



EU Trade Defence

The unintended effects of anti-dumping measures

2021



Foreword

Trade defence instruments against dumping and alleged unfair trade practices have been part of the trade policy debate for at least a hundred years. Hence, it seems reasonable to assume that by today we would have a detailed understanding of the economic effects of such measures. That, however, is not the case.

The main purpose of this study is to analyse the impacts on traded quantities and import prices of the anti-dumping measures undertaken by the EU during the period 2008-2015.

When studying the effects of trade defence instruments, a striking feature is the variety of effects that occurs. The variety in outcomes suggests that looking both at the average effect and at specific cases can be a fruitful way in which to gain insights into the effects of trade defence instruments.

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A handwritten signature in black ink, appearing to read 'Anders Ahnlid', written in a cursive style.

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Summary

Perceived unfair trade practices towards EU producers by companies outside the EU can be tackled by anti-dumping or anti-subsidy measures to correct the possible injury. While these measures can reduce imports from the targeted suppliers, they can also increase the consumer price of the targeted goods.

In this study, we analyse the economic effects of the EU's trade defence instruments. The focus is on anti-dumping measures imposed by the EU during the period 2008-2015, and the impact of these on the prices and traded volumes of the targeted products.

The analysis is conducted using the synthetic control method (SCM). A novel feature of this method is that it naturally allows us to follow the dynamics over time as well as to study specific cases; such tasks can be cumbersome using traditional regression-based methods.

The results from the analysis suggest that imposing anti-dumping measures reduces imports from targeted countries and increases imports from non-targeted third countries but has little impact on intra-EU trade. For consumers, the imposed duties increase the price of the targeted goods. There is also a great deal of heterogeneity in the results across the analysed cases. Because of the heterogenous outcomes, making predictions of the impact of a specific intervention is associated with a high degree of uncertainty. However, despite this heterogeneity, several lessons can be drawn, including lessons from the heterogenous outcomes.

The overall results from the analysis suggest that two years after a measure is imposed, the imported quantity from the targeted countries is reduced by 28 percent and the import prices are 4 percent higher than they otherwise would have been. Considering that the average additional duty (anti-dumping and countervailing duty) for the analysed products is 30 percent and that the border price increases slightly, by 4 percent, a decrease in imports of 28 percent is in line with previous research.

The intention of the measures is to level the playing field between EU producers and third country producers competing in the EU market. However, if the intention is to make EU producers regain market shares, the policy has not been successful. Over the course of the two years after an anti-dumping measure is imposed, our results show that the average effect on traded quantities within the EU is a one per cent decrease. In addition, intra-EU trade develops negatively over time. This negative trend suggests that the prospects for future gains, beyond the period of two years after the measure is imposed, are faint.

The lack of positive effects on shielded EU producers is problematic since this is the intended policy outcome. Hence, if one guideline for trade policy is that it should do less harm than good, the extent to which the trade defence measures analysed in this study fulfil this criterion is unclear. That is, EU consumers are hurt by the increased prices while intra-EU trade is almost unchanged.

Moving on to non-targeted third countries, we find the interesting result that, while intra-EU trade is, on average, almost unaffected, the imported quantity from non-targeted third country suppliers increases by an average of 13 per cent over two years. Attempts to explain this type of result, of little impact on shielded producers and a greater response from non-targeted third country producers, are based on the argument that protection is often sought by less competitive firms and declining industries. Hence, the capacity to compensate for reduced imports from targeted companies might be greater among non-targeted third country suppliers than EU firms.

This study also shows that climate-related goods do not avoid being subject to trade defence instruments. Like other goods, when these products face anti-dumping duties, their prices tend to rise and their traded volumes to decrease. Given that these goods are potentially beneficial for the climate and the environment, increased trade costs may complicate and/or delay the diffusion of climate-mitigating technologies. One way forward would be a broader approach that considers not only the producers' interests but also climate objectives when imposing trade defence instruments. Policy makers should avoid anti-dumping and anti-subsidy measures if the harm to the public interest can be expected to exceed the benefit to the allegedly harmed industry. We therefore call for a renewed discussion of this issue and suggest that the EU's impact assessment of anti-dumping and anti-subsidy measures should include an analysis of the overall welfare effects.

Lastly, to reduce the risk of harmful anti-dumping and anti-subsidy measures being imposed in circumstances where the risk of predatory pricing and a dominant position is limited, a realignment of the EU anti-dumping legislation towards the EU competition legislation regarding market share and price undercutting is advocated.

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1. Introduction

The use of anti-dumping measures as a trade policy tool dates back to (at least) 1904, when Canada adopted a law that allowed for the introduction of special duties on under-valued goods. Since then, many lessons have been drawn about dumping and subsidies. For example, from a consumer perspective, research has shown that foreign subsidies and dumping mainly benefit the importing country because of lower prices. When the importing country attempts to counter these practices with anti-dumping duties and countervailing duties (CVDs), the price tends to increase in the importing country, raising costs for user industries and consumers.

It has also been found that anti-dumping duties can have side effects, such as triggering retaliation from targeted countries, increasing the risk of circumvention (for example, by shipping the goods via a non-targeted country) and increasing the risk of collusion among third country producers. It can also add a layer of uncertainty regarding the opportunities and prospects for future trade and exports.

Despite all these consequences, anti-dumping measures are a common element in international trade policy. According to the WTO, a total of 4071 anti-dumping measures¹ and 344 countervailing measures² were reported by WTO members during the period 1995-2020. The WTO Anti-dumping Agreement regulates how governments can or cannot react to dumping. Rules regarding subsidies are regulated in the WTO Agreement on Subsidies and Countervailing Measures (ASCM).

A relevant question is whether price dumping can be rational. From an economic perspective, price segmentation and dumping-type behaviour can be in line with the market solution. Who has not seen their local restaurant offering a special discount for students or seniors, or low season prices? However, in cross-border trade, these types of price segmentation are instead seen as an actionable trade practice under existing legislation, leading countries to protect their interests. To counter such perceived harmful behaviour, countries have the right, provided that a number of criteria are fulfilled, to impose anti-dumping and countervailing duties.

According to the European Commission, trade defence instruments such as anti-dumping and countervailing measures are a necessary tool for upholding open and free markets and restoring a level playing field. The question is then whether this line of action is successful.



1.1 Purpose and scope

In December 2020, the Swedish government commissioned the National Board of Trade to analyse the effects and costs of trade defence instruments (TDIs) imposed by the EU.

In this study we will analyse a series of anti-dumping and anti-subsidy measures imposed by the EU during the period 2008-2015.³ The empirical analysis will study the impact on:

- Unit prices and imported quantities from the targeted countries
- Unit prices and imported quantities in intra-EU trade
- Unit prices and imported quantities from non-targeted third countries

The set of anti-dumping and anti-subsidy cases analysed covers a variety of industries and products. It would therefore not be surprising to find that the impact of these measures varies. Thus, we seek not only to analyse the average effects but also to look at a series of specific cases. Looking at both the average outcome and some specific cases originating from different countries and industries contributes to a comprehensive understanding of the effects of imposed duties.

Additionally, we aim to broaden the notion of how trade remedies affect climate-related goods.⁴ Previous research has shown that the number of measures targeting such goods has steadily grown. Thus, out of the six specific cases we analyse and present, two cover climate-related goods.

The main vehicle for the analysis is the synthetic control method (SCM). The SCM allows us to follow the transitional dynamics of the impact of an anti-dumping measure. It is also flexible enough to allow us to analyse both specific cases and average effects over many cases.

The study is structured as follows. Chapter 2 reviews the relevant literature. Chapter 3 presents our data, and chapter 4 presents the descriptive characteristics of our data. Chapter 5 introduces the synthetic control method, and chapter 6 presents the econometric analysis. In chapter 7, conclusions are drawn.

Box 1. Abbreviations

Abbreviations	
AD	Anti-dumping
APEC	Asia-Pacific Economic Cooperation
ASCM	Agreement on Subsidies and Countervailing Measures
BEC	Broad Economic Categories
CN	Combined Nomenclature
CIF	Cost Insurance Freight
CVD	Countervailing duties
DiD	Difference in difference
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
HS	Harmonized Commodity Description and Coding System or Harmonized System
MFN	Most-Favoured Nation
OECD	Organisation for Economic Co-operation and Development
RMSE	Root Mean Square Error
SCM	Synthetic Control Method
TARIC	The Integrated Tariff of the European Union
TDI	Trade Defence Instrument
UNEP	United Nations Environment Programme
WCO	World Customs Organization
WTO	World Trade Organization

Box 2. EU Trade Defence Instruments – TDIs⁵

Anti-dumping measures

Provisional and/or definitive anti-dumping duties can be imposed, after an investigation by the Commission, on goods from a non-EU country sold in the EU at a price below the sales price in their domestic market or below the cost of production. There must also be a material injury to the EU industry producing the like product, and the dumped imports must be a cause of the injury. Anti-dumping measures must not be against the Union interest.

Provisional measures can last up to 9 months and definitive measures can last for 5 years but can be prolonged after a review.

Anti-subsidy measures

Provisional and definitive countervailing duties can be imposed by the Commission after an investigation if a non-EU government or a public body provides financial contributions to companies to produce or export goods imported to the Union at prices substantially lower than the normal commercial value, and the EU industry therefore suffers material injury. Provisional measures can last up to 4 months and definitive measures can last for 5 years but can be prolonged after a review.

The EU rules are based on the following WTO agreements: the Anti-dumping Agreement i.e., the Agreement on Implementation of Article VI of GATT 1994, and the Agreement on Subsidies and Countervailing Measures.

Source: European Commission

2. Literature review

In this chapter we briefly discuss the mechanisms and drivers behind the imposition of anti-dumping measures, the economic aspects, and the effects of these measures.

2.1 Drivers and rationale behind anti-dumping

The Agreement on Implementation of Article VI of GATT 1994 governs the application of anti-dumping measures by WTO members. Anti-dumping measures cannot be imposed unless there are dumped imports, material injury to the domestic industry and a causal link between the dumped imports and the injury. Article 2 contains substantive rules for the determination of dumping. Examples of methods to determine the normal value are: a calculation based on the price in the exporter's domestic market, or a calculation based on a price charged by the exporter in a foreign country. Article 3 contains rules regarding the determination of material injury caused by dumped imports.⁶

The EU legislation meets the WTO rules but has also included another criterion, the EU interest (public interest).⁷

According to the EU anti-dumping legislation a complaint shall be rejected when there is not sufficient evidence of either dumping or injury to justify proceeding with the case. Proceedings shall not be initiated against third countries whose imports represent a market share of below 1%, unless such countries collectively account for 3% or more of Union consumption.⁸ Market shares are not even considered in expiry reviews. However, the EU competition legislation for the internal market differs, having higher requirements, since there must be an abuse⁹ by a company with a dominant position (namely a market share of 40%).¹⁰ We conclude that the EU competition legislation has higher requirements regarding market shares and price undercutting.

Turning to academic analysis of these policy instruments. Blonigen and Prusa (2016) argues that the current legal foundations for anti-dumping measures are only weakly linked to any economically meaningful understanding of dumping. The authors discuss the WTO legislation and note that, to determine that there is injury, it may be enough to show a negative correlation, rather than causality, between the market shares of foreign firms and the performance of the domestic industry. The result is that the national agencies responsible for anti-dumping policy have a high degree of discretion regarding anti-dumping decisions. This is well known by domestic firms, who realise that they have a good chance of reducing the competition from imports by filing anti-dumping complaints and lobbying agencies to accept their arguments.

Along these lines, empirical evidence suggests that the likelihood that anti-dumping agencies will rule in favour of domestic firms is high. For example, in the US, anti-dumping investigations almost always find that dumping has occurred, even when the foreign firms involved are making reasonable profits on every export sale to the US (Miyagiwa et al. 2016). Consequently, Prusa (2005) noted that: "the link between dumping and anti-dumping duties is tenuous". Blonigen and Prusa (2001) explicitly argued that: "Anti-dumping has nothing to do with moral right or wrong, it is simply another tool to improve the competitive position of the complainant against other companies".

