceramics (691200, 691110), appears with much lower frequencies, typically between four and eight cases. Taken together, these patterns show that Egypt's use of anti-dumping measures is highly concentrated, both across origins and across product lines. This uneven exposure creates clear variation in partner-product combinations, which is central for the empirical analysis that follows.



(a)



(b)

Figure 1: Anti-dumping measures: (a) distribution by country of origin and (b) coverage by HS6 products.

Notes: panel (a) shows the number of targeted origin–HS6 pairs by origin; panel (b) shows number of targeted origin–HS6 pairs by HS6 product. Product descriptions are reported in table A1.

401110 = New pneumatic tyres, of rubber, used for motor cars (including station wagons and racing cars) 401120= New pneumatic tyres, of rubber, used on buses or lorries 853931= Discharge lamps, fluorescent, hot cathode 401199= Pneumatic tyres, new, of rubber (excl. having a "herring-bone" or similar tread.) 960810= Ball-point pens 870870= Road wheels and parts and accessories 691200= Ceramic tableware, kitchenware, other household and toilet articles, other than of porcelain or china 691110= Porcelain and ceramic tableware 960910= Pencils and crayons, with leads encased in a rigid sheath 360500= Matches

Source: Author's calculations using WTO I-TIP Goods notifications.

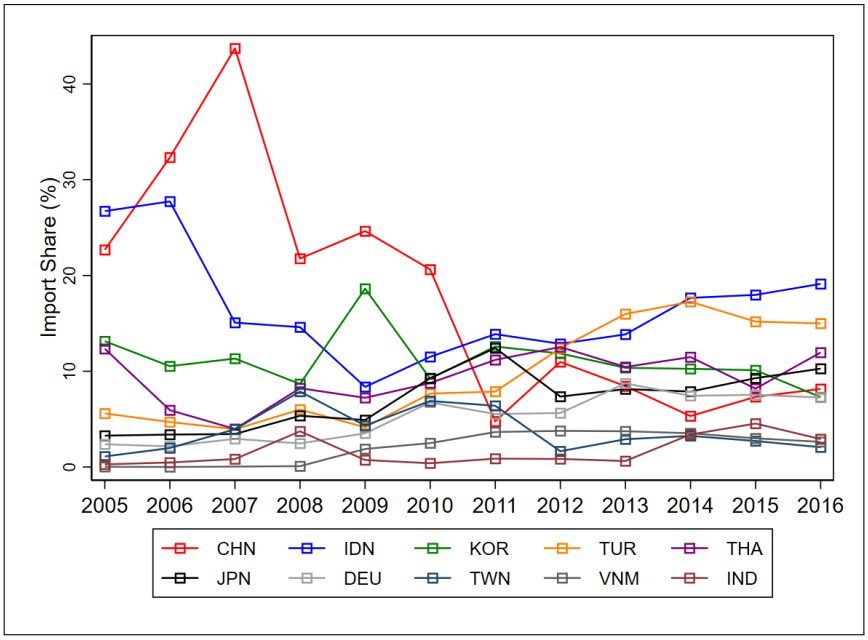
3.2 Firm-level customs data

The analysis relies on firm-level transactions obtained from the General Organization for Export and Import Control (GOEIC), which operated under the Ministry of Industry and Foreign Trade in Egypt during the period 2005–2016. The database is constructed from customs declarations and provides annual information on importing firms, including the six-digit Harmonized System (HS6) product codes, the country of origin, and the total value and quantity of trade flows (OAMDI, 2017).

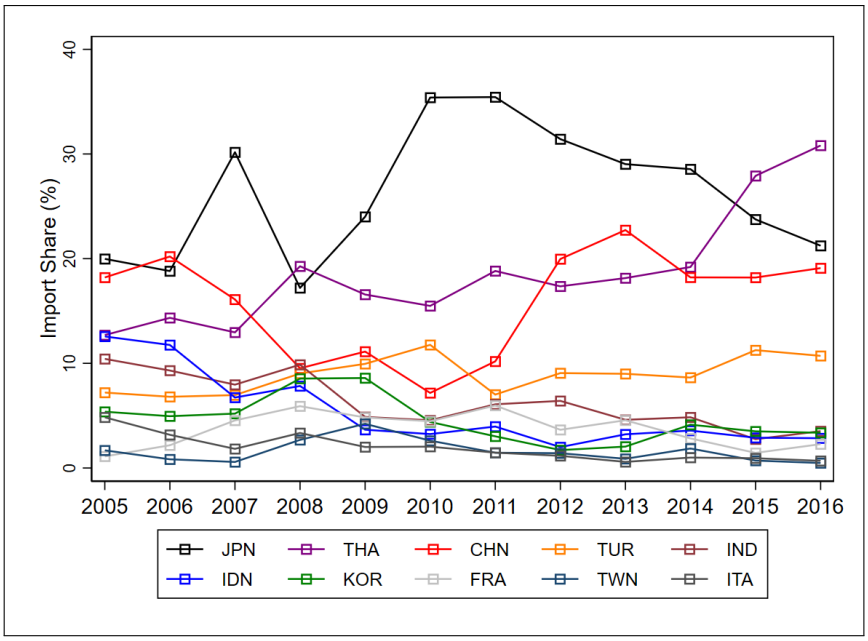
A key strength of these data lies in their granularity, which allows tracing trade activities at the firm–product–origin level. This detailed structure makes it possible to examine how anti-dumping measures shape the intensive and extensive margins of trade, the likelihood of firms exiting foreign markets, and the evolution of import unit values.

A notable limitation, however, is the absence of firm-level characteristics such as employment, productivity, or wages. The database cannot be merged with other firm-level sources, as the identifiers used in GOEIC records differ from those in other administrative or survey data. To address this constraint and preserve the universe of Egyptian importers, the analysis relies on import-based indicators when controlling for firm heterogeneity in the estimation of the effects of anti-dumping measures.

