Euroeconomics

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THIRD COUNTRY IMPACT
OF EU ANTI-DUMPING MEASURES

Abstract

This paper investigates the impact of EU antidumping measures on the targeted country and non-targeted country. A three-country model is employed to examine the trade destruction, trade diversion, trade deflection and trade depression effects associated with the EU antidumping measures imposed on China and the US during the 1995–2005 period. The findings suggest that EU antidumping measures against China destroy Chinese exports to the EU and lead to an increase of Chinese exports to the US (trade deflection). Further, EU antidumping measures on US exports divert Chinese exports in the same products to the EU and lead to a reduction of Chinese exports in the same products to the US (trade depression).

Key words:

Trade destruction, Trade diversion, Trade deflection, Trade depression.

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1. Introduction

Over the past few decades, the liberalization in international trade has rapidly progressed. Many traditional forms of barriers to trade, most importantly tariffs and quotas, have been reduced worldwide. While tariffs and quotas have been and continue to be reduced (Figure 1), another type of trade barrier, anti-dumping, is being used more and more frequently as a measure of protection [14]. Further complicating the role of antidumping is the fact that the economies affected by antidumping protection have changed over time; traditionally anti-dumping was used by and against developed economies, but over the past decade developing economies have emerged as frequent targets (and users) of antidumping (Prusa, 2001; Fu, 1997).

Figure 1.

**Average tariffs and antidumping measures in force, 1987–1999**
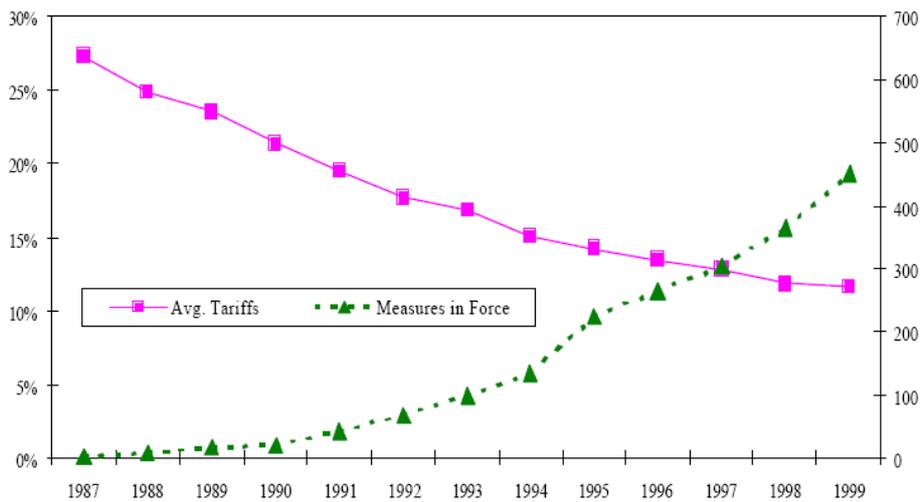
Source: CATO (2001), Brink Lindsey and Dan Ikenson

Theoretically, AD actions are intended for use only against importers suspected of unfair trade practices. In practice, as the number of users and cases filed annually grow until 2006[1], the increased use of antidumping measures is likely to be an important non-tariff barrier in the global trade that signals merely an increase in unfair trade and unfair competition, and a serious distortion on the trade flow and welfare effect. The close relationship between GATT/WTO membership and the adoption of an AD law is consistent with Nelson's argument (Nelson, 1982) that governments are unwilling to enter into sizable liberalization without providing some kind of release for domestic protectionist pressures. The trade liberalization under WTO will be seriously eroded.

The literature has abundantly studied the reasons for the proliferation of antidumping laws worldwide and the impact of antidumping measures on trade flows. Prusa and Skeath [14] observe that the new AD users more frequently initiate investigations with a potentially retaliatory motive than the traditional users. Messerlin (2004), comparing AD measures to size of imports, shows that six of the major new users–Argentina, Brazil, India, Mexico, South Africa and Turkey– use AD more intensely than the traditional users. Zanardi [17] has identified the new users as a major source of growth in the use of antidumping. The comparison of AD practices in developing countries with these with the traditional users (developed countries) by Gunnar Niels and Adriaan ten Kate [11], was particularly relevant (Figure 2).

Figure 2.