The notion that anti-dumping measures have weak theoretical support, documented negative effects on welfare, and a close relationship to lobbying and political economy led Nelson (2006) to assert that: "The antidumping mechanism [...] is really about neither fairness nor predation. It is, instead, about protection". In a similar vein, Finger (1993)

noted that “dumping is anything you could get the government to act against under the antidumping law”.

From the above observations it is easy to see why the filing of anti-dumping complaints can be driven by macroeconomic factors. Who does not want protection when times are hard? There are numerous studies that have established a link between anti-dumping filings and economic factors such as weak economic development, unemployment, low-capacity utilisation, high import penetration, exchange rate problems, and a negative trade balance (Aggarwal 2004; Becker and Theuringer 2001; Bown 2008; Coughlin et al. 1989; Feigenbaum and Willet 1985; Feinberg 2005; Knetter and Prusa 2003; Leidy 1997).¹¹

Economic theory suggests that it can be rational, at least in the short run, for firms to sell at below average cost, as long as they cover their variable costs. It can also be rational to charge different prices in different markets. One example is the case of segmented markets with different price sensitivities. Hence, price competition and segmented price setting are normal features in a market economy (Krugman et al. 2018). However, allegations of price-dumping are one of the most common types of disputes in international trade. One question to ask, therefore, is how and why firms can be charged for dumping.

2.2 Economic effects of anti-dumping measures

The effects of anti-dumping measures have been studied from several different perspectives and with different empirical approaches, such as forward-looking computable general equilibrium models (CGE models), and ex post evaluating regression-based methods.

CGE studies on anti-dumping can be seen as theory-based estimates of the effects one can expect from an intervention. This type of model suggests that domestic producers benefit and that output from shielded firms increases. As a result of the increased import prices, consumers and downstream users of the targeted products lose out, and welfare is likely to decrease (DeVault 1996; Gallaway et al. 1999; Kelly and Morkre 1998; Murray and Rousslang 1989). These models can also work as benchmarks for ex post evaluations. Based on the results from CGE models, Blonigen and Prusa (2016) suggested that: “anti-dumping imposes as large (or larger) welfare costs than any other current commercial policy”.

Anti-dumping measures and trade

By treating the 2004 enlargement of the EU as a natural experiment, Sandkamp (2020) used data spanning the period 1999–2009 to estimate the effects of anti-dumping duties on import prices and quantities. The results suggest that import prices on average increased by 25 per cent while imported quantities fell by 74 per cent. An interesting feature noted was that the price response of non-market economies was much lower than that of market economies.

Khatibi (2009), in a study on EU anti-dumping measures covering the period 1997–2002, found that imported quantities from targeted countries fell by 58 per cent as a result of the imposed measures, whereas imports from non-targeted third countries increased by eight per cent and intra-EU trade increased by 12 per cent. These results are broadly in line with those of Prusa (1997, 2001), who found that US anti-dumping duties reduced US imports from targeted countries by up to 50 per cent.

The National Board of Trade (2012) analysed 39 anti-dumping cases initiated between 2000–2008 and showed that anti-dumping protection can be costly. On average, the anti-dumping duties resulted in a ten per cent price increase in intra-EU trade, five per cent higher prices from non-targeted third countries and as much as 28 per cent higher from targeted countries (plus 30 per cent duty). Additionally, the National Board of Trade

(2013b) studied the abolition of anti-dumping measures resulting from the EU enlargement in 2004, showing that it did not cause injury to the EU15's industry in terms of price undercutting or loss of market shares.

The idea that shielded producers regain market share is questioned by findings for the EU by Brenton (2001). Brenton found that anti-dumping duties mainly benefit non-targeted third countries rather than shielded EU producers. That is, imports from the targeted country were reduced and replaced by imports from other non-targeted third countries rather than intra-EU producers. Hence, EU companies did not benefit from increased sales or increased market shares.

Externalities caused by anti-dumping measures

Anti-dumping duties can give rise to a series of external effects. A short list of these effects is presented below.

According to Vandenbussche and Zanardi (2010) and Prusa (2020), anti-dumping duties have an impact on trade in a wider set of goods than just the targeted products. Specifically, it has been shown that although anti-dumping duties typically only cover a few per cent of product lines, their impact may be felt on 25 per cent of total trade.

It has also been shown that the mere threat of anti-dumping duties can have almost as severe effects on trade as the duty itself (Bown and Crowley 2007; Brenton 2001; Durling and Prusa 2007; Krupp 1994; Krupp and Pollard 1996).¹² That is, the threat of being targeted by an anti-dumping investigation can alter the behaviour of the exporter as much as the intervention itself. Specifically, exporters tend to increase their export price in order to reduce the risk of being the target of allegations of price dumping.

It has also been shown that trade tends to fall for settled cases. That is, after a case has been settled, export prices are held at a level high enough to avoid the risk of future allegations (Besedes and Prusa, 2016).

If the export price is high, the risk of being targeted in an anti-dumping investigation is small. It has therefore been suggested that the use and existence of an anti-dumping measure can trigger exporters to agree about market sharing arrangements (collusion). This will typically result in lower export volumes and higher prices, both of which reduce the risk of being targeted by anti-dumping duties (Messerlin 1990; Prusa 1992; Staiger and Wolak 1992; Veugelers and Vandenbussche 1999; Zanardi 2004).

Trade policy measures are often characterised by reciprocity. That is, an intervention from one party is often met by a similar reaction from the other party, and anti-dumping measures are no exception. Countries that have been subject to anti-dumping measures often tend to introduce their own anti-dumping laws later on, in order to retaliate (Aggarwal 2004; Blonigen and Bown 2003; Bown 2004, 2005; Prusa and Skeath 2005; Vandenbussche and Zanardi 2008).

Today, the relationship between trade and sustainability is a core issue in trade policy. One topic in this area is the way in which trade in climate-related products can be beneficial for the climate and the environment as well as the economy. An early paper on this topic is that by the National Board of Trade (2013a), which noted that such goods were often subject to trade defence measures leading to increased prices and possible implications for the shift towards renewable energy. Similarly, Cimino and Hufbauer (2014) found that trade remedies applied during the period 2008-2012 targeting climate-related goods caused a reduction in trade of 40 per cent. Kampel (2017) also showed that products in these sectors are subject to anti-dumping or anti-subsidy measures, arguably not only because of unfair trade practices but also for competitive reasons, which could be perceived as protectionism. In the clean energy sector alone, 45 cases were notified to the WTO between 2006 and 2015.

3. Data and limitations

The European Commission’s database on trade defence investigations contains information related to trade defence investigations for imports to the EU.¹³ From this database we extract provisional and/or definitive anti-dumping or anti-subsidy measures imposed during the years 2008-2015.¹⁴ Cases which were initiated before 2008, as well as cases in which only a provisional duty was imposed, review cases and anti-circumvention cases, are not included in our data.

Our data are limited to measures imposed on “all other companies”; measures imposed on imports from specific companies are not included.¹⁵ Cases after 2015 are not included since we need a sufficiently long post-treatment period.

Box 3: The Harmonized System and the EU classification system

The Harmonized Commodity Description and Coding System (“Harmonized System” or “HS”) is an international product nomenclature developed by the World Customs Organization, the WCO. The HS consists of 5000 commodity groups, each identified by a six-digit code, supported by well-defined rules to achieve uniform classification. The system is used by more than 200 countries. The HS is updated every 5–6 years.

The EU classification system is based on the HS and consists of the Combined Nomenclature (CN), with an 8 digit-level, which is used for statistics, and the Integrated Tariff (TARIC), with a 10-digit level, which is used for all trade policy measures and tariff measures.

Source: WCO & European Commission

The EU imposes TDIs on products defined by one or several tariff lines, TARIC codes (10-digit level). As trade data at this level of detail are not available, we utilise import data at the CN (8-digit) level from Eurostat, which is the most disaggregated open-source data set available. To limit the size of the dataset, trade data are collapsed from monthly to quarterly data. Eurostat trade data include information on values and quantities by product and country, which enables us to extract unit prices.

The choice of 2004 as the starting point for the analysis allows us to include countries from the EU enlargement of that year. In the analysis we keep the EU fixed as the EU25 countries. For this reason, Romania and Bulgaria, and Croatia, which joined the EU, respectively, in 2007 and 2013, are excluded from the analysis.

The SCM is sensitive to missing data. We impute missing observations as the adjacent average values when we have observations one period before and one period after a missing observation.¹⁶ A variable with information on nominal exchange rates with the Euro, extracted from Eurostat, is added to the dataset. Unit prices are calculated as the imported value (CIF) divided by the imported quantity in kilograms each quarter.



4. Descriptive statistics

The EU imposed 54 new provisional and definitive anti-dumping or anti-subsidy measures during the period 2008-2015. This is the gross list of cases that we have at our disposal for the analysis. The majority of the cases were anti-dumping cases (44 cases, corresponding to 81 per cent), while the others were anti-subsidy cases (10 cases, i.e. 19 per cent). Only two of the anti-subsidy measures were not connected to an anti-dumping measure during this period.

In 83 per cent of the cases the measure applied was an ad valorem duty (that is, a percentage of the value of the imported product), and in 17 per cent of the cases it was a specific duty (that is, a fixed amount for each unit of weight imported). The average rate of the definitive ad valorem duty was 34 per cent, with a range from 4 to 85 per cent. By comparison, the simple average of the MFN tariff applied by the EU to all goods in 2020 was 5.1 per cent.¹⁷

Most of the cases covered by our data comprise industrial products (including fish), while a few cases cover agricultural products such as mandarins and bioethanol. The 54 cases cover, in total, 215 different tariff lines, categorised by the Combined Nomenclature.¹⁸ Intermediate goods account for approximately 80 per cent of these tariff lines, consumption goods for 12 per cent, and capital goods for 8 per cent, according to the classification by Broad Economic Categories (BEC). Regarding climate-related products, measures were imposed on bioethanol, biodiesel, glass fibre products, grain-oriented flat-rolled products of electrical steel, solar glass, and solar panels.

In total, 20 countries were targeted by the EU's anti-dumping and anti-subsidy measures during the period under investigation. Some cases target only one country, while others target up to five countries. China was the most targeted country, with 38 cases, followed by India, Russia and the United States. Twelve countries were only targeted once.

During 2008-2015 the EU imported goods from third countries with an average value of EUR 1,500 billion per year. In comparison, when the values of all the cases two years before the respective measure was imposed are summed, the cases target in total an imported value of EUR 20 billion.¹⁹ In other words, these measures cover roughly 1.3 per cent of EU imports of goods from third countries.

One condition for the imposition of an anti-dumping or anti-subsidy measure is that the EU producers of like products have suffered material injury. An injury is usually interpreted as a significant increase in allegedly dumped imports (either in absolute quantity or in terms of market share). Therefore, one can expect to see a higher growth rate in imports from targeted countries compared to intra-EU trade prior to the imposition of measures. This expectation is to some extent confirmed in our data, as targeted imports have a higher growth rate than intra-EU trade in 77 per cent of our cases.

Another condition (in fact, the first condition) that must be met before anti-dumping duties can be imposed is that the price of the imported goods must be “dumped”, or that the export price to the EU must be less than its normal value. There are different methods of calculating the normal value, and these vary between the cases. It can be expected that the import prices from targeted countries is lower prior to the imposition of measures compared to imported like goods from other third countries as well as goods traded intra-EU. This is a general pattern observed in our data. The prices for imports from the targeted countries are in 75 per cent of the cases lower than the prices for goods traded intra-EU and non-targeted third country imports two years prior to the respective impositions.