Figure 2 presents the evolution of import shares for the two most frequently targeted products: New pneumatic tyres (panel (a) for HS 401110 and panel (b) for 401120). The patterns show that the composition of Egypt's suppliers is highly fluid over time. When a major exporter—such as China—faces an AD action, its import share often declines, while the shares of alternative suppliers like Thailand, Korea, Turkey, or Japan appear to increase in the same period. This rotation in market shares suggests possible reallocation across origins, although it may also reflect compositional changes among suppliers and does not by itself provide robust evidence of smooth trade diversion. Although descriptive, these patterns suggest that anti-dumping measures may be linked to shifts in Egypt's sourcing structure, both along the intensive margin through changes in import shares and along the extensive margin through changes in the set of supplying countries. This also motivates the empirical analysis that follows.



(a)



(b)

Figure 2: Evolution of Import Shares for (a) new pneumatic tyres for motor cars (HS 401110) and (b) new pneumatic tyres for buses or lorries (HS 401120).

Notes: Import share is defined as the percentage of Egypt's total imports of the HS6 product sourced from each partner country in a given year. Country codes: CHN = China; JPN = Japan; KOR = Republic of Korea; IDN = Indonesia; THA = Thailand; TUR = Türkiye; IND = India; FRA = France; ITA = Italy; TWN = Taiwan.

Source: Author's calculations using GOEIC customs data (Egypt, 2005–2016).

4 Empirical Strategy

4.1 Identification Strategy

To examine how anti-dumping investigations and enforcement are associated with firms' import behavior, the analysis estimates the following model:

$$y_{fopt} = \beta_1 ADP^{Invest}_{op,t-1} + \beta_2 ADP_{op,t-1} + \beta_3(\text{Size}_{f,t0} \times \mu_t) + \beta_4 \ln(1+\text{tariff})_{op,t-1} + \gamma_{fop} + \delta_{ot} + \delta_{pt} + \varepsilon_{fopt}. \tag{1}$$

where f denotes firm, o the country of origin, p the product at the HS6 level, and t the year. The dependent variable y_{fopt} captures different import margins. To study the *intensive margin*, the analysis considers: (i) the logarithm of imported quantities and values; (ii) the logarithm of import unit values. These outcomes capture adjustments in both the scale of firms' imports and observed import unit values.

To analyze the *extensive margin*, three variables are used: (iii) a dummy for firm–product import participation, which equals one if a firm records a positive import flow for a given product–origin combination in year t; (iv) a dummy for firm entry in a particular import market, equal to one if a firm imports a product from a given origin in years t and $t+1$ but did not import it in $t-1$ and $t-2$; and (v) a dummy for firm exit in a particular import market, equal to one if a firm does not import a product from a given origin in years t and $t+1$ but had imported it in $t-1$ and $t-2$. This definition of entry and exit reduces the influence of short-term churning in trade relationships and isolates more persistent changes in import participation. By construction, these stricter definitions make entry and exit events relatively infrequent at the firm–product–origin level. Moreover, distinguishing participation, entry, and exit allows decomposing changes along the extensive margin. Participation captures the net effect of anti-dumping measures on market presence, while entry and exit capture the underlying flows of firms entering and leaving import markets. In markets with established sourcing relationships, policy exposure may affect the extensive margin through different channels, including both firm exit and new entry, with the relative importance of each margin potentially varying across

policy phases.

Linear probability models (LPMs)[4] are used as a baseline specification for binary outcomes. In addition, Poisson Pseudo-Maximum Likelihood (PPML) estimators are employed, which are well suited for rare events and high-dimensional fixed effects. PPML is particularly informative for exit and entry outcomes, which, under the stricter definitions, exhibit a large mass of zeros (Silva and Tenreyro, 2006; Correia et al., 2023). Comparing LPM and PPML estimates helps assess the sensitivity of extensive-margin responses to alternative estimation strategies.

The key policy variables capture the two stages of Egypt's anti-dumping process $ADP^{invest}_{op,t-1}$ equals one when product p from origin o is in the investigation phase in year $t-1$, prior to definitive enforcement; provisional measures may occur during this phase. $ADP_{op,t-1}$ equals one when a definitive anti-dumping measure is in force. All policy variables are lagged by one year to reduce concerns about contemporaneous feedback from firm-level import decisions to anti-dumping policy.

Firm size is included as a control and interacted with the time fixed effects. Since the dataset does not provide comprehensive information on firms' balance sheets, size is measured by the value of total imports rather than total sales. Firm size is taken in the initial year of observation to avoid endogeneity concerns and to ensure that firms entering after the first year of data are retained in the sample. This approach avoids confounding size with the anti-dumping variable and controls for systematic differences in firm trajectories. To disentangle the effects of these non-technical barriers from conventional tariff protection, all specifications additionally control for applied ad-valorem tariffs at the product level, measured as $ln(1+\text{tariff})_{op,t-1}$[5].

The estimation includes a rich set of fixed effects [6]. Firm–product–origin fixed effects

[4]This approach is standard in empirical trade work (e.g. Fontagné et al. (2015) ; Fernandes et al. (2019) ; Lee et al. (2023)). Non-linear estimators like probit or logit would be less suitable in this setting because the inclusion of multiple high-dimensional fixed effects can lead to incidental parameter bias and considerable computational burden. Since fixed effects are essential to the identification strategy, the linear probability model provides a practical alternative that preserves the required specification, with the caveat that point estimates should be interpreted cautiously. Estimation is performed using reghdfe in STATA (Correia, 2023).

[5]Tariffs are reported in percentage points (e.g. a 5 percent ad-valorem tariff is recorded as 5) and are rescaled by dividing by 100 before applying the price-equivalent transformation $ln(1+\text{tariff})_{op,t-1}$.