Count of antidumping initiations, 1980–2005
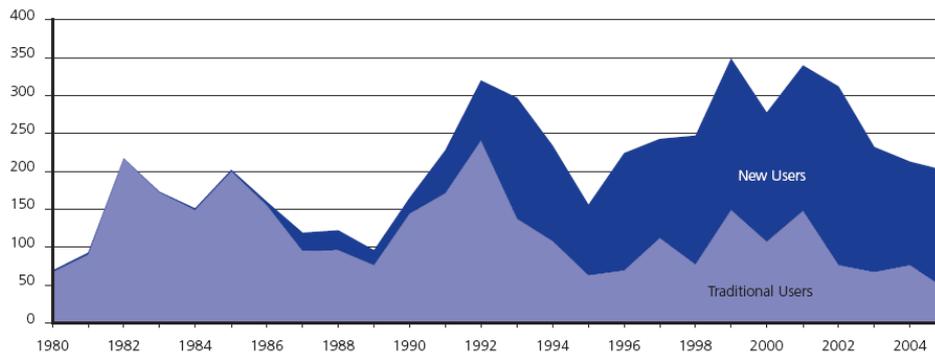
Source: Prusa (2005) and WTO Secretariat.

Note: Traditional users include Australia, Canada, the EU and the US.

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[1] According to the latest report by the WTO Secretariat, the number of initiations of new anti-dumping investigations declined sharply during the period 1 January–30 June 2007, dropping by 47 per cent compared with the number during the corresponding period of 2006. The number of new measures also declined, by 20 per cent.

Francois and Niels (2004) also found evidence for retaliatory motives, with investigations that were initiated within 12 months after the target country had opened an investigation against Mexico being three times as likely to result in a positive outcome. A study on Mexico, by Mendieta (2004), which covers the period 1994–1998, confirms the trade destruction effect from AD on the named countries, but also finds some evidence of trade diversion to third countries. Miranda (1995) also describes some anecdotal evidence of import diversion effects of AD in Mexico. Bown and Crowley [5] found strong evidence of trade diversion and trade depression by examining the trade effects of US antidumping measures against Japan on the Japanese exports to the US and EU.

In this paper, we examine trade destruction, trade diversion, trade deflection and trade depression effects associated with the EU antidumping measures imposed on China and the US, by using a dynamic panel data model to estimate the impact of the EU antidumping measures. A dataset of Chinese exports between 1995 and 2004 was constructed, thus exploiting the substantial variation across products and time on Chinese exports to third countries. We estimate the impact of EU antidumping measures imposed on Chinese exports and examine the trade destruction and trade deflection effects. We then investigate the impact of EU antidumping measures imposed on US exports and assess the trade diversion and trade depression effects. Our analysis reveals that EU antidumping measures against China destroy Chinese exports to the EU and lead to an increase of Chinese exports to the US (trade deflection). Further, EU antidumping measures on US exports divert the Chinese exports in the same products to the EU and lead to a reduction of Chinese exports of the same products to US (trade depression).

The remainder of the paper is organized as follows: section 2 presents a brief overview of the proliferation of antidumping laws. In the section 3 we outline the empirical model and the dataset for the period 1995-2004 to estimate the impact of EU antidumping measures on the targeted and non-targeted country. Section 4 presents the empirical results of our estimations.