Although the descriptive statistics show some similarities between the cases, there is also great variation. This is hardly surprising as the cases cover products with different market characteristics (e.g. steel products, citrus fruits and ceramic tiles) and different types of target countries. Hence, to complement our analysis on average effects, this study includes an analysis of single cases in order to examine heterogenous effects.



5. Method

The use of the synthetic control group approach (SCM) has, over the last decade, become an increasingly popular tool for the evaluation of policy measures (Abadie 2020). The academic literature on the SCM in applied international trade is, however, relatively brief. Examples of studies using an SCM approach to analyse trade-related issues include those of Ritzel and Kohler (2017), who explored the impact of preferential market access for least-developed countries, Barlow et al. (2017), who studied the impact of lower tariffs on food and beverage syrups on the imports and consumption of those goods, Aytuğ et al. (2017), who used SCM to analyse the impact of the EU–Turkey Customs Union, Lehtimäki and Sondermann (2020), who analysed the impact of the single market on EU GDP, and Springford (2021), who applied the SCM method to analyse the trade effects in the first quarter after Brexit.

5.1 The synthetic control method

The synthetic control method is a statistical method for evaluating a treatment, and it mainly originates from the work of Abadie and Gardeazabal (2003).²⁰ The method aims to identify the effect of an intervention by constructing a (synthetic) untreated scenario. That is, it gives an estimate of what the outcome for the treated unit would have been without the intervention (the counterfactual outcome).

For most methods for which a counterfactual outcome is to be constructed, two preconditions must be fulfilled:

- (i) there must be a control group that is similar to the treatment group; and
- (ii) there must be a sufficiently large number of observations within the treatment group and the control group.

Now, imagine that we are interested in studying a treatment that does not involve many units, such as the impact of a specific anti-dumping case or, for example, the economic effects of the unification of Germany. Under these situations many regression-based solutions work poorly. The SCM solves the problem by creating a synthetic “twin” from a donor pool. Compared to regression-based models, SCM requires a smaller set of untreated units, that is a smaller donor pool, to create the counterfactual outcome (Abadie et al. 2010).

To create the donor pool, we use trade flows not affected by the intervention (the anti-dumping measure). From this donor pool of trade flows, the SCM combines trade flows so that they mimic the trade flows of the target country before the intervention. A close pre-treatment fit between the synthetic trade flow and the real trade flow reflects a well-designed control group. Since the control group is not affected by the anti-dumping measure, the synthetic trade flow represents the trade from the targeted country if the intervention had not taken place.²¹

The advantages of the SCM method include the following:

- It can handle instances with only one treated case and a few control cases.
- It has the capacity to make the synthetic control case resemble the treated case.
- It mitigates data mining since the choice of a synthetic control does not rely on the post-intervention outcomes.
- It avoids the identification problem and bias suffered by staggered difference-in-difference (DiD) regression models.
- It is especially useful for studying short-term effects.

The drawbacks of SCM, compared to regression-based analysis, include the lack of tests for statistical significance. Moreover, although the treatment of many units can be handled, this complicates the SCM analysis. Furthermore, it is not ideal for making long-term forecasts. It has also been claimed that SCM does not live up to the strict statistical assumptions associated with matching methods for causal inference. Considering that our main alternative is a staggered DiD regression, and that we are interested in specific cases and are focused on short- to medium-term forecasts, the SCM approach becomes an attractive method for our analysis.

5.2 Trade flows in the analysis

Products targeted by anti-dumping or countervailing duties are specified at the TARIC (10-digit) level, and for each case there can be one or more products that are targeted. For cases targeting several products we aggregate the products into a basket, and it is this basket of goods that is subjected to evaluation. While using a basket simplifies the analysis, it also introduces some complications since there are numerous ways to aggregate goods and prices. In this analysis, the aggregation is accomplished by using the Fisher index.²²

5.3 The donor pool and data restrictions

To identify the causal effect of an intervention, we need to create a synthetic control group for the counterfactual outcome.

In this analysis we create the donor pool as follows. As a first step, we identify a set of products similar to those in the intervention group. The treated products are identified for each case at the CN 8-digit level. For the donor pool, we use non-treated goods drawn from the same HS code group as the treated goods. Hence, to identify similar and non-treated goods, we extract all non-treated goods from the HS4-digit level and label the goods in this basket as “similar goods”. Hence, the “similar goods” will originate from the same HS4 code as the goods subject to the anti-dumping and/or anti-subsidy measure. Imports of “similar goods” from all available countries make up the donor pool. It is from this donor pool that the SCM combines trade flows to construct the synthetic twin.

One restriction applied is that for a trade flow to qualify for the donor pool it must record positive trade flows for at least four consecutive years prior to the treatment and two years after the treatment. Also, due to reviews of the HS nomenclature in the World Customs Organization as well as changes in the EU CN nomenclature, we may lose track of one or more products for certain anti-dumping and anti-subsidy cases.²³ This makes it difficult to follow entire trade flows over the aforementioned time period of six years. In addition, trade flows with very small values (below one million Euros) are disregarded. Hence, a trade-off between completeness and precision is encountered. The combination of these data and model restrictions narrows our gross list of 54 cases down to a net list of 15 cases for our average analysis.

It is also important to note that an anti-dumping case may cover imports from more than one country. Here, cases are analysed separately for each targeted country. Thus, other targeted countries are excluded from the set of potential donor countries. The dataset also contains variables such as GDP, exchange rate, population collected from the World Bank and Eurostat database. In the empirical analysis, however, only trade flows from the donor pool and the exchange rate variable entered as explanatory variables to reduce the prediction error.

6. Analysis

In this section we analyse the impact of the imposition of anti-dumping/countervailing duties on the import price and the imported quantity. The price is the “cost, insurance and freight price” (CIF), which equals the amount that would be invoiced in the event of a sale or purchase at the national border of the reporting country. The CIF price therefore does not include the duty. The analysis looks at the impact of the imposed measures on trade with targeted countries, intra-EU trade, and trade with non-targeted countries.

Table I: Cases included in aggregate analysis

Case	Product	Provisional Duty	Definitive Duty	Country
AD522	Citric acid	49.3%	42.7%	CHN
AD524	Citrus fruits (mandarins)	482.2€/ton	531.2€/ton	CHN
AD525	Steel fasteners	.	85%	CHN
AD541	Aluminium road wheels	20.6%	22.3%	CHN
AD547	Polyester yarn	9.3%	9.8%	CHN
AS556	Stainless steel bars	4.3%	4.3%	IND
AD558	Glass fibre products	62.9%	62.9%	CHN
AD585	Malleable tube fittings	67.8%	57.8%	CHN
AD586	Tableware and kitchenware	58.8%	36.1%	CHN
AD591	Stainless steel wires	27.8%	12.5%	IND
AS592	Stainless steel wires	4.3%	3.7%	IND
AD607	Stainless steel cold-rolled flat products	25.2%	25.2%	CHN
AD608	Grain-oriented flat-rolled products of electrical steel	21.6%	21.6%	RUS
AD608	Grain-oriented flat-rolled products of electrical steel	22.0%	22.0%	USA
AD611	Acesulfame Potassium	3.19€/kg	4.58€/kg	CHN
AD616	Ductile pipes	31.2%	14.1%	IND

Source: European Commission

Note: Average provisional duty 31 per cent, average definitive duty 30 per cent.²⁴

Table 1 provides information on the cases covered by the analysis. As previously stated, 15 cases out of the total of 54 cases passed the data requirements for the SCM analysis.²⁵ Among these cases the average provisional duty is 31 per cent and the average definitive duty 30 per cent (no provisional duty was imposed for the anti-dumping case AD525). Thirteen of the cases have duty levels that range between 4 and 85 per cent. In addition, two of them have specific duties. Like the gross list of 54 cases, approximately 80 per cent of the tariff lines are intermediate goods.

6.1 Average effects

6.1.1 Imports from targeted countries

The results from the average analysis of the trade from the targeted countries are presented in Figure 1 below. The average result is the mean value after running an SCM analysis for each of the 15 cases that passes our data restrictions. Hence, for each of these 15 cases a counterfactual outcome is estimated.

The result depicted in Figure 1 (and the forthcoming line graphs) should be interpreted as the difference between the real and the counterfactual outcome, benchmarked vis-à-vis one period before the duty was imposed. Hence, a post-duty reduction of imports of, say, 30 per cent, should be interpreted to mean that the tariff led to a 30 per cent reduction of imports vis-à-vis one period before the duty was imposed.²⁶ The initiation of the treatment is based on the date of the provisional duty.²⁷

Before examining the results, we note that the pre-treatment series in Figure 1 are close to the zero line. That is, before the treatment, the real trade flows and the counterfactual/synthetic trade flows are almost identical, suggesting that we have been successful in constructing a comparison group that is able to mimic the real trade flows. A good pre-treatment fit makes the post-treatment analysis more trustworthy. The results of the average analysis on imports from targeted countries can be summarised as follows:

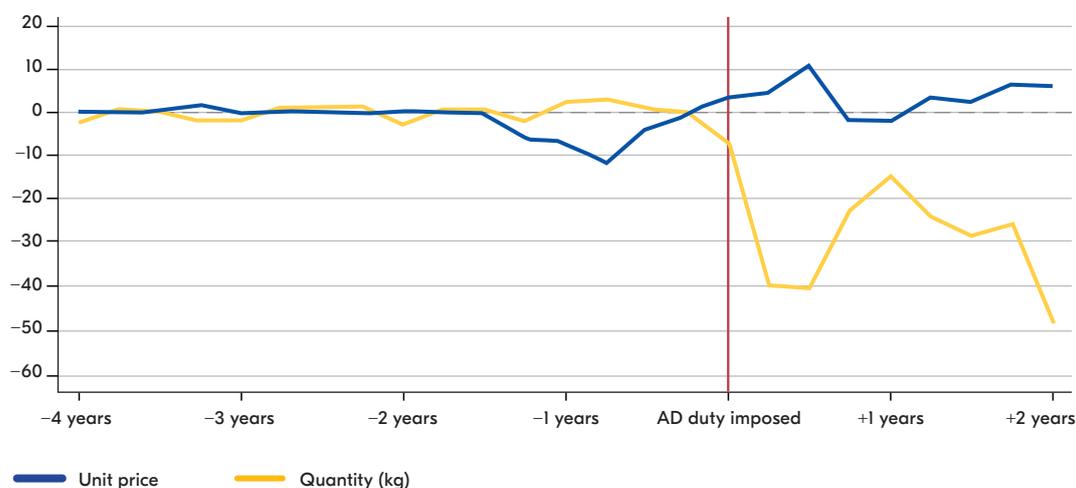
Quantity. As seen in Figure 1, the impact of anti-dumping duties on imported quantities varies over time. During the two first quarters after the introduction of the provisional duties the imported quantity falls on average by approximately 40 per cent (compared to imports one period before the provisional duty is imposed). Thereafter, imported quantities make a short recovery to minus 20 per cent towards the end of the first year. During the second year, we have a continuous fall in imports, ending at minus 50 per cent two years after the duty is imposed. On average, over two years, imports fall by approximately 28 per cent compared to what they would have been with no anti-dumping and/or anti-subsidy measures imposed.

Price. In contrast to imported quantity, the import price is only marginally affected by the duties. There is an initial price increase during the first year, and the average price effect over two years is a four per cent increase in the import price. The overall impression is that there is little impact on the import price. One way to interpret the limited price effect is that two opposing factors are in play. To begin with, there is a political pressure on the exporting firms to increase their price so that the duty is removed. At the same time, the market mechanism puts a downward pressure on the exporter when a duty is imposed. Hence, the net effect on prices is to some extent an empirical question. This result is in line with the study by Sandkamp (2020), who found import prices from non-market economies to be unaffected by anti-dumping duties while import prices from targeted market economies increased. Hence, considering that most cases analysed here are targeting China, a mild average effect on prices is to be expected.