[6]A similar identification strategy has been used in Kamal and Zaki (2018) and Iodice and Reverdy

(γ_{fop}) absorb all time-invariant characteristics specific to each firm's trading relationship with a given product and origin, such as technology intensity, long-term supply arrangements, or product specialization. The model additionally includes origin–year fixed effects to absorb exporter-specific shocks, and HS6–year fixed effects to control for product-level shocks and global trends common across origins. In alternative robustness specifications, the HS2–origin–year fixed effects ($\delta_{o,HS2,t}$) control for macroeconomic fluctuations, import-demand shocks, and multilateral trade resistance factors that vary jointly across origins and sectors, as emphasized by Head and Mayer (2014).

A particular feature of the data structure deserves attention. To track firm–product–origin combinations over time and to compute entry, participation, and exit, the dataset is squared, meaning that zero observations were added for firm–product–origin combinations with no recorded trade in a given year. This procedure is essential for constructing the extensive-margin variables and ensures that changes in import participation are observed over the full period. Because the analysis is conducted at the HS6 level—rather than the HS4 level used in many earlier studies—this step considerably increases the number of observations, especially for the extensive-margin estimations.

The identification strategy aims to address two main sources of endogeneity: omitted variable bias and reverse causality. The inclusion of firm–product–origin fixed effects absorbs time-invariant heterogeneity related to firm capabilities, product characteristics, and bilateral sourcing relationships. In addition, origin–year and product–year fixed effects control for origin-specific shocks and sector-level trends that may simultaneously affect import behavior and the likelihood of anti-dumping protection. Reverse causality may arise if Egypt initiates anti-dumping investigations in response to unusually high import penetration from a particular origin. The granular specification and fixed effects absorb important sources of confounding, but they do not eliminate endogeneity related to time-varying product–origin shocks or the timing of AD filings. This limitation motivates a cautious interpretation of the estimated relationships.

Finally, standard errors are clustered at the product–origin–year level to allow for

(2025), where, however, they study the effect of TBTs.

correlated shocks among firms importing the same product from the same origin in a given year.

4.2 Import diversion effects

To assess whether anti-dumping measures generate third-country adjustments across origin countries, Equation (1) is augmented with a third-country anti-dumping indicator. This variable equals one if, in year $t-1$, a firm f's product p is subject to an anti-dumping investigation or duty imposed by Egypt against any origin other than o. The coefficient on this variable captures whether protection against competing exporters affects imports from unaffected origins supplying the same product. Third-country adjustments may operate along both the intensive margin, through changes in import volumes or unit values, and the extensive margin, by affecting participation and exit decisions of firms sourcing from non-targeted origins. Studies of trade deflection have estimated this effect at the product-level (Bown and Crowley, 2007) and firm-level (Bao et al., 2021).

This specification is implemented for both phases of the anti-dumping process. A third-country investigation dummy $ADP_{op,t-1}^{Invest,third}$ captures third-country adjustments during the investigation phase, while a third-country enforcement dummy $ADP_{op,t-1}^{third}$ captures third-country adjustments following the imposition of duties. Distinguishing between these two phases allows for an assessment of whether trade diversion arises in anticipation of protection or only after duties become binding. This empirical strategy follows the standard approach in the trade policy literature, including studies of preferential trade agreements, where diversion is identified by examining whether discriminatory trade barriers redirect trade flows toward non-targeted exporters.

4.3 Endogeneity: Further discussion

A central challenge in identifying the effects of AD policy is the potential endogeneity of the filing decision. Petitions are initiated by domestic producers who compete with foreign suppliers. These industries tend to request protection when they experience rising import penetration, falling market shares, or financial distress.

Working at the firm–HS6–origin level helps mitigate several of these concerns. The analysis does not rely on industry-level aggregates, and the HS6 granularity maps treatment directly to the exact product lines named in AD petitions. This reduces the risk that broader sectoral shocks or compositional changes drive the results. Moreover, the empirical specification includes an extensive set of fixed effects: firm–HS6–origin fixed effects absorb all time-invariant bilateral sourcing patterns; origin–year fixed effects capture shocks affecting exporting countries; and HS6–year fixed effects net out global or sector-specific trends. Together, these absorb many of the factors that jointly influence import competition and the likelihood of filing.

Nevertheless, endogeneity concerns cannot be eliminated entirely. Domestic producers may lobby for AD at times of heightened foreign competition, and politically influential sectors may be more successful in securing investigations.[7] Evidence for Egypt shows that political connections shaped access to non-tariff protection, including trade remedies (Eibl and Malik, 2016). To provide insight into timing and potential anticipation, the analysis distinguishes the investigation phase—before definitive duties are imposed—from the enforcement phase. Detecting adjustments in the investigation window offers suggestive evidence of behavioural responses prior to duty imposition, consistent with market expectations, uncertainty, procedural frictions, or provisional measures. Within these limitations, the empirical design provides a structured framework to examine firm-level adjustments in import behavior around anti-dumping investigations and subsequent enforcement.

Table 1: Intensive Margin Estimation: Quantity

	(1) ln(Quantity)	(2) ln(Quantity)	(3) ln(Quantity)	(4) ln(Quantity)
$ADP^{Invest}_{op,t-1}$	-0.338**		-0.352**	-0.375**
	(0.150)		(0.150)	(0.151)
$ADP_{op,t-1}$		-0.201*	-0.217**	-0.208*
		(0.113)	(0.109)	(0.110)
$\ln(1+\text{tariff})_{op,t-1}$				-0.987***
				(0.203)
Size Trend	No	No	No	Yes
Firm–HS6–Origin FE	Yes	Yes	Yes	Yes
Origin–Year FE	Yes	Yes	Yes	Yes
HS6–Year FE	Yes	Yes	Yes	Yes
Observations	2,330,376	2,330,376	2,330,376	2,235,803
R-squared	0.775	0.775	0.775	0.775

Notes: Outcomes and variables are defined in section 4.1. Investigation effect refers to the period in which an anti-dumping case is under investigation prior to definitive enforcement; provisional measures may occur during this phase. Enforcement effect refers to the period in which an anti-dumping duty is imposed by Egypt. Robust standard errors clustered at the HS6–origin–year level in parentheses.* p<0.10, ** p<0.05, *** p<0.01.