2. Proliferation of antidumping laws

Canada passed the first formal antidumping (AD) legislation in 1904. By now, most of the major independent trading countries have similar laws. Over the last two decades, the anti-dumping rules have become the most popular instrument of trade litigation. According to a publication by the WTO secretariat, 41 members of World Trade Organization (WTO) reported 2.851 AD investigations between 1995 and 2005 and 1804 cases resulted in an antidumping measure (Table 1). Over the past 25 years there have been more dumping disputes than disputes under all other GATT trade statutes put together.
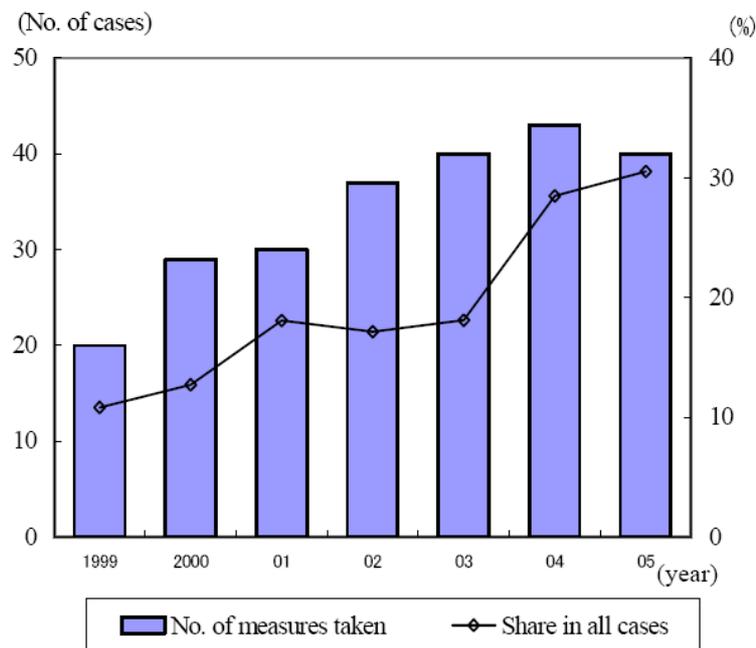
Table1.

Trade contingent actions, initiations and measures, 1995–2005

Trade contingent instrument	Initiations	Measures
Anti-dumping	2,851	1,804
Countervailing measures	182	112
Safeguards	142	70

Source: WTO Secretariat.

Figure 3.

Antidumping Measures against China

Source: Ryuichi Ushiyama (2007) from World Trade Organization statistics.

The EU anti-dumping policy applies the rules stated in Article VI of GATT 1994 and further specified in the Agreement on the Implementation of that article. An antidumping investigation is initiated by complainants representing the EU industry involved. They are responsible for providing the European Commission with documentation on dumping and injury. The Commission subsequently

investigates the case and determines whether dumping is taking place, whether dumped imports are causing material injury to the EU industry and whether the negative effects of taking measures against the dumper(s) are proportionate to the benefits. If the European Union's Council of Ministers agrees with the Commission that the case under consideration involves dumping and injury, the result will be a definitive measure in the form of anti-dumping duties.

China initiated trade liberalization about 25 years ago, and since then has witnessed an accelerated increase in its exports. In recent years (Table 2), however, antidumping measures taken against China have increased greatly both in terms of the number of cases and as a percentage of all such measures imposed (Figure 3). We will investigate whether there is evidence that the EU anti-dumping measures have an impact on the targeted country (China) and on Chinese export patterns to third markets (USA) and whether there is variation across importing countries and/or any potential distortions of international trade flows.

Table 2.

GDP and merchandise trade by region, 2004-06
(Annual percentage change, at constant prices)

	GDP			Exports			Imports		
	2004	2005	2006	2004	2005	2006	2004	2005	2006
North America	3.9	3.2	3.4	8.0	6.0	8.5	10.5	6.5	6.5
United States	3.9	3.2	3.4	8.5	8.0	10.5	11.0	6.0	5.5
South and Central America[a]	6.9	5.2	5.2	13.0	8.0	2.0	18.5	14.0	10.5
Europe	2.4	1.8	2.8	7.0	4.0	7.5	7.0	4.0	7.0
European Union (25)	2.3	1.6	2.8	7.0	4.0	7.5	6.5	3.5	6.5
Commonwealth of Independent States (CIS)	8.0	6.7	7.5	12.0	3.5	3.0	16.0	18.0	20.0
Africa and Middle East	6.0	5.5	5.4	8.0	5.0	1.0	14.0	13.0	8.5
Asia	4.8	4.1	4.4	15.5	11.5	13.5	14.5	8.0	8.5
China	10.1	9.9	10.7	24.0	25.0	22.0	21.5	11.5	16.5
Japan[b]	2.7	1.9	2.2	13.5	5.0	10.0	6.5	2.0	2.0
India	8.0	8.5	8.3	15.5	25.5	11.5	16.0	20.5	12.0
World	3.9	3.2	3.7	10.0	6.5	8.0	...	...	...

Source: WTO secretariat

a Includes the Caribbean.
b Trade volume data are derived from customs values deflated by standard unit values and an adjusted price index for electronic goods.