A back of the envelope calculation suggests that the two-year average effect on consumer prices consists of the four per cent increase in the import price and the 30 per cent duty, making a total of a 35 per cent²⁸ increase in consumer prices on imports from the targeted countries. As a result of the increased consumer price, demand falls, reducing the quantity imported to the EU from the targeted countries by an estimated average of 28 per cent.²⁹

Figure 1. Average impact on imports from targeted countries on price and quantity

Percentage change vis-à-vis one quarter prior to imposition



Source: Eurostat, EU Commission and own calculations.

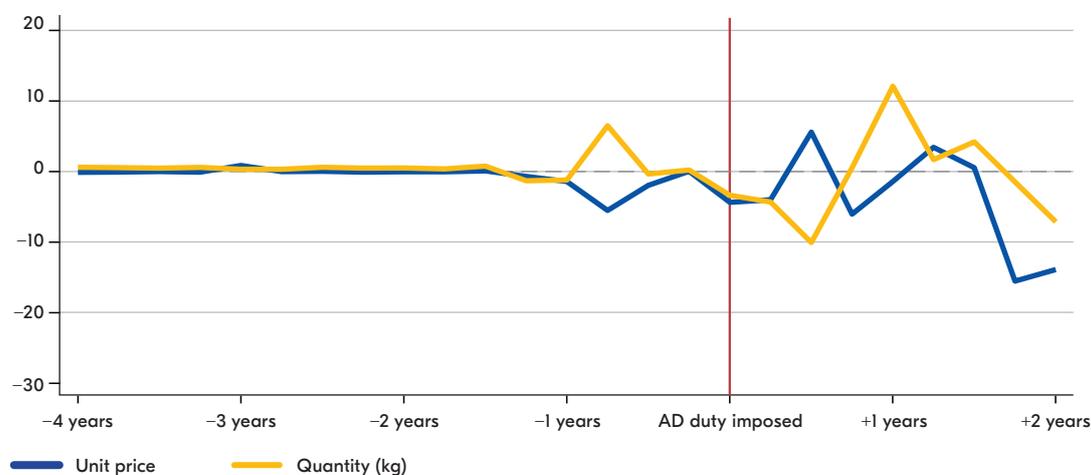
Note: SCM estimations based on cases listed in Table 1.

6.1.2 Intra-EU trade

The results for intra-EU trade in the targeted goods are depicted in Figure 2. Imposed measures are supposed to shield domestic producers from dumped imports, and hence the expectation is that intra-EU traded quantities will increase as a result of the applied remedies. For prices, on the other hand, the expected impact is, as stated above, less clear. One piece of the price puzzle involves the reaction from non-targeted third country suppliers.

Figure 2. Average impact on Intra-EU25 trade on price and quantity in targeted products

Percentage change vis-à-vis one quarter prior to imposition



Source: Eurostat, EU Commission and own calculations.

Note: SCM estimations based on cases listed in Table 1.

When analysing the impact on intra-EU trade, depicted in Figure 2, we note that the pre-treatment series are close to the zero line until three quarters before the duties are imposed. This kind of pre-treatment effect has been observed in other studies and has been attributed to the announcement effect (Bown and Crowley 2006; Brenton 2001; Durling and Prusa 2007; Krupp 1994; Krupp and Pollard 1996). The impact on intra-EU trade can be summarised as follows.

Quantity. From the results depicted in Figure 2 it is difficult to see a clear positive or negative impact on traded quantities within the EU of the introduction of anti-dumping and/or anti-subsidy measures. Initially the effect is negative, turning to positive after one year, and it thereafter drops to a negative effect after two years. The two-year average impact on intra-EU trade is a marginal one per cent decrease. This implies that there is, on average, almost no impact on trade from shielded intra-EU suppliers. Moreover, the effect at the end of the evaluation period is minus eight per cent and negatively trending. Hence, the scope for a positive long-term average effect on intra-EU trade seems small.

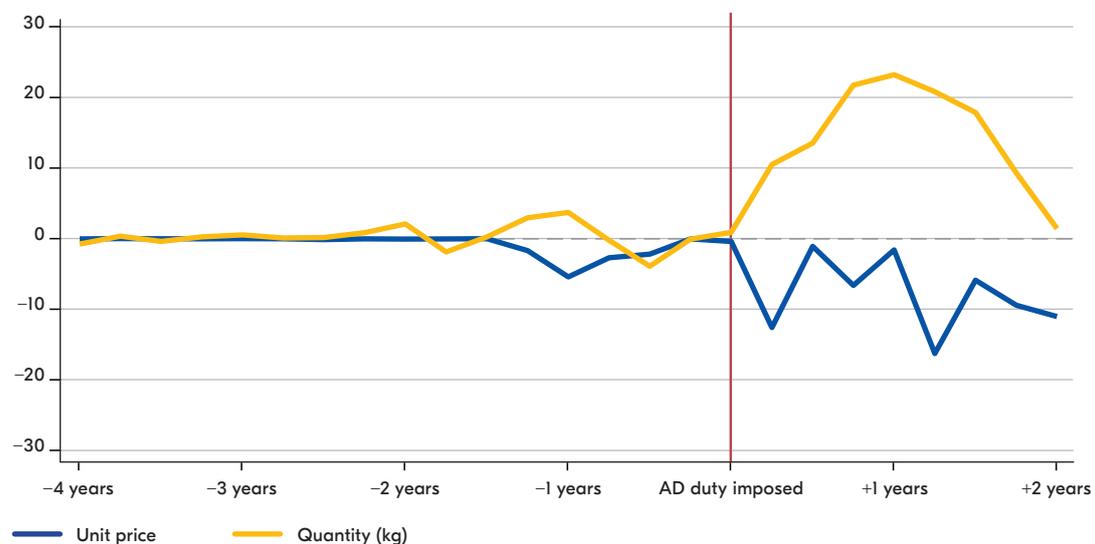
Price. The overall impression is that the measures have little impact on the intra-EU prices of targeted goods. The average two-year price effect is a four per cent price decrease.

6.1.3 Imports from non-targeted third countries

Figure 3 below depicts the results for how the EU's imports from non-targeted third countries are affected by the imposed measures. As pointed out above, the depicted effect is the difference between the observed trade flows and the predicted trade flows that would have occurred if there had been no intervention. Values close to the zero line after the time of the intervention, suggests that the intervention had little or none impact on the outcome variable.

Figure 3. Average impact on imports from non-targeted third countries on price and quantity

Percentage change vis-à-vis one quarter prior to imposition



Source: Eurostat, EU Commission and own calculations.

Quantity. The results in Figure 3 suggest that the imposed measures lead to increased imports from third countries. On a two-year average, the estimated imports are 13 per cent higher than they would have been if the measures had not been imposed. As seen in Figure 3, it takes about one quarter for imports to increase and there seems to be a reduced effect towards the end of the two-year evaluation period.

Prices. While the impact on imported quantity is rather straightforward, the impact on prices is less clear. As seen in Figure 3, the impact on the price fluctuates between positive and negative values. On average the price falls by seven per cent. Considering the volatility of the price effect it is difficult to give a definitive statement. Hence, the impact on import prices from third countries is difficult to pinpoint.

Taken together, the results suggest that third country exporters, rather than domestic suppliers, benefit from the imposed measures. These results are in line with those of Khatibi (2009), who found that EU anti-dumping measures led to a reduction of 58 per cent in imports from the targeted countries, a decrease of 12 per cent in intra-EU trade, and an increase of 8 per cent in the exports from non-targeted third countries to the EU.

Table 2: Summary of average effects of anti-dumping and anti-subsidy measures

Effect on	Target country	Intra-EU	Non-targeted third countries
Quantity	-28 %	-1 %	13 %
Price	4 %	-4 %	-7 %
Average duty	30 %	.	.
Consumer price	35 %	-4 %	-7 %

Note: Based on observed duties and SCM results presented above.

6.2 Specific cases

The average analysis above is based on the 15 cases that passed the data requirements. Below we present the results from six specific cases. Our intention is to show the results for different types of products, and cases targeting different numbers of countries. Presenting specific cases also exemplifies the heterogeneity of the results.

6.2.1 AD616 Anti-dumping duties on ductile pipes from India

In December 2014, the EU Commission initiated an anti-dumping investigation against India concerning ductile pipes. This led to the imposition of a provisional anti-dumping duty of 31.2 per cent in September 2015 and a definitive anti-dumping duty in March 2016 of 14.1 per cent. According to our results, imports from India fell. After two years, the volume of lost exports from India was larger than the volume of India's exports to the EU one year prior to the anti-dumping duty, implying that exports from India were shut off.

In parallel to the fall in imports from India, the import prices fell by 12-17 per cent. The fall in import prices is somewhat in contrast with the findings of Sandkamp (2020), who suggested that anti-dumping measures have a price increasing effect on imports from market economies, but a close to zero impact against non-market economies.

Figure 4. AD616 Anti-dumping duties on ductile pipes against India

Figure 4.1 Ductile pipes (AD616) from India

Percentage change vis-à-vis one quarter prior to imposition

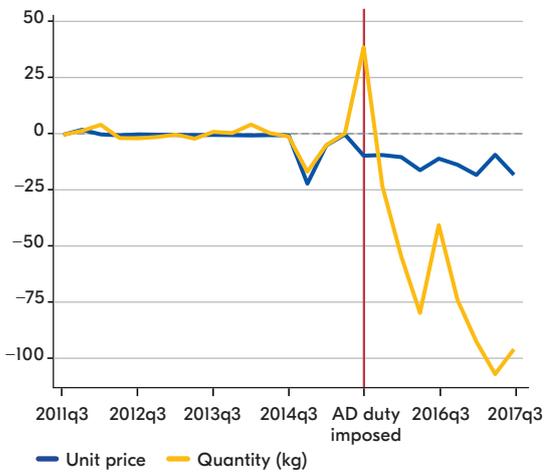


Figure 4.2 Ductile pipes (AD616) Intra-EU25

Percentage change vis-à-vis one quarter prior to imposition

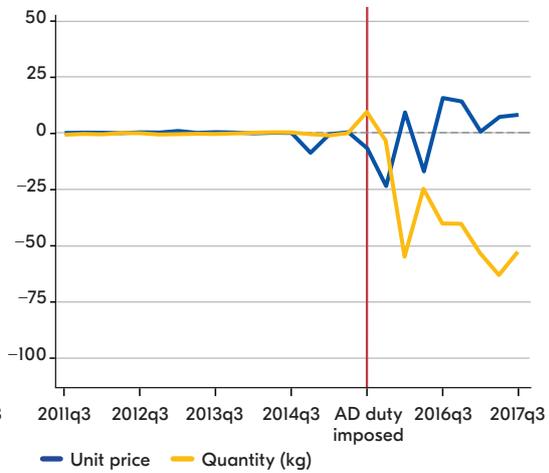


Figure 4.3 Ductile pipes (AD616) from non-targeted countries

Percentage change vis-à-vis one quarter prior to imposition

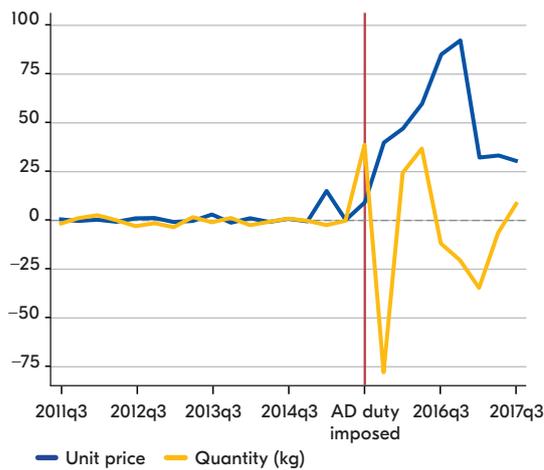
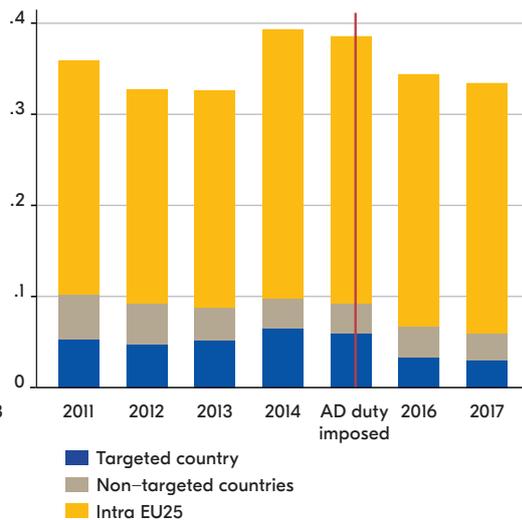


Figure 4.4 Ductile pipes (AD616)

Imports and intra-EU25 trade (billion EUR)



Source: Eurostat, EU Commission and own calculations.