5 Results

5.1 Baseline Results

5.1.1 Intensive Margin

Table 1 reports the effects of anti-dumping investigations and enforcement on imported quantities. Across specifications, both stages of the anti-dumping process are followed by a contraction in import volumes. Quantities decline already during the investigation phase, and this decline persists after duties are enforced. The estimated effects are stable across specifications and remain robust to the inclusion of size trends and tariff controls.

The presence of quantity adjustments during the investigation phase indicates that firms modify their sourcing behavior before definitive duties are imposed. This pattern is consistent with heightened uncertainty, procedural frictions, and expectations of higher future trade costs once an investigation is initiated. Similar investigation-phase responses

[7] A direct analysis of petitioning domestic producers remains constrained. The data available for this study do not permit matching petitioning domestic producers to firm-level outcomes

have been documented for Egypt by Hazem and Zaki (2020), who report significant adjustments prior to the imposition of definitive anti-dumping duties. Enforcement is also followed by lower quantities, although the estimated response is smaller than during the investigation phase, suggesting that a substantial share of the adjustment occurs before definitive duties become binding.

Table 2 reports the corresponding effects on unit values and import values. In contrast to quantities, unit values increase during both the investigation and enforcement phases. This pattern is stable across specifications and remains robust to the inclusion of tariff controls and firm size trends. The increase in unit values is consistent with price and/or compositional adjustments among imported varieties.

Import values, reported in the last column of Table 2, do not display a statistically significant response to either investigation or enforcement. This reflects an offsetting pattern in which declining quantities and rising unit values leave total import expenditure broadly unchanged. Taken together, these results point to a reorganization of imports along the intensive margin, whereby firms adjust both volumes and unit values rather than exiting affected markets. Tariffs enter with the expected negative sign for quantities and import values, consistent with their role as variable trade costs.

Table 2: Intensive Margin Estimation: Unit Values and Import Value

	(1) ln(Unit Value)	(2) ln(Unit Value)	(3) ln(Unit Value)	(4) ln(Unit Value)	(5) ln(Import Value)
$ADP^{Invest}_{op,t-1}$	0.330**		0.344***	0.352***	-0.004
	(0.130)		(0.129)	(0.130)	(0.055)
$ADP_{op,t-1}$		0.212**	0.228**	0.220**	0.033
		(0.100)	(0.097)	(0.098)	(0.044)
$\ln(1+\text{tariff})_{op,t-1}$				0.094	-0.909***
				(0.163)	(0.100)
Size Trend	No	No	No	Yes	Yes
Firm–HS6–Origin FE	Yes	Yes	Yes	Yes	Yes
Origin–Year FE	Yes	Yes	Yes	Yes	Yes
HS6–Year FE	Yes	Yes	Yes	Yes	Yes
Observations	2,330,376	2,330,376	2,330,376	2,235,803	2,235,803
R-squared	0.747	0.747	0.747	0.747	0.818

Notes: Outcomes and variables are defined in Section 4.1. The investigation effect refers to the period in which an anti-dumping case is under investigation prior to definitive enforcement; provisional measures may occur during this phase. The enforcement effect refers to the period in which an anti-dumping duty is imposed by Egypt. Robust standard errors clustered at the HS6–origin–year level in parentheses. * p<0.10, ** p<0.05, *** p<0.01.

5.1.2 Extensive Margin

Table 3: Extensive Margin Estimation: Participation, Entry, and Exit

	Participation		Entry		Exit	
	OLS	PPML	OLS	PPML	OLS	PPML
$ADP^{Invest}_{op,t-1}$	0.008	0.056	-0.003**	-0.321***	0.006***	0.180**
	(0.005)	(0.035)	(0.001)	(0.108)	(0.002)	(0.079)
$ADP_{op,t-1}$	-0.004	-0.050**	-0.002	-0.050	0.000	0.012
	(0.004)	(0.025)	(0.001)	(0.080)	(0.001)	(0.069)
$\ln(1+\text{tariff})_{op,t-1}$	-0.004	-1.216***	-0.050***	-1.546***	-0.009***	-0.348**
	(0.004)	(0.076)	(0.004)	(0.164)	(0.003)	(0.154)
Size Trend	Yes	Yes	Yes	Yes	Yes	Yes
Firm–HS6–Origin FE	Yes	Yes	Yes	Yes	Yes	Yes
Origin–Year FE	Yes	Yes	Yes	Yes	Yes	Yes
HS6–Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	29,097,638	27,143,410	29,097,638	4,177,404	29,097,638	4,005,241
R^2 / Pseudo-R^2	0.187	0.124	0.147	0.236	0.131	0.140

Notes: Robust standard errors clustered at the HS6–origin–year level in parentheses. OLS estimates use linear probability models. PPML estimates follow `ppmlhdfe`. * p<0.10, ** p<0.05, *** p<0.01.

Table 3 examines how anti-dumping measures affect firms' participation, entry, and exit decisions. The results show that extensive-margin adjustments are concentrated in the investigation phase, affecting both entry and exit, while enforcement effects are more limited. During the investigation phase, firms are more likely to exit affected product–origin markets: both OLS and PPML[8] estimates display positive and statistically significant exit responses. At the same time, entry declines, with negative and significant coefficients, particularly in the PPML specification. This pattern indicates that the initiation of an investigation discourages continued sourcing relationships by incumbent importers and deters new entry, even before definitive duties are imposed.