For a variety of reasons, China is a particularly useful starting point for such an investigation. First, during the creation of the World Trade Organization (WTO) between 1995 and 2005, antidumping measures taken against China numbered a cumulative total of 338, almost three times as many as those taken against South Korea, which was the second largest target with a cumulative total of 127. China has become the most «popular» country for antidumping measures and most of the antidumping cases have led to relatively high duties on Chinese products.

Second, China, the EU and the US are three of the largest economies in the world trading system and their total share of world trade amounts to more than 50%. China is the EU's second largest trading partner after the United States, and the EU is China's largest trading partner in 2007 with a share 16.4% of China's total exports, ahead of the USA with a share of 14% (Table 3). In 2003, China surpassed Japan and Mexico to become the US's third largest trading partner after Canada (Table 4), while the United States is China's second largest trading partner, after the expanded European Union (25 nations)[2]. The trade relations among these three economies are becoming increasingly intensive.

Third, Chinese exporters are frequently targeted by the EU and US import protection. As traditional user; between 1995 and 2004, the EU imposed 307 definitive anti-dumping measures in total (US: 334, India: 306) (Table 5). During the same period, the EU initiated 52 cases against China (US: 56, India: 76) representing 17 percent of all its anti-dumping cases. In 2005 alone, the EU initiated another 8 anti-dumping investigations on Chinese imports according for 32 percent of all EU anti-dumping cases (26) filed in the same year[3]. Definitive duties[4] were imposed in most cases.

The volume of Chinese exports affected by measures is still much less than 2 percent of all Chinese exports. In the United States, slightly more than 60 percent of the cases against Chinese products are recognized as dumping (1980–2004), which is higher than the share (slightly more than 40 percent) of the cases against products of other countries. The average level of anti-dumping duties against Chinese products is 23 percent higher than that imposed on the same products from other countries[5].

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[2] Source: «EU Becomes China's Biggest Trading Partner – USDA Attache», *Reuters News*, February 25, 2005.

[3] Source: http://ec.europa.eu/trade/issues/respectrules/anti_dumping/fs061206_en.htm.

[4] Antidumping duties may have several forms: 1) Ad valorem duty, i. e., a fixed percentage of the CIF prices before payment of customs duty; 2) Specific duty, i.e., a fixed amount per unit imported; 3) Duty of an amount equal to the difference between the price at the Community frontier and a fixed price established by the EC Commission 3 OJL50/4-20.2.98.

[5] According to the United States Government Accountability Office (2006).

Table 3.

China's Top Ten Export Markets, 2007

Country	Share of China total exports %
EU	16.4
US	14.0
Japan	10.9
ASEAN	9.3
Hong Kong	9.1
South Korea	7.4
Taiwan	5.7
Russia	2.2
Australia	2.0

Source: MOFCOM (2007).

Table 4.

Shares of Total US Imports by Country, 2005

Country	Share of total US imports %
EU-15	17.8
Canada	17.2
China	14.6
Mexico	10.1
Japan	8.3
ASEAN	5.9
NICS	5.2
All other	20.9

Source: The Library of Congress

Table 5.

EU and US Antidumping against China, 1995-2004

AD imposing Country/years	Ranking of targeted country	Antidumping investigations[a]	Resulting in measures
EU 1995–2001	China	36 (0.14)[b]	19 (0.53)
	India	24 (0.10)	15 (0.63)
	Korea	21 (0.08)	9 (0.43)
	Thailand	14 (0.06)	10 (0.71)
	Taiwan	13 (0.05)	8 (0.62)
	All other	142 (0.57)	91 (0.64)

AD imposing Country/years	Ranking of targeted country	Antidumping investigations[a]	Resulting in measures
EU 2002–2004	China	16 (0.28)	15 (0.94)
	Russia	6 (0.11)	3 (0.50)
	Vietnam	4 (0.07)	2 (0.50)
	US	3 (0.05)	2 (0.67)
	Norway	3 (0.05)	2 (0.67)
	All other	25 (0.44)	11 (0.44)
US 1995–2001	China	31 (0.13)	21 (0.68)
	Japan	24 (0.10)	16 (0.67)
	EU	24 (0.10)	12 (0.50)
	Korea	19 (0.08)	9 (0.47)
	Taiwan	16 (0.07)	10 (0.63)
	All other	124 (0.52)	57 (0.46)
US 2002–2004	China	25 (0.26)	19 (0.76)
	India	9 (0.09)	3 (0.33)
	EU	8 (0.08)	2 (0.25)
	Japan	6 (0.06)	2 (0.33)
	South Africa	5 (0.05)	0 (0.00)
	All other	43 (0.45)	16 (0.37)