The impact on intra-EU trade is seen in the upper right panel of Figure 4. The results suggest that the observed levels of intra-EU trade in ductile pipes turned out to be lower than predicted. After two years the volume of intra-EU trade was approximately 50 per cent lower than it had been one period before the duty was imposed. Similar results were found by Brenton (2001), who noted that EU companies did not benefit from anti-dumping protection in the form of increased sales or market shares. The impact on the intra-EU price was smaller than the impact on the quantities.

Unlike imports from the target country (India) and intra-EU trade, import quantities from non-targeted third countries were in this case largely unaffected. The impact on imported quantities fluctuated between being positive and being negative, suggesting, over two years, a modest impact on imports. There was, however, a significant increase in import prices from non-targeted third countries.

6.2.2 AD607 Anti-dumping duties on stainless steel cold-rolled products from China and Taiwan

One industry standing out in the anti-dumping landscape is the steel industry. Various types of steel products account for a relatively large share of anti-dumping cases, and the steel industry also represents large values in trade.

The anti-dumping case against China and Taiwan on stainless steel cold-rolled flat products was initiated in June 2014, and provisional measures were imposed in March 2015. The provisional duties were 25.2 per cent for China and 12 per cent for Taiwan. In August of the same year definitive anti-dumping duties of 25.3 per cent on products from China and 6.8 per cent on products from Taiwan were imposed. This case covered 30 products at the TARIC (10-digit) level. Because of the data requirements imposed on the SCM-analysis, Taiwan could not be maintained in the analysis.

Figure 5. AD607 Anti-dumping duties on stainless steel cold-rolled products from China

Figure 5.1 Stainless steel cold-rolled flat products (AD607) from China

Percentage change vis-à-vis one quarter prior to imposition

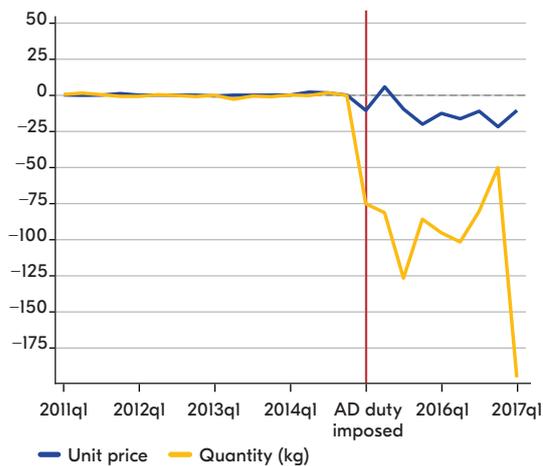


Figure 5.2 Stainless steel cold-rolled flat products (AD607) Intra-EU25

Percentage change vis-à-vis one quarter prior to imposition

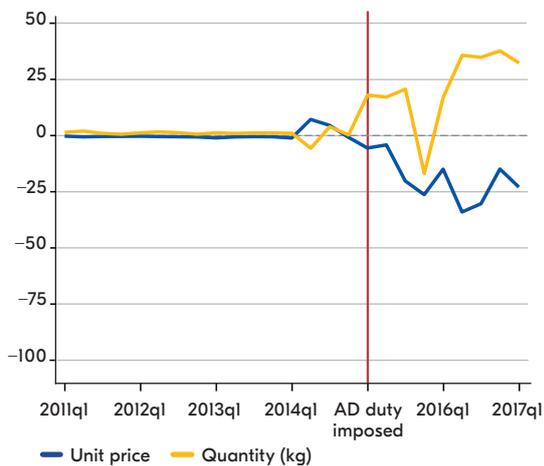


Figure 5.3 Stainless steel cold-rolled flat products from non-targeted countries

Percentage change vis-à-vis one quarter prior to imposition

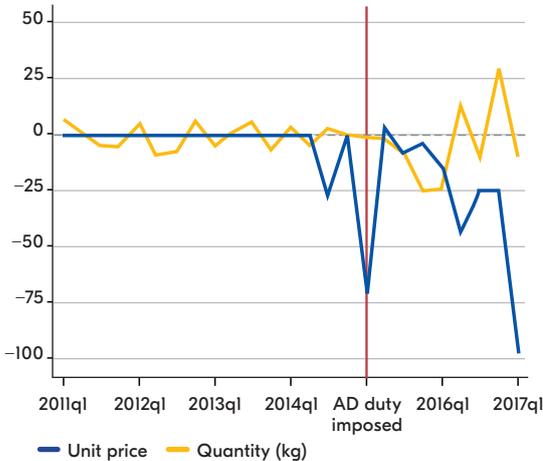
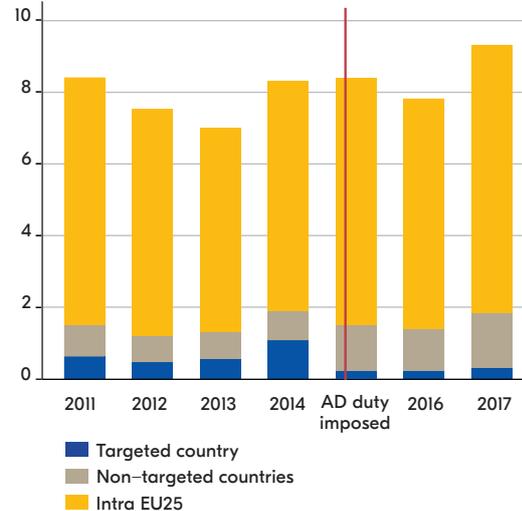


Figure 5.4 Stainless steel cold-rolled flat products (AD607) Imports and intra-EU25 trade (billion EUR)

Imports and intra-EU25 trade (billion EUR)



Source: Eurostat, EU Commission and own calculations.



In the wake of the imposition of the measures, imports of targeted products from China fell sharply. After two years, the estimated percentage of exports foregone is 190 per cent vis-à-vis one period before the duty was imposed. Such a big drop in sales can only occur if exports would have continued to increase if the duty had not been imposed.

The right-hand lower panel of Figure 5 supports the above line of reasoning. Prior to the imposition of the anti-dumping duty, the imports of the targeted goods from China were on a strong rise. After the anti-dumping duty was imposed, imports from China fell almost to zero. The imposed duty did not, however, seem to lead to increased import prices from China, and instead the opposite seems to have occurred. Hence, with a reduced import price, part of the anti-dumping duty was taken by the exporter, which in turn reduced the price-increasing effect on EU consumers.

The top right panel in Figure 5 displays the effect on intra-EU trade of the imposed anti-dumping measures. The effect on intra-EU trade took off after one year, and after two years intra-EU trade was 35-40 per cent higher than it would have been without the anti-dumping duty. The scenario without the anti-dumping duty is therefore that intra-EU suppliers would have been replaced by booming Chinese exporters. For non-targeted third country suppliers (bottom left panel), the anti-dumping duty seems to have had a limited impact on their sales to the EU.

6.2.3 AD591 & AS592 Anti-dumping and anti-subsidy measures on stainless steel wires from India

As pointed out above, anti-dumping cases are more common than anti-subsidy cases. However, for some cases the same product is targeted with both anti-dumping and anti-subsidy measures. The case of stainless steel wires from India is an example of a case with both types of measure.³⁰

The EU initiated two separate investigations in 2012, which led to an imposition of a provisional countervailing duty of 4.3 per cent and a provisional anti-dumping duty of 27.8 per cent, both in May 2013. The definitive countervailing duty was set at 3.7 per cent in September and the definitive anti-dumping duty was set at 12.5 per cent in November of the same year.

Figure 6. AD591 and AS592 Anti-dumping and anti-subsidy measures on stainless steel wires from India

Figure 6.1 Stainless steel wires (AD591 & AS592) from India
Percentage change vis-à-vis one quarter prior to imposition

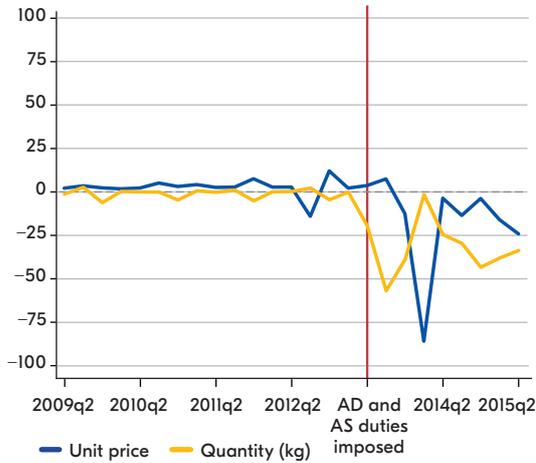


Figure 6.2 Stainless steel wires (AD591 & AS592) Intra-EU25
Percentage change vis-à-vis one quarter prior to imposition

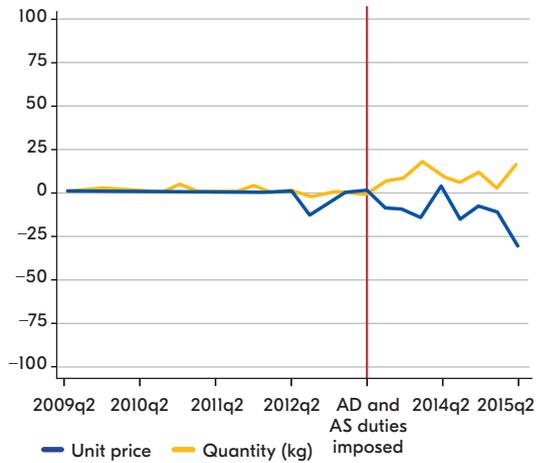


Figure 6.3 Stainless steel wires from non-targeted countries
Percentage change vis-à-vis one quarter prior to imposition

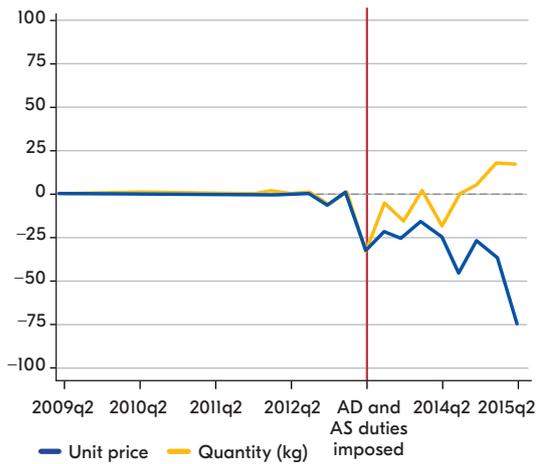
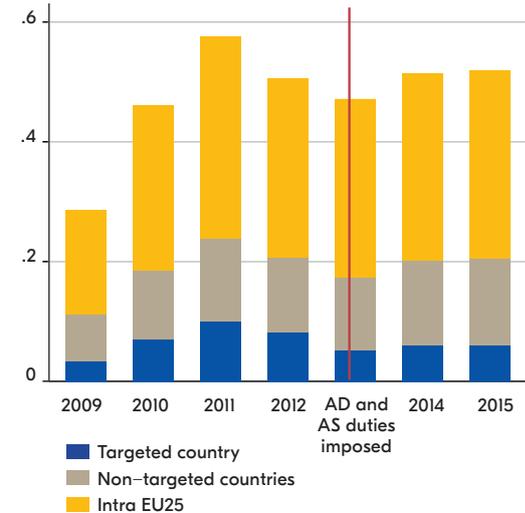


Figure 6.4 Stainless steel wires (AD591+AS592)
Imports and intra-EU25 trade (billion EUR)



Source: Eurostat, EU Commission and own calculations.