During the enforcement phase, extensive-margin responses are more muted. Participation declines modestly in the PPML specification, while entry and exit effects are smaller and generally less precisely estimated. This suggests that most extensive-margin adjustment occurs earlier, during the investigation period, with enforcement mainly reinforcing

[8]The number of observations in the PPML specifications for entry and exit is smaller than in the linear probability models because estimation is restricted to firm–product–origin groups with within-group variation in the dependent variable. Under the stricter definitions of entry and exit, many relationships exhibit no change over time, leading such groups to be dropped from the PPML estimation. This reduction reflects the persistence of import relationships rather than sample attrition.

changes that have already taken place.

Overall, the extensive-margin results point to adjustment in targeted sourcing relationships, although persistent entry and exit events remain relatively infrequent. This pattern is consistent with adjustment occurring primarily through reductions in import volumes rather than widespread termination of sourcing relationships.

5.1.3 Intensive-Margin Import Reallocation and Third-Country Effects

Table 4: Diversion Effects on Import Quantities

	(1) ln(Quantity)	(2) ln(Quantity)	(3) ln(Quantity)	(4) ln(Quantity)	(5) ln(Quantity)	(6) ln(Quantity)
$ADP^{Invest,third}_{op,t-1}$	0.320**	0.321**			0.314**	0.032
	(0.147)	(0.148)			(0.147)	(0.116)
$ADP^{Invest}_{op,t-1}$		0.016			0.009	-0.360**
		(0.181)			(0.184)	(0.177)
$ADP^{third}_{op,t-1}$			-0.181*	-0.245**	-0.232**	-0.252***
			(0.097)	(0.103)	(0.100)	(0.079)
$ADP_{op,t-1}$				-0.416***	-0.418***	-0.471***
				(0.150)	(0.150)	(0.144)
$\ln(1+\text{tariff})_{op,t-1}$	-0.406	-0.406	-0.404	-0.403	-0.404	-0.419
	(0.260)	(0.260)	(0.260)	(0.260)	(0.260)	(0.267)
Size controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm–HS6–Origin FE	Yes	Yes	Yes	Yes	Yes	Yes
Origin–Year FE	Yes	Yes	Yes	Yes	Yes	Yes
HS2–Year FE	No	No	No	No	No	Yes
Observations	2,241,662	2,241,662	2,241,662	2,241,662	2,241,662	2,241,658
R^2	0.734	0.734	0.734	0.734	0.734	0.745

Notes: Robust standard errors clustered at the HS6–origin–year level in parentheses. ADP^{third} indicates the presence of an anti-dumping action against *another* origin exporting the same HS6 product in the same year. $ADP^{Invest,third}$ is defined analogously for the investigation phase. Column (6) additionally includes HS2–year fixed effects. * p<0.10, ** p<0.05, *** p<0.01.

Tables 4 and 5 examine whether anti-dumping measures imposed on one origin lead to a reallocation of imports toward alternative suppliers exporting the same HS6 product to Egypt.

In specifications controlling for firm–HS6–origin fixed effects and origin–year fixed effects, anti-dumping investigations against competing origins are associated with higher import quantities from non-targeted origins and lower unit values. This pattern is consistent with short-run diversion toward alternative suppliers when uncertainty arises around the investigated source. However, this interpretation is not robust to the inclusion of sector–year fixed effects. Once HS2–year fixed effects are added, the estimated investigation effect on non-targeted origins becomes small and statistically insignificant for both quantities and unit values. This suggests that the apparent investigation-stage diversion partly reflects sector-level shocks or sector-specific time variation rather than a smooth reallocation across suppliers.

The enforcement phase displays a different pattern. Anti-dumping measures against

competing origins are associated with lower quantities and higher unit values among non-targeted suppliers, and this pattern remains visible when sector–year fixed effects are included. Rather than pointing to sustained substitution toward alternative origins, the results suggest that enforcement is followed by broader adjustments in unit values and quantities across suppliers. Imports from non-targeted origins do not expand systematically; instead, they appear to contract, while unit values increase.

Several mechanisms may explain this pattern. Enforcement may reduce competitive pressure in the product market, allowing remaining exporters to raise prices. Capacity constraints may also limit the ability of third-country suppliers to absorb redirected demand once duties become binding. Alternatively, higher import unit values may reduce overall import demand, leading firms to contract imports even from non-targeted origins.

Overall, the evidence does not support a robust interpretation of smooth trade diversion toward non-targeted origins. While some specifications suggest short-run diversion during the investigation phase, this effect disappears once sector–year shocks are controlled for. The more robust pattern is that anti-dumping enforcement is associated with lower quantities and higher unit values among non-targeted suppliers, suggesting that adjustment occurs through contraction and compositional or price changes rather than sustained substitution across origins.

Table 5: Diversion Effects on Import Unit Values

	(1) ln(Unit Value)	(2) ln(Unit Value)	(3) ln(Unit Value)	(4) ln(Unit Value)	(5) ln(Unit Value)	(6) ln(Unit Value)
$ADP^{Invest,third}_{op,t-1}$	-0.283**	-0.283**			-0.278**	-0.036
	(0.134)	(0.135)			(0.135)	(0.105)
$ADP^{Invest}_{op,t-1}$		-0.018			-0.012	0.367**
		(0.159)			(0.162)	(0.157)
$ADP^{third}_{op,t-1}$			0.139	0.204**	0.193**	0.200***
			(0.089)	(0.095)	(0.093)	(0.072)
$ADP_{op,t-1}$				0.418***	0.420***	0.438***
				(0.144)	(0.143)	(0.136)
$\ln(1+\text{tariff})_{op,t-1}$	-0.226	-0.226	-0.228	-0.229	-0.228	-0.247
	(0.250)	(0.250)	(0.250)	(0.250)	(0.250)	(0.264)
Size controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm–HS6–Origin FE	Yes	Yes	Yes	Yes	Yes	Yes
Origin–Year FE	Yes	Yes	Yes	Yes	Yes	Yes
HS2–Year FE	No	No	No	No	No	Yes
Observations	2,241,662	2,241,662	2,241,662	2,241,662	2,241,662	2,241,658
R^2	0.693	0.693	0.693	0.693	0.693	0.706

Notes: All regressions include firm–HS6–origin and origin–year fixed effects, and size controls. ADP^{Invest} indicates the investigation phase of an anti-dumping procedure; ADP indicates the enforcement phase. ADP^{third} and $ADP^{Invest,third}$ capture, respectively, enforcement and investigation of anti-dumping measures against *other* origins exporting the same HS6 product to Egypt in the same year. Column (6) additionally includes HS2–year fixed effects. Robust standard errors clustered at the HS6–origin–year level in parentheses. * p<0.10, ** p<0.05, *** p<0.01.