Source: Antidumping data compiled from Bown (2007). HS system import data from Comtrade.

a EU import data is extra-EU imports only.
b % ratio of EU total antidumping cases

Given three great players in the global trading system, this allows for the possibility of substantial trade being deflected to third country markets after the imposition of EU antidumping measures. This, in turn, leads to highly critical attitudes and adverse reactions against trade liberalization achieved and against the WTO. Questions are asked such as: «Has liberalization of global trade died? Who will hurt whom in a new round of the antidumping war? A good offensive is the best defense»[6]? Some developing countries, such as China, India and Brazil, even tend to initiate anti-dumping measures against countries that previously launched measures or anti-dumping investigations against them [14].

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[6] Here the argument is presented using a simple game-theoretic example that can be seen as an illustration of the Smoot-Hawley tariff war of the 1930s. Consider two large trading partners, A and B, facing two policy options. Each of them can either choose a free trade policy or impose a tariff that raises its own real income but reduces its trading partner's income.

3. Methodology and data

We examine Chinese exports at product-level by constructing a three-country model and using trade data at the 6-digit HS level; i.e., the finest available level of disaggregation that is immediately comparable across countries. This comparability is necessary given our focus on linking changes in Chinese export growth to the EU with changes in Chinese export growth to the US, and the response of each to the imposition of EU antidumping measures.

3.1. Chinese exports to EU

In order to estimate the impact of EU anti-dumping measures on the targeted country, we will follow the empirical models of Bown and Crowley (2004a) and use the following econometric specification:

$$\Delta \ln(x_{EU,ht}) = \Delta \alpha_{Ht} + \alpha_1' \Delta \tau_{chinese,ht} + \alpha_2' \Delta \tau_{i,ht} + \alpha_3' \Delta \ln(x_{EU,ht-1}) + \Delta \varepsilon_{EU,ht} \qquad (1)$$

Equation (1) describes the value growth of Chinese exports to the EU of the product h at time t, with t the year of antidumping investigation and $\Delta \ln(xEU,ht)$ export growth of Chinese product-level to the EU. $\Delta \tau chinese,ht$ and $\Delta \tau i,ht$ explain the variation of EU antidumping measures against imports of product h at time t from Chinese and third countries i.[7] Further, $\Delta \alpha_{H\,t}$ are a combination of industry–time fixed effects designed to control for industry H-specific covariates (e.g., productivity shocks) or EU-specific covariates such as changes in aggregate demand or exchange rate fluctuations that may affect Chinese export growth to the EU. Finally, we use an instrumental variables/two-staged least squares approach and instrument for the lagged growth rate, $\Delta \ln(x_{EU,\ ht-1})$ in equation (1), with the second lag of the log level of exports of h to the EU, $ln(xEU,hf-2)$ (not reported in the above specification), the lagged difference in the log of exports $[\ln(x_{EU,\ ht-1}) - \ln(x_{EU,\ ht-2})]$ will be a strong instrument while estimating the trade destruction and trade diversion effects. We define industry H as the 2-digit Harmonized System (HS) code associated with the 6-digit HS product.[8]

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[7] According to the data available, it is very difficult to gain an average of the trade-weighted average duty of third countries that also faced the EU antidumping measure, thus for purpose of our analysis, the third country is defined as US.

[8] The estimation of equation (1) is also similar with the basic approaches of Prusa (1997, 2001), which study the impact of US antidumping measures on the imports.

3.2. Chinese exports to the USA

In order to investigate the impact of EU antidumping measures on Chinese exports to the US, we extend the empirical approach similar to Bown and Crowley (2004) using the following econometric specification:

$$\Delta \ln(x_{US,ht}) = \Delta \beta_{Ht} + \beta_1' \Delta \tau_{chinese,ht} + \beta_2' \Delta \tau_{US,ht} + \beta_3' \Delta \ln(x_{US,ht-1}) +$$