The impact of the imposed measures is depicted in Figure 6. The top left panel suggests that, while the imported quantity was initially reduced by roughly 50 per cent after one quarter, that sudden drop was fully recovered after one year. After two years, imports from India were roughly 30 per cent lower than they would have been without a duty. Thus, the results point towards reduced imports. The change of market share is depicted in the bottom right panel in Figure 6. The first thing to note is that imports from India were declining two years prior to the measures. After the measures had been imposed, the level and shares of imports from India, intra-EU trade and third country suppliers remained relatively stable.

Regarding price effects, we once again have an example where the import price did not rise. For most of the period, the estimated price effect is close to zero, with a negative spike after one year. If anything, the price is, on average, reduced.

As imports from India fell, the top right panel of Figure 6 depicts what happened to intra-EU trade. The overall impression is that the impact on intra-EU trade regarding both traded quantities and prices was mild. Over the observed quarters – spanning two years after the duties were imposed – intra-EU trade increased by roughly 5-10 per cent. We note that, in line with the import prices from India, the intra-EU prices continued to evolve at lower levels than expected. Hence, in this case there are no signs of a price-increasing effect for intra-EU trade. One reason why we are not seeing an increased import price may be that there was a limited market share for Indian suppliers and competition between intra-EU and non-targeted third country suppliers kept a downward pressure on the price.

For the non-targeted third country suppliers, we see an immediate drop in both price and quantity of about 25 per cent. Over time, however, sales from non-targeted suppliers recovered, and after two years imports were about 20 per cent higher than they would have been without the anti-dumping duty.

6.2.4 AD608 Anti-dumping duties on grain-oriented flat-rolled products of electrical steel (GOES) from China, Japan, South Korea, Russia and the US

In August 2014 the EU initiated an anti-dumping investigation against China, Japan, South Korea,³¹ Russia and the US. As a result of data requirements only Russia and the US are covered by the empirical analysis. This case is of particular interest because it highlights the fact that the same measure can have different effects on different trading partners.

GOES is an important material used in the production of energy efficient transformers and large high-performance generators. The product could be regarded as a climate-related product since it contributes to minimising transmission loss by giving a lower core loss than conventional steel products.

This case includes nine products for which provisional anti-dumping duties were imposed in May 2015; the duties were 21.6 per cent on the products from Russia and 22 per cent on the products from the United States. The definitive duties were imposed in October of the same year and remained at the same level as the provisional measures.



Figure 7. AD608 Anti-dumping duties on grain-oriented flat-rolled products against Russia and the US

Figure 7.1 Grain-oriented flat-rolled products of electrical steel (AD608) from Russia
Percentage change vis-à-vis one quarter prior to imposition

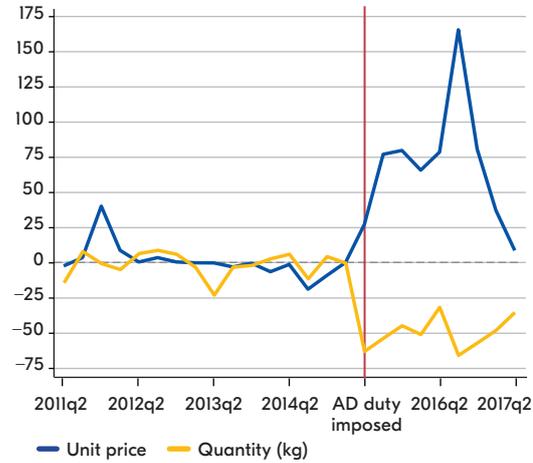


Figure 7.2 Grain-oriented flat-rolled products of electrical steel (AD608) from the US
Percentage change vis-à-vis one quarter prior to imposition

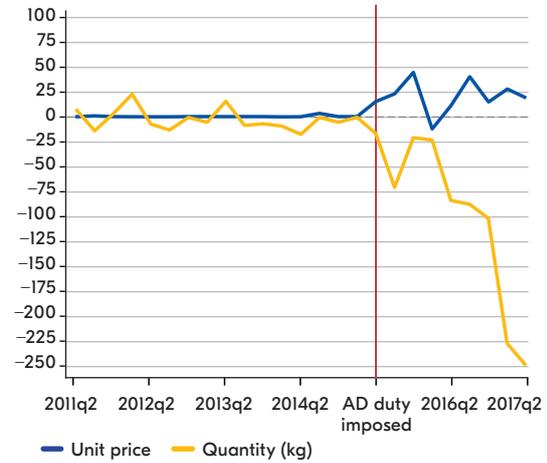


Figure 7.3 Grain-oriented flat-rolled products of electrical steel (AD608) Intra-EU25
Percentage change vis-à-vis one quarter prior to imposition

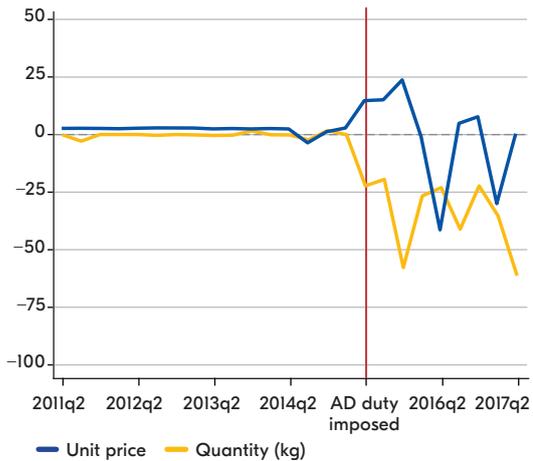
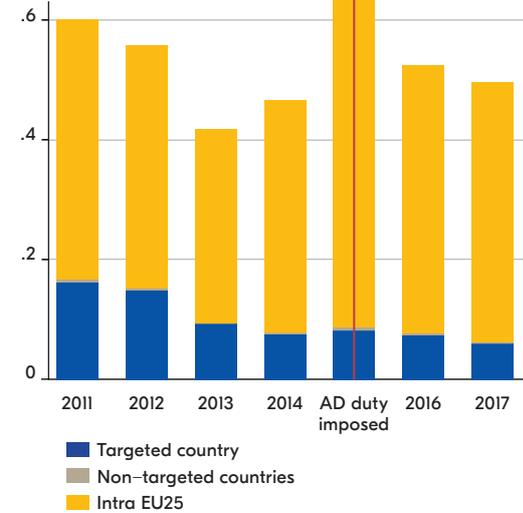


Figure 7.4 Grain-oriented flat-rolled products of electrical steel (AD608)
Imports and intra-EU25 trade (billion EUR)



Source: Eurostat, EU Commission and own calculations.



The imposed anti-dumping duties led to reduced imports from Russia and the US. The magnitude of the lost imports from Russia was around 50 per cent (over time bouncing between drops of 25 and 75 per cent) during the two post-treatment years. For the US the relative fall was larger. Over time, the magnitude of foregone US exports fell by, at its lowest, about 250 per cent after two years. As noted above, because of our benchmarking against pre-duty import levels, a fall of more than 100 per cent is possible if we expect (with no measure imposed) rapidly increasing levels of imports of the targeted goods.

The bottom right bar-chart graph displays the combined imports from the US and Russia, intra-EU trade, and imports from non-targeted third countries (although these are almost invisible due to their low volumes). As seen in the graph, imports from the targeted countries fell after the anti-dumping duty was imposed. In addition, there was a (slight) upward trend in imports from the US and Russia between the years 2014 and 2015, a trend that ceased when the anti-dumping duty came into play.

Given the dampening effect of the anti-dumping duty on US and Russian exports, it is interesting to note that intra-EU trade in the targeted goods did not increase. Instead, intra-EU trade evolved at a lower level than expected. The bar chart graph verifies the declining intra-EU trade. Hence, shielded EU producers do not seem to have gained an advantage in terms of increased intra-EU trade.

In parallel with the negative impact on trade, import prices for the targeted products from Russia and the US increased. One reason behind the increased import price in this specific case may be the introduction by the European Commission of minimum import prices for certain companies, which led to no duty being collected when the net free-at-Union-frontier price was equal to or higher than the corresponding minimum import price.

6.2.5 AD558 Anti-dumping duties on glass fibre products from China

This kind of glass fibre is mostly used in the construction sector for thermal insulation, wall repairs, and floor reinforcement. It reduces energy consumption and could therefore be considered as a climate-related product. The case against China was initiated in May 2010. In February 2011 a provisional anti-dumping duty of 62.9 per cent was imposed, and the definitive anti-dumping duty was set in August at the same level.

Figure 8. AD558 Anti-dumping duties on glass fibre products from China

Figure 8.1 Glass fibre products (AD558) from China
Percentage change vis-à-vis one quarter prior to imposition

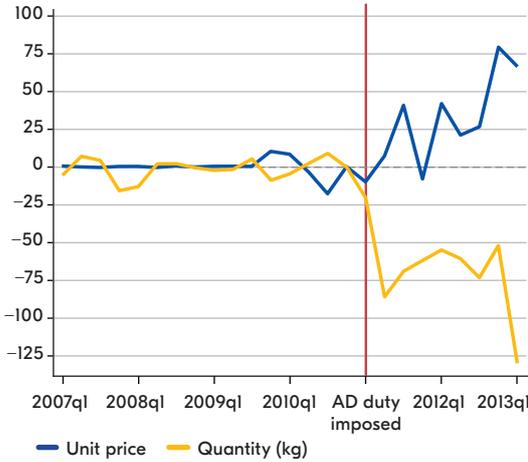


Figure 8.2 Glass fibre products (AD558) Intra-EU25
Percentage change vis-à-vis one quarter prior to imposition

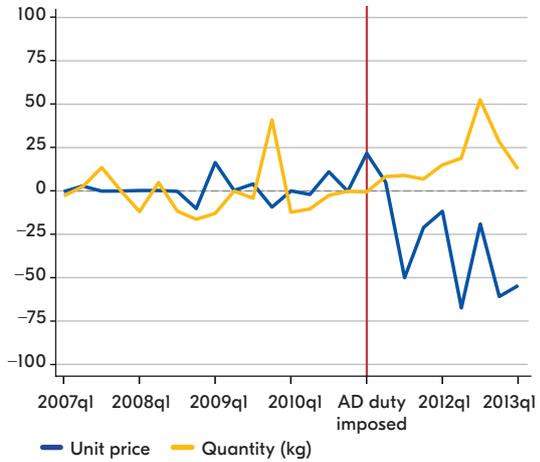


Figure 8.3 Glass fibre products from non-targeted countries
Percentage change vis-à-vis one quarter prior to imposition

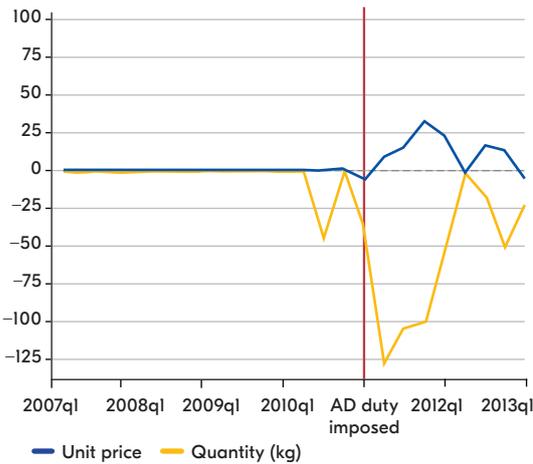
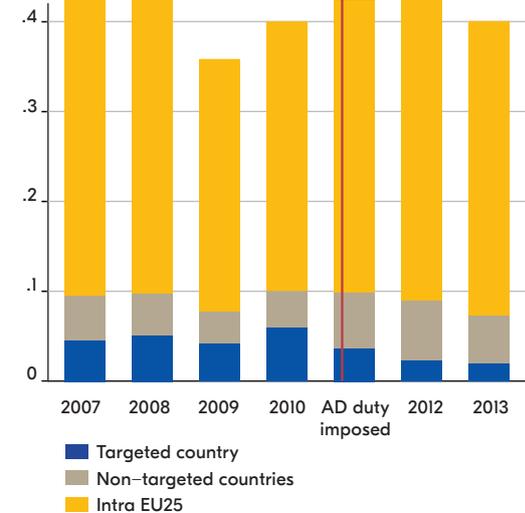


Figure 8.4 Glass fibre products (AD558)
Imports and intra-EU25 trade (billion EUR)



Source: Eurostat, EU Commission and own calculations.