5.2 Robustness Checks

5.2.1 Fixed HS2–Origin–Year

Table A2 introduces HS2–origin–year fixed effects to absorb shocks common to all HS6 products within the same sector, origin, and year. The intensive-margin results remain qualitatively similar: both investigation and enforcement are associated with lower import quantities and higher unit values. Extensive-margin estimates are more sensitive to the alternative fixed-effect structure, both in magnitude and statistical significance. Overall, this exercise provides reassurance that the baseline intensive-margin patterns are not driven solely by broader sector–origin shocks.

5.2.2 Dropping top importers

Table A3 excludes the largest importing firms and uses firm–HS6–origin and HS2–origin–year fixed effects. The results closely mirror the baseline. Import quantities decline and unit values increase during the investigation phase, with similar but slightly smaller effects

during enforcement. Extensive-margin responses follow the same pattern as before. The stability of the estimates indicates that the main findings are not driven by a small number of dominant importers but reflect adjustment across a broad set of firms.

5.2.3 Trade Policy: NTMS

Table A4 augments the specification with the average ad valorem equivalent (AVE) of non-tariff measures, based on the dataset of Niu et al. (2018), which follows the methodology of Looi Kee et al. (2009) and uses UNCTAD–MAST data. AVEs are available for 2006, 2009, 2013, and 2016, which implies gaps in the time dimension and limits the analysis to the intensive margin in this specification. As a result, precision is reduced and extensive-margin outcomes are not estimated. Given the restricted four-year sample, the investigation estimates become imprecise. The enforcement results, however, remain qualitatively consistent with the baseline: enforcement is associated with lower quantities and higher unit values. NTMs themselves are associated with lower quantities and higher unit values. Overall, this exercise provides suggestive reassurance that the enforcement results are not solely driven by broader regulatory changes affecting the same products.

6 Conclusion

This paper studies how Egyptian importing firms adjust their sourcing behavior following the initiation and enforcement of anti-dumping measures. The results show that firms respond primarily during the investigation phase: import quantities decline and unit values increase even before definitive duties are imposed. Enforcement also leads to adjustments in the same direction, although the magnitude of the quantity response is generally smaller than during the investigation phase. Along the extensive margin, investigations are associated with higher exit and lower entry at the firm–product–origin level, while enforcement generates little additional extensive-margin adjustment.

Beyond the direct effects on targeted imports, the paper examines whether anti-dumping procedures induce reallocation across origins. The evidence on third-country

effects is sensitive to the fixed-effect structure. While specifications without sector–year fixed effects suggest some short-run diversion during investigations, this effect becomes small and statistically insignificant once HS2–year fixed effects are included. After enforcement, imports from non-targeted origins decline while unit values increase, suggesting that firms do not smoothly substitute toward alternative suppliers. Overall, anti-dumping measures operate mainly through contraction and unit-value or compositional adjustments, rather than sustained reallocation across origins.

Policy Discussion. This section discusses institutional aspects of the trade-remedy framework where coordination and information sharing may be relevant. Competition policy and trade protection are administered through separate channels. Greater involvement of the Competition Authority in the review of trade-remedy cases could help ensure that potential effects on market structure and downstream users are fully considered when duties are evaluated. Public-interest assessment is another area where additional structure could be beneficial. Anti-dumping investigations are initiated on the basis of petitions from domestic industries, yet the legal framework does not currently require a systematic review of the implications for consumers or for firms that rely on imported inputs. Introducing a more formal approach to assessing these broader effects could support balanced decision-making, especially in sectors with complex value chains. More generally, greater transparency, inter-agency coordination, and attention to downstream effects could help broaden the information considered in trade-remedy decisions

Appendix

Table A1: Products Subject to Anti-Dumping Measures Enforced by Egypt (2005–2016)

HS Code	Product Descriptions
291732	Dioctyl orthophthalate
3307	Essential oils, perfumes, cosmetics, toiletries
360500	Matches
390760	Polyethylene terephthalate, in primary forms
392310	Plastic containers (boxes)
401110	New pneumatic tyres, of rubber, used for motor cars (including station wagons and racing cars)
401120	New pneumatic tyres, of rubber, used on buses or lorries
401161	New pneumatic tires, of rubber, with a "herring-bone" or like tread, used on agricultural or forestry vehicles and machines
401162	New pneumatic tires, of rubber, with a "herring-bone" or like tread, used on construction or industrial handling vehicles, rim size n/o 61 cm
401163	New pneumatic tires, of rubber, with a "herring-bone" or like tread, used on construction or industrial handling vehicles, rim size over 61 cm
401169	New pneumatic tires, of rubber, with a "herring-bone" or like tread, used on equipment or vehicles nesoi
401192	New pneumatic tires, of rubber, nesoi, used on agricultural or forestry vehicles and machines
401193	New pneumatic tires, of rubber, used on construction or industrial handling vehicles and machines, rim size not over 61 cm, nesoi
401194	New pneumatic tires, of rubber, for construction or industrial handling vehicles and machines, rim size over 61 cm, nesoi
401199	Pneumatic tyres, new, of rubber (excl. having a "herring-bone" or similar tread.)
630140	Blankets of synthetic fibers (excluding electric blankets) and traveling rugs
691110	Porcelain and ceramic tableware
691200	Ceramic tableware, kitchenware, other household and toilet articles, other than of porcelain or china
831110	Coated electrodes of base metal, for electric arc-welding
8501	Electrical machinery and equipment
850152	AC motors, multi-phase, of an output exceeding 750 W but not exceeding 75 kW
850610	Manganese dioxide cells and batteries (excl. spent)
853931	Discharge lamps, fluorescent, hot cathode
870870	Road wheels and parts and accessories
960711	Slide fasteners fitted with chain scoops of base metal
960719	Slide fasteners (excl. fitted with chain scoops of base metal)
960810	Ball-point pens
960910	Pencils and crayons, with leads encased in a rigid sheath