$$+ \beta_4' \Delta \ln (x_{EU,ht-1}) + \Delta \varepsilon_{US,ht} \qquad (2)$$

Equation (2) describes the value growth of Chinese exports to the US of the product h at time t, with $\Delta \ln(x_{US,ht})$ the growth of Chinese exports at product-level to the US. As in equation 1, $\Delta \tau_{chinese,ht}$ and $\Delta \tau_{us,ht}$ explain the variation of EU antidumping measures against imports of product h at time t from China and the USA. $\Delta \beta_{H\,t}$ are a combination of industry–time fixed effects designed to control for industry H-specific covariates (e.g., productivity shocks), or US-specific covariates such as changes in aggregate demand or exchange rate fluctuations that may affect Chinese export growth to the USA. Once again, an instrumental variables approach for the lagged growth rate is used in the equation with the second lag of the log level of exports of h to US, in $(x_{us,\,ht-1})$. $\Delta \ln(x_{EU,\,ht-1})$ explains a surge of Chinese exports to the EU at the time *t-1* with a second lag of the log value of Chinese exports to EU such as $\ln(x_{US,\,ht-2})$ (not reported in the above specification), the lagged difference in the log of exports $[\ln(x_{US,\,ht-1}) - \ln(x_{US,\,ht-2})]$ will be a strong instrument while estimating the trade deflection and trade depression effects.

3.3. Dataset

In order to estimate equation (1) and (2), we use the product-level data set on Chinese exports to the EU and the USA at HS 6-digit level, retrieved from EUROSTAT and UN COMTRADE respectively. For 1995–2004, we are able to create a data set of the value of Chinese exports to the EU and to the US. In the present paper, we are only interested in the cases leading to definitive measures, i.e., cases in which the evaluation of normal values and dumping margins have been conducted and resulted in definitive measures (tariff or price undertakings). The EU is defined as EU-15.

In addition, we define the US as third country rather than all other countries who export the same products to the EU and the change in the Chinese and the US export price of the same products to the EU market will be negligible in our analysis. A more general concern is that our requirement of comparability of data across countries mandates the use of 6-digit HS level data, which is an aggregation of more disaggregated trade data at the 8- or 10-digit level, while antidumping measures are typically applied at the 8- or 10-digit level.

4. Empirical estimation and results

4.1. Trade destruction and trade diversion

Table 6 shows our results on the impact of EU antidumping measures on Chinese exports to the EU during the 1995–2004 period and presents evidence of trade destruction and trade diversion. We have run regressions according to two specifications. In specification 1, the dependent variable is the standard log growth rate of the value of Chinese exports to the EU. As this is an unbalanced panel of data where we lose any observations for Chinese exports to the EU of a particular product being zero in either t or $t–1$, also specification 2 is used following the approach outlined in Davis and Haltiwanger (1992).

The first three rows in Table 6 contain the estimated impact on the Chinese exports growth to the EU of product h in year t, $t–1$ and $t–2$ against which an EU antidumping measure is imposed. It is found that in year t the impact is negative and statistically significant, thus indicating trade destruction, with the imposition of a 1% EU antidumping measure against China at time t being associated with a 0.782 percentage point reduction in the growth of Chinese exports to the EU between $t–1$ and t. Imposition of EU antidumping measures at time t has no additional statistically significant effect on the growth of Chinese exports to the EU in the next period.

The interaction of EU anti-dumping measures against other countries (here the US) on Chinese exports growth to the EU in year t, $t–1$ and $t–2$ is shown in the next three rows of Table 6. The positive coefficient in year t is evidence of trade diversion, i. e., EU anti-dumping measures against US exports leading to an increase of Chinese exports in the same products to the EU. However, the sign of the coefficient for year $t–1$ becomes negative, thus suggesting the temporary nature of the trade diversion of which China benefits during year t.

4.2. Trade deflection and trade depression

Table 7 shows the impact of EU antidumping measures on Chinese export growth to the USA following the same specifications as in Table 6 and presenting the evidence of trade deflection and trade depression. The first three rows of Table 7 show the estimated impact of EU antidumping measures on Chinese export growth to the US of product h in year in year t, $t–1$ and $t–2$ while an EU antidumping measure is imposed. It is found that this impact on Chinese export growth to the US of product h in year t is positive and statistically significant, thus indicating trade deflection. i. e. the EU antidumping measures on Chinese exports are leading to an increase of Chinese export to the US.

Table 6.