The results in Figure 8 suggests that, two years after the anti-dumping-duty was imposed, imports from China came to a halt. The magnitude of lost Chinese exports after two years was 125 per cent lower vis-à-vis the exports one period before the duty was imposed, a loss that can only be achieved when exports are expected to grow. This picture is in line with the observed levels of trade depicted in the right-hand lower panel of Figure 8.

Within the EU, trade in glass fibre products increased after the duty was imposed. The two-year average effect roughly amounts to a 20 per cent increase in intra EU-trade. Hence, a change of suppliers, from Chinese to domestic, seems to have occurred.

One can also note that imports from non-targeted third country suppliers were negatively affected by the duty. The results also suggest that non-targeted third country suppliers raised their prices in response to the duty. This type of reaction is in line with the findings of Bown and Crowley (2007), Brenton (2001), Durling and Prusa (2007), Krupp (1994) and Krupp and Pollard (1996), suggesting that the threat of being targeted in an anti-dumping investigation can make exporters hold back their exports and raise their prices. The pattern shown in Figure 8 is consistent with such a deterrent effect.

6.2.6 AD541 Anti-dumping duties on aluminium road wheels from China

In August 2009, the EU initiated an anti-dumping investigation into aluminium road wheels against China. This led to the imposition of a provisional anti-dumping duty of 20.6 per cent in May 2010 and a definitive anti-dumping duty of 22.3 per cent in October of the same year.

Figure 9. AD541 Anti-dumping duties on aluminium road wheels from China

Figure 9.1 Aluminium road wheels (AD541) from China
Percentage change vis-à-vis one quarter prior to imposition

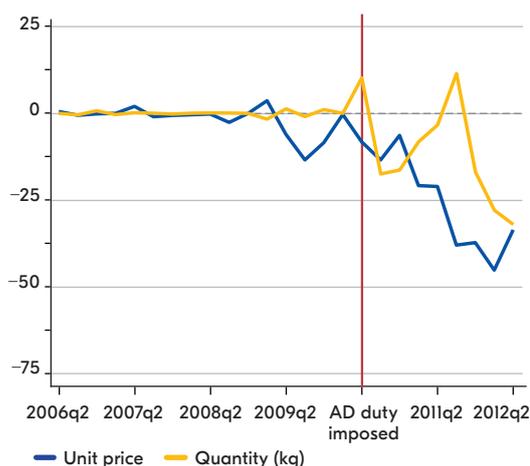


Figure 9.2 Aluminium road wheels (AD541) Intra-EU25
Percentage change vis-à-vis one quarter prior to imposition

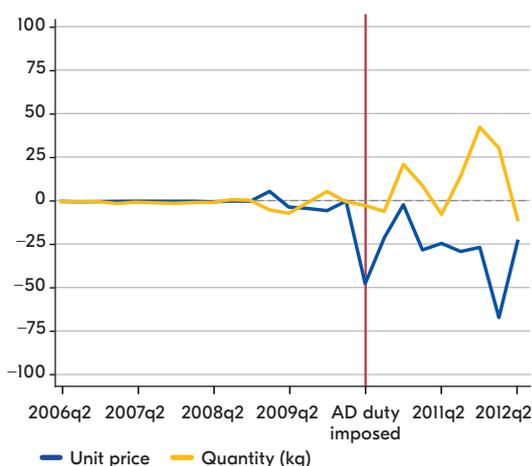


Figure 9.3 Aluminium road wheels from non-targeted countries
Percentage change vis-à-vis one quarter prior to imposition

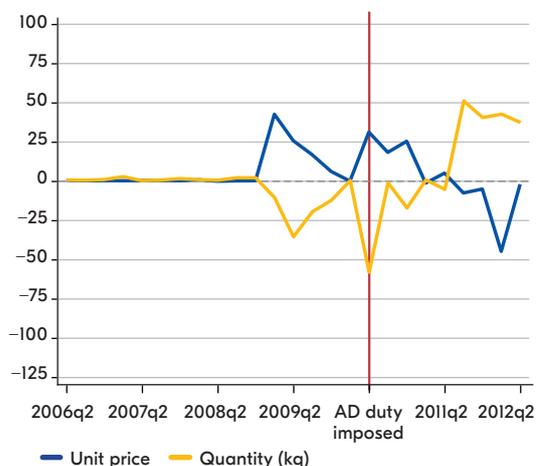
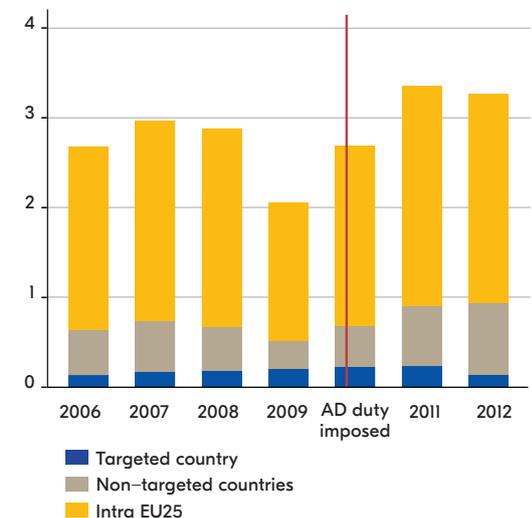


Figure 9.4 Aluminium road wheels (AD541)
Imports and intra-EU25 trade (billion EUR)



Source: Eurostat, EU Commission and own calculations.

Figure 9 shows that the anti-dumping duty led to imports from the targeted country being substituted by imports from both intra-EU suppliers and suppliers from non-targeted countries. The result is partly in line with findings from the average analysis, suggesting that suppliers from non-targeted third countries gained market share as a result of the imposed duties.

Table 3: Summary of single case results. Two-year average effects.

Case/products	Impact on	Definitive duty	Quantity	Import price ^(A)
Ductile pipes	Target country (India)	AD 14.1 %	-59 %	-13 % (-0.7 %)
Ductile pipes	Intra-EU25	.	-36 %	1 %
Ductile pipes	Non-targeted countries	.	-5 %	48 %
Stainless steel cold-rolled flat products	Target country (China)	AD 25.2 %	-99 %	-12 % (10 %)
Stainless steel cold-rolled flat products	Intra-EU25	.	22 %	-19 %
Stainless steel cold-rolled flat products	Non-targeted countries	.	-4 %	-32 %
Stainless steel wires	Target country (India)	AD 12.5 % AS 3.7 %	-32 %	-16 % (-2.4 %)
Stainless steel wires	Intra-EU25	.	9 %	-10 %
Stainless steel wires	Non-targeted countries	.	-4 %	-34 %
Grain-oriented flat-rolled products of electrical steel ^(B)	Target country (Russia)	AD 21.6 %	-50 %	69 % (106 %)
Grain-oriented flat-rolled products of electrical steel	Target country (US)	AD 22.0 %	-98 %	20 % (46 %)
Grain-oriented flat-rolled products of electrical steel	Intra-EU25	.	-34 %	0 %
Glass fibre products	Target country (China)	AD 62.9 %	-67 %	30 % (112 %)
Glass fibre products	Intra-EU25	.	17 %	-28 %
Glass fibre products	Non-targeted countries	.	-56 %	11 %
Aluminium road wheels	Target country (China)	AD 22.3 %	-11 %	-25 % (-8.3 %)
Aluminium road wheels	Intra-EU25	.	10 %	-30 %
Aluminium road wheels	Non-targeted countries	.	10 %	2 %

Notes: ^A Change in import price. Change in consumer price in parentheses (.). Impact on consumer price of imports from target country within parentheses (.) calculated as $[(1+\hat{p}^*)(1+\tau^{AD,AS})-1]*100$.

^B Due to very limited imports of grain-oriented flat-rolled products of electrical steel from non-targeted third countries, the impact on imports from these countries drops out.

7. Conclusions

With a history dating back to the beginning of the twentieth century, anti-dumping measures are the most frequently used trade defence instrument. The economic rationale for anti-dumping and anti-subsidy measures rests mainly on the fear of predatory price behaviour and the distortive effects on competition associated with subsidies and dumping. One drawback of these instruments is that they tend to increase the consumer price of the targeted goods. Thus, there is a trade-off between consumer and producer interest. Against this background, this study analyses the effect on import prices and quantities of a series of anti-dumping and anti-subsidy measures undertaken by the EU during the period 2008-2015.

A key finding is that imports from targeted countries, on average, decrease by 28 per cent during the two years after the measures are imposed. Hence, if the goal is to reduce imports from targeted countries, these instruments fulfil their purpose.

Reducing imports is not a purpose in itself, however. An underlying idea is that domestic (intra-EU) producers are hurt by alleged unfair competition and that they will regain market share once the anti-dumping or anti-subsidy measure is in place. We find little evidence suggesting that EU producers regain market share as a result of the imposition of anti-dumping and anti-subsidy measures. The estimated two-year effect is a marginal decrease of one per cent in intra-EU trade. Moreover, intra-EU trade is decreasing towards the end of the two-year evaluation period. Hence, the possibility of achieving a long-term increase in intra-EU trade through the imposition of anti-dumping and anti-subsidy measures seems faint.

While the imposed measures fail to boost intra-EU trade, there is a positive impact on EU imports from non-targeted third countries. On average, imports from non-targeted third countries increase by 13 per cent over two years. These results are in line with those found by the National Board of Trade (2012, 2013b) and Brenton (2001). One potential reason for the weak effect on intra-EU trade is that protection is often requested by less competitive firms and declining industries (Grossman and Helpman, 1992; Gustafsson et al., 2019). Hence, non-targeted producers may be in a better position than intra-EU firms to fill the gap from the targeted suppliers.

Turning to price effects, the average impact of the imposed measures on import prices from the targeted countries is limited to a four per cent increase for the targeted products. However, the average additional duty imposed is 30 per cent, suggesting an upward pressure on the price of targeted goods by approximately 35 per cent, an effect that is also likely to hit downstream producers using the targeted products in their production. Roughly 80 per cent of the tariff lines of the 54 cases (and the same proportion of the 15 cases) were intermediate goods.

We also note that the increase in the consumer price is slightly larger than the fall in demand. When the consumer price increases by more than the fall in imported quantities, consumers' total expenditure on the targeted products increases. This can be taken as an indication that these products are not easily replaced by alternative suppliers. Despite this inelastic demand on imports from targeted countries, imported quantities from targeted countries clearly fall.