Source: Author's compilation from GOEIC customs data (2005–2016) and WTO I-TIP Goods notifications.

Note: Product codes are reported at the level available in the anti-dumping notification. Where measures are notified at a broader HS level, affected tariff lines are mapped to HS6 for the empirical analysis.

Table A2: Alternative Fixed Effects – Robustness

	(1) ln(Quantity)	(2) ln(Unit Value)	(3) Participation	(4) Entry	(5) Exit
$ADP^{Invest}_{op,t-1}$	-0.343*	0.329*	0.122**	-0.089	0.170**
	(0.189)	(0.170)	(0.048)	(0.113)	(0.074)
$ADP_{op,t-1}$	-0.342**	0.349**	0.019	-0.138**	0.131*
	(0.145)	(0.136)	(0.035)	(0.067)	(0.066)
$\ln(1+\text{tariff})_{op,t-1}$	-0.157	-0.492	-0.758***	-0.646***	-0.013
	(0.330)	(0.333)	(0.049)	(0.118)	(0.104)
Size Trend	No	Yes	No	No	No
Firm–HS6–Origin FE	Yes	Yes	Yes	Yes	Yes
HS2–Origin–Year FE	Yes	Yes	Yes	Yes	Yes
Estimator	OLS	OLS	PPML	PPML	PPML
Observations	2,233,408	2,233,408	27,142,527	4,306,829	4,046,080
R^2/Pseudo R^2	0.753	0.716	0.115	0.231	0.128

Notes: Outcomes and variables are defined in section 4.1. Investigation effect refers to the period in which an anti-dumping case is under investigation prior to definitive enforcement; provisional measures may occur during this phase. Enforcement effect refers to the period in which an anti-dumping duty is imposed by Egypt. Columns (1) and (2) are estimated by OLS; columns (3)–(5) are estimated by PPML with firm–HS6–origin and HS2–origin–year fixed effects. Robust standard errors clustered at the HS6–origin–year level in parentheses. * p<0.10, ** p<0.05, *** p<0.01.

Table A3: Robustness: Dropping Top Importers with Alternative Fixed Effects

	(1) ln(Quantity)	(2) ln(Unit Value)	(3) Participation	(4) Entry	(5) Exit
$ADP^{Invest}_{op,t-1}$	-0.392***	0.350***	0.008	-0.003**	0.010**
	(0.151)	(0.130)	(0.005)	(0.001)	(0.004)
$ADP_{op,t-1}$	-0.202*	0.209**	-0.004	-0.002	0.003
	(0.112)	(0.099)	(0.004)	(0.001)	(0.003)
$\ln(1+\text{tariff})_{op,t-1}$	-1.006***	0.116	-0.145***	-0.049***	-0.042***
	(0.205)	(0.165)	(0.010)	(0.004)	(0.007)
Size Trend	No	Yes	No	No	No
Firm–HS6–Origin FE	Yes	Yes	Yes	Yes	Yes
HS2–Origin–Year FE	Yes	Yes	Yes	Yes	Yes
Observations	2,192,503	2,192,503	28,789,816	28,789,816	28,789,816
R-squared	0.775	0.747	0.185	0.147	0.071

Robust standard errors clustered at the HS6–origin–year level in parentheses. Columns (3)–(5) are estimated using linear probability models. * p<0.10, ** p<0.05, *** p<0.01.

Table A4: Robustness: Controlling for Other Non-Tariff Measures (NTMs)

	(1) ln(Quantity)	(2) ln(Quantity)	(3) ln(Quantity)	(4) ln(Unit Value)	(5) ln(Unit Value)	(6) ln(Unit Value)
$ADP^{Invest}_{op,t-1}$	-0.124		-0.082	0.176		0.133
	(0.387)		(0.342)	(0.330)		(0.290)
$ADP_{op,t-1}$		-0.954***	-0.951***		0.973***	0.969***
		(0.338)	(0.334)		(0.277)	(0.274)
$\ln(1+\text{tariff})_{op,t-1}$	-1.380***	-1.366***	-1.364***	0.625*	0.611*	0.609*
	(0.376)	(0.376)	(0.376)	(0.357)	(0.356)	(0.356)
$NTM_{p,t}$	-0.056***	-0.055***	-0.055***	0.056***	0.055***	0.055***
	(0.015)	(0.015)	(0.015)	(0.014)	(0.014)	(0.014)
Size Trend	Yes	Yes	Yes	Yes	Yes	Yes
Firm–HS6–Origin FE	Yes	Yes	Yes	Yes	Yes	Yes
Origin–Year FE	Yes	Yes	Yes	Yes	Yes	Yes
HS2–Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	423,642	423,642	423,642	423,642	423,642	423,642
R-squared	0.765	0.765	0.765	0.728	0.728	0.728

Notes: NTMs measured at the HS6–year level and available only in 2006, 2009, 2013, and 2016 following Niu et al. (2018). Robust standard errors clustered at the HS6–origin–year level in parentheses. * p<0.10, ** p<0.05, *** p<0.01.