The imposed measures do not seem to have an upward pressing effect on the price for the intra-EU trade of targeted goods. The impact on intra-EU trade is a four per cent price decrease, while there is an estimated price fall of seven per cent among non-targeted third country suppliers. The lack of evidence of increased import prices can be seen as an



indication that competition among intra-EU and non-targeted third country producers is maintained.³²

The analysis of specific cases both completes and complicates the picture. For example, after the implementation of anti-dumping duties on ductile pipes, imports from the targeted country fell, while the measures on stainless steel wires had no clear effect on the imported quantities. Similarly, the price effect varies, from positive to negative values across the cases. One lesson to be learned is therefore that it is difficult to foresee how these measures will impact the price and quantity of targeted goods.

Out of the cases affecting potentially climate-related goods that we were able to analyse (AD558 and AD608), we conclude that these products were significantly affected by the anti-dumping duties. Prices from the targeted countries tended to increase, while quantities were heavily reduced. The introduction of trade measures such as anti-dumping and countervailing duties can increase trade costs and thus delay the diffusion of climate-mitigating technologies. A possible way forward would be a broader approach which takes not only producer interests but also climate objectives into consideration by better utilising the so-called Union-interest test (i.e. the overall public interest test). This proposal was discussed during the modernisation of the trade defence instrument back in 2013 but was dismissed.^{33,34}

We argue that policy makers should avoid anti-dumping and anti-subsidy measures if the harm to the public interest can be expected to exceed the benefit to the allegedly harmed industry. We therefore call for a renewed discussion of this issue, and suggest that the EU's impact assessments of anti-dumping measures should include an analysis of the overall welfare effects (a general equilibrium analysis and the potential climate effects).

Turning to competition, we note that the requirements regarding market shares and price undercutting are higher in the EU anti-dumping legislation than in the EU competition legislation. A transition of the anti-dumping legislation towards the competition legislation is therefore proposed.

As a final word, an overarching goal for any trade policy should be to do more good than harm. By showing the negative price effects on EU consumers and downstream producers at the same time as we have no positive effect on intra-EU sales, our study calls into question the suitability of anti-dumping duties as a frequently used trade policy instrument to counter unfair competition

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Footnotes

- 1 WTO (2020)AD_MeasuresByRepMem.pdf (wto.org) 340 AD measures were reported by the EU.
- 2 WTO (2020) CV_MeasuresByRepMem.pdf (wto.org) 45 CVD measures were reported by the EU.
- 3 Safeguard measures are not included in this study since only one case (Safe 007) was initiated by the European Commission during 2008-2015, and it was terminated without any measures.
- 4 In this study, 'climate-related goods/products' means products that have been considered as environmental goods by different actors within the international trade policy community, such as the OECD, UNEP, APEC etc.
- 5 A safeguard measure is another trade defence instrument used by the EU. The EU rules for this are based on the WTO Agreement on Safeguards, Article XIX of GATT 1994.
- 6 WTO — Trade topics — Anti-dumping — Agreement on implementation of Article VI of the General Agreement on Tariffs and Trade 1994
- 7 tradoc_151016.pdf (europa.eu)
- 8 According to EU Regulation 2016/1036.
- 9 Directly or indirectly imposing unfair purchase or selling prices or other unfair trading conditions are examples of abuse.
- 10 Official Journal of the European (2012). Article 102 of The Treaty on the Functioning of the European Union <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:l2012E/TXT&from=EN>
- 11 One of the first authors to include industry-specific conditions as determinants of AD filings was Finger (1981). A key finding in this field is that monopolistic industries with many employees (meaning many voters) seem to find it easier to agree about AD filings and are more likely to get support for their cause from the relevant authorities (Baldwin 1985). The bulk of empirical evidence on the importance of industry-level variables stems from the US, but Blonigen and Prusa (2003) refer to a number of studies that have also found similar patterns in the EU (Eymann and Schuknecht 1996; Tharakan 1991; Tharakan and Waelbroeck 1994).
- 12 In a similar vein, Staiger and Wolak (1994) found that imports fall during the period of investigation, regardless of the ultimate outcome of the case.
- 13 The European Commission investigations can be found on the following website Trade defence - Trade - European Commission (europa.eu)
- 14 The data were retrieved during January and February 2021. Only one case regarding safeguard measures was investigated by the Commission during this period, and this was terminated without any measure being imposed. Cases terminated without any measures being imposed are not included in our data.
- 15 Specific companies can be targeted with lower or higher duties than the duty imposed on "all other companies", after investigation by the Commission.
- 16 In addition, some missing values are imputed by an autoregressive regression.
- 17 This includes agricultural products at 11.2 per cent and non-agricultural products at 4.1 per cent. Source: WTO (2021). World Tariff Profiles (2021).
- 18 Some cases cover only one CN code, while others cover several CN codes. Two cases, (AD580) Bioethanol and (AD533) Seamless pipes and tubes of iron or steel, cover as many as 17 CN codes each.
- 19 This reference period is chosen on the assumption that the forthcoming targeted goods are not yet affected in terms of trade volume and price.
- 20 See also Abadie et al. (2010, 2015).
- 21 Robustness checks can be done by e.g. running placebo tests with fake treatments.
- 22 The Fisher index is the geometric average of the Laspeyres and Paasche indexes and is sometimes labelled the perfect price index since it corrects for the positive bias of the Laspeyres index and the negative bias of the Paasche index. The Fisher index is reversible. The reversibility means that it is equally easy to apply it for the construction of a price index and the construction of a quantity index.
- 23 A possible solution would have been to trace the revised codes. However, this practice is associated with relatively large uncertainty.
- 24 For cases with specific duties, ad valorem equivalents (AVEs) are not included in the calculation of the average tariff.
- 25 The data requirements include the requirement for observations spanning four years pre-treatment and two years post-treatment with no gap. Trade flows of less than EUR 1 million are dropped since they can exhibit jumps of several thousand per cent, which, in turn, makes inference uncertain. A generic lag structure is applied for the SCM analysis using lags up to t-6. Because of the generic lag structure and to minimise the prediction error, the three cases with the highest RMSE are dropped from the average.
- 26 As a technical note on the estimations, for each case the estimations are built on a general lag structure using all lags up until six periods (quarters) before the treatment. That is, the training period when we learn how to generate the synthetic outcome spans the period from (t-16) to (t-6). The six quarters before the duty is imposed are used as an evaluation period.
- 27 -
- 28 The average import duty of 30 per cent is added to the increased import price, thus 35 per cent ($1.04 \times 1.30 = 1.35$).
- 29 A back of the envelope calculation of the implied price elasticity gives an estimate slightly less than unity (one-to-one). A price elasticity of close to one is often assumed to be a realistic average elasticity.
- 30 This case and a series of other cases are further discussed by Durr (2020).

- 31 Provisional anti-dumping duties were also imposed on China (28.7 per cent), Japan (35.9 per cent) and South Korea (22.8 per cent). When the definitive anti-dumping duties were set, they were 36.6 per cent against China, 39 per cent against Japan and 22.5 per cent against South Korea.
- 32 An alternative explanation of the downward change in prices from non-targeted third countries is that increased exports allow them to benefit from cost-reducing scale effects.
- 33 European Commission (2013a): DG Trade: Working Document DRAFT GUIDELINES ON UNION INTEREST. https://trade.ec.europa.eu/doclib/docs/2013/april/tradoc_150839.pdf
- 34 European Commission (2013b): Replies of interested parties on Commission draft guidelines.

Sammanfattning

I denna studie analyseras de ekonomiska effekterna av EU:s handelspolitiska skyddsinstrument. Studien är ett uppdrag som följer av regeringens regleringsbrev till Kommerskollegium för 2021. Det huvudsakliga syftet har varit att analysera antidumpnings- och utjämningstullar som införts mellan 2008 och 2015, och hur de har påverkat priser och kvantiteter för produkter som varit föremål för dessa åtgärder. Analysen har utförts med den syntetiska kontrollgruppsmetoden (SCM).

Resultaten från analysen visar att införda antidumpnings- och antisubventionsåtgärder minskar importen från länder som är föremål för dessa åtgärder, medan effekten för handeln inom EU är nära noll. För konsumenter leder åtgärderna till högre priser på importerade varor och därmed lägre konsumentnytta. Mellan de olika fallen som analyserats finns också stora skillnader kring hur de påverkar priser och handelsvolym, vilket visar att det kan vara svårt att förutsäga vilken effekt enskilda åtgärder kan ha.

De övergripande resultaten från analysen visar att importen från länder som varit föremål för dessa åtgärder sjunker med 28 procent över en tvåårsperiod. Givet att den genomsnittliga tilläggstullen (antidumpnings- och utjämningstullen) är 30 procent och att importpriset ökar med cirka 4 procent, är en minskning av importerad kvantitet med 28 procent i linje med tidigare forskning. Vi kan därmed konstatera att om avsikten med åtgärderna varit att minska importen från länder som påståtts dumpa eller subventionera sin export till EU så har detta till viss del varit framgångsrikt.

Om avsikten med åtgärderna är att låta EU-producenter återfå marknadsandelar lyckas inte detta policyinstrument särskilt väl. Vår studie visar att över en tvåårsperiod efter att åtgärderna har införts minskar handeln inom EU med 1 procent. Istället för ökad handel från företag inom EU tyder resultaten på att det är tredjelandsproducenter som inte har varit föremål för åtgärder som gynnas. Resultaten pekar på att som en följd av införda åtgärder beräknas importen från tredjeland öka med 13 procent.

Avsaknaden av positiva handelseffekter för EU:s producenter är problematisk eftersom åtgärderna är tänkta att gynna dem. Dessutom skadas EU:s konsumenter och företag längre ner i värdekedjan av ökade priser. Om målet med åtgärderna varit att göra mer nytta än skada är det därför svårt att se att detta uppfylls.

Slutligen har denna studie visat att klimatrelaterade varor tenderar att bli föremål för handelspolitiska skyddsinstrument. I likhet med andra varor som utsätts för dessa typer av åtgärder ökar konsumentpriset och handelsvolymen minskar. Givet att dessa varor är potentiellt fördelaktiga för klimatet och miljön kan ökade kostnader för handel med dessa varor komma att komplicera och/eller förhindra spridning av utsläppsreducerande teknik. En möjlig väg framåt är att vid införande av åtgärder anta ett bredare synsätt som inte bara tar producentintressen i beaktning utan som också i ökad uträkning tar klimathänsyn. Beslutsfattare bör undvika antidumpnings- och antisubventionsåtgärder om skadan av unionsintresset anses överstiga nyttan för den påstått skadade industrin. Vi efterlyser därför en förnyad diskussion för denna fråga och föreslår att EU:s konsekvensbedömning av åtgärder ska inkludera en genomgripande välfärdsanalys samt överväga en harmonisering där EU:s regelverk rörande antidumpning tillåts närma sig EU:s konkurrenslagstiftning.

The National Board of Trade Sweden is the government agency for international trade, the EU internal market and trade policy. Our mission is to facilitate free and open trade with transparent rules as well as free movement in the EU internal market.

Our goal is a well-functioning internal market, an external EU trade policy based on free trade and an open and strong multilateral trading system.

We provide the Swedish Government with analysis, reports and policy recommendations. We also participate in international meetings and negotiations.

The National Board of Trade, via SOLVIT, helps businesses and citizens encountering obstacles to free movement. We also host several networks with business organisations and authorities which aims to facilitate trade.

As an expert agency in trade policy issues, we also provide assistance to developing countries through trade-related development cooperation. One example is Open Trade Gate Sweden, a one-stop information centre assisting exporters from developing countries in their trade with Sweden and the EU.

Our analysis and reports aim to increase the knowledge on the importance of trade for the international economy and for the global sustainable development. Publications issued by the National Board of Trade only reflects the views of the Board.

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