References

Abdel-Azim, E. A. E.-B. and Khalil, I. A. (2022). The impact of dumping on the egyptian economy and efforts to confront it domestically and internationally: An analytical study. *Scientific Journal for Financial and Commercial Studies and Research, Faculty of Commerce, Damietta University*, 3(2):161–204. In Arabic.

Bao, X., Blonigen, B. A., and Yu, Z. (2021). Cross-product and cross-market adjustments within multiproduct firms: Evidence from antidumping actions. Technical report, National Bureau of Economic Research.

Blonigen, B. and Prusa, T. (2016). Dumping and Antidumping Duties. In *Handbook of Commercial Policy*, volume 1, pages 107–159. Elsevier.

Bown, C. P. (2005). Global antidumping database version 1.0.

Bown, C. P. (2011). The great recession and import protection: The role of temporary trade barriers.

Bown, C. P. and Crowley, M. A. (2007). Trade deflection and trade depression. *Journal of International Economics*, 72(1):176–201.

Bown, C. P. and Crowley, M. A. (2014). Emerging economies, trade policy, and macroeconomic shocks. *Journal of Development Economics*, 111:261–273.

Chandra, P. and Long, C. (2013). Anti-dumping duties and their impact on exporters: Firm level evidence from china. *World development*, 51:169–186.

Ciani, A. and Stiebale, J. (2024). Export Performance Under Domestic Anti-Dumping Protection. *World Development*, 183:106716.

Correia, S. (2023). Reghdfe: Stata module to perform linear or instrumental-variable regression absorbing any number of high-dimensional fixed effects.

Correia, S., Guimaraes, P., and Zylkin, T. (2023). Ppmlhdfe: Stata module for poisson pseudo-likelihood regression with multiple levels of fixed effects. *Boston College Department of Economics*.

Cuyvers, L. and Dumont, M. (2005). Eu anti-dumping measures against asean countries: Impact on trade flows. *Asian Economic Journal*, 19(3):249–271.

Eckel, C., Flach, L., and Meng, N. (2023). Demand and supply side linkages in exporting multiproduct firms. Technical report, Discussion Paper.

Eibl, F. and Malik, A. (2016). The politics of partial liberalization: cronyism and non-tariff protection in mubarak's egypt. Working paper, University of Oxford, Oxford, UK.

Felbermayr, G. and Sandkamp, A. (2020). The trade effects of anti-dumping duties: Firm-level evidence from china. *European Economic Review*, 122:103367.

Fernandes, A. M., Ferro, E., and Wilson, J. S. (2019). Product standards and firms' export decisions. *The World Bank Economic Review*, 33(2):353–374.

Fontagné, L., Orefice, G., Piermartini, R., and Rocha, N. (2015). Product standards and margins of trade: Firm-level evidence. *Journal of international economics*, 97(1):29–44.

Hazem, N. and Zaki, C. (2020). Mind the Measure: On the Effects of Antidumping Investigations in Egypt: *Journal of African Trade*, 7(1-2):1.

Head, K. and Mayer, T. (2014). Gravity equations: Workhorse, toolkit, and cookbook. In *Handbook of international economics*, volume 4, pages 131–195. Elsevier.

Iodice, I. and Reverdy, C. (2025). Protection or protectionism: The effect of technical regulations on input sourcing. Technical report, CESifo Working Paper.

Jabbour, L., Tao, Z., Vanino, E., and Zhang, Y. (2019). The good, the bad and the ugly: Chinese imports, european union anti-dumping measures and firm performance. *Journal of International Economics*, 117:1–20.

Kamal, Y. and Zaki, C. (2018). How Do Technical Barriers to Trade Affect Exports? Evidence from Egyptian Firm-Level Data. *Journal of Economic Integration*, 33(4):659–721.

Konings, J. and Vandenbussche, H. (2013). Antidumping protection hurts exporters: firm-level evidence. *Review of World Economics*, 149(2):295–320.

Konings, J., Vandenbussche, H., and Springael, L. (2001). Import diversion under european antidumping policy. *Journal of Industry, Competition and Trade*, 1(3):283–299.

Lee, W., Mulabdic, A., and Ruta, M. (2023). Third-country effects of regional trade agreements: A firm-level analysis. *Journal of International Economics*, 140:103688.

Looi Kee, H., Nicita, A., and Olarreaga, M. (2009). Estimating trade restrictiveness indices. *The Economic Journal*, 119(534):172–199.

Lu, Y., Tao, Z., and Zhang, Y. (2013). How do exporters respond to antidumping investigations? *Journal of International Economics*, 91(2):290–300.

Niu, Z., Liu, C., Gunessee, S., and Milner, C. (2018). Non-tariff and overall protection: evidence across countries and over time. *Review of World Economics*, 154(4):675–703.

OAMDI (2017). Imports Data, 2005–2016, Exports and Imports Data (EID). http://erf.org.eg/data-portal/. Egypt EID-IMP 2005–2016. Licensed Data Files.

Prusa, T. J. (2001). On the spread and impact of anti-dumping. *Canadian Journal of Economics/Revue canadienne d'économique*, 34(3):591–611.

Prusa, T. J., Teh, R., and Zhu, M. (2022). Ptas and the incidence of antidumping disputes. *Journal of International Economics*, 138:103630.

Sandkamp, A. (2020). The trade effects of antidumping duties: Evidence from the 2004 eu enlargement. *Journal of International Economics*, 123:103307.

Signoret, J., Bown, C., Cieszkowsky, M., and Erbahar, A. (2020). Temporary trade barriers database including the global antidumping database.

Silva, J. S. and Tenreyro, S. (2006). The log of gravity. *The Review of Economics and statistics*, pages 641–658.

WTO (2025). Trade Monitoring Update. Technical report, World Trade Organization. Accessed: 2025-11-27.