The Impact of EU AD Measures on Chinese Export Values to EU, 1995–2004

Explanatory variables	Dependent Variable % Change in the value of Chinese exports to the EU in t	
	Standard log growth rate measure (1)	Zeros-corrected growth rate measure (2)
Policy Variables **Trade Destruction:**		
EU AD duty imposed on Chinese exports of h in year t	-0.782*** (0.211)	-1.110*** (0.321)
EU AD duty imposed on Chinese exports of h in year $t-1$	-0.437 (0.269)	0.115 (0.214)
EU AD duty imposed on Chinese exports of h in year $t-2$	0.486*** (0.159)	-0.137 (0.176)
Trade Diversion:		
EU AD policy imposed on country i exports of h in year t ... interacted with indicator that country $i = US$	0.586* (0.145) -0.267 (0.236)	0.937*** (0.135) -0.112 (0.153)
EU AD policy imposed on country i exports of h in year $t-1$ ... interacted with indicator that country $i = US$	-0.432** (0.159) -0.249 (0.241)	-1.112*** (0.213) -0.176 (0.139)
EU AD policy imposed on country i exports of h in year $t-2$ ... interacted with indicator that country $i = US$	0.126 (0.121) 0.262 (0.186)	0.270** (0.114) 0.138 (0.137)
Other Control Variables		
Instruments for % change in the value of Chinese exports to the EU in $t-1$	0.636*** (0.021)	0.155*** (0.012)
Two-digit HS and year combination fixed effects [number of fixed effects]	Yes [760]	Yes [860]
EU AD policy removal variables, SG policy application and removal variables	Yes	Yes
Observations	22547	30236
R^2	0.07	0.05

Notes: In parentheses are White's heteroskedasticity-consistent standard errors corrected for clusters defined on the variable defined as the HS6 product and year combination. ***, ** and * denote variables statistically different from zero at the 1, 5 and 10 percent levels, respectively.

Table 7.

The Impact of EU AD Measures on Chinese Export Value to US, 1995–2004

Explanatory variables	Dependent Variable % Change in the value of Chinese exports to the EU in t	
	Standard log growth rate measure (3)	Zeros-corrected growth rate measure (4)
Policy Variables **Trade Deflection:**		
EU AD duty imposed on Chinese exports of h in year t	0.386* (0.132)	0.345*** (0.126)
EU AD duty imposed on Chinese exports of h in year $t–1$	0.413 (0.182)	0.361 (0.137)
EU AD duty imposed on Chinese exports of h in year $t–2$	0.522** (0.194)	0.340*** (0.103)
Trade Depression:		
EU AD policy imposed on country i exports of h in year t	-0.765 (0.589)	-0.759*** (0.268)
EU AD policy imposed on country i exports of h in year $t–1$	0.302 (0.485)	0.423 (0.264)
EU AD policy imposed on country i exports of h in year $t–2$	0.665 (0.668)	0.251 (0.296)
Other Control Variables		
Instruments for % change in the value of Chinese exports to the EU in $t–1$	0.537*** (0.016)	0.602*** (0.019)
Two-digit HS and year combination fixed effects [number of fixed effects]	Yes [750]	Yes [850]
EU AD policy removal variables, SG policy application and removal variables	Yes	Yes
Observations	28575	34257
R^2	0.09	0.06

Notes: In parentheses are White's heteroskedasticity-consistent standard errors corrected for clusters defined on the variable defined as the HS6 product and year combination. ***, ** and * denote variables statistically different from zero at the 1, 5 and 10 percent levels, respectively.

At same time, the Chinese exports to the EU decline while the antidumping measures are imposed. It appears that the imposition of a 1% EU antidumping duty against China at time *t* is associated with a 0.383 percentage point increase in Chinese exports growth to the US in the same year, 0.413 in year *t*–1 and 0.522 in year *t*–2 respectively.

Table 7 also provides weak evidence of trade depression. i. e. the EU anti-dumping measures on US exports leading to a reduction of Chinese exports in the same products to the USA. The trade diversion is negatively correlated with the trade depression and an increase of Chinese exports to the EU is based on a reduction of Chinese exports to the USA. Further, imposition of a 1% EU antidumping measure on US exports in year t is associated with a 0.765 percentage point reduction in Chinese exports growth to the US in year t. Finally, the net value of trade depression is –0.379 (= 0.386 – 0.765)[9], that is the combined effect of EU antidumping measures on Chinese exports and US exports in the same products in year *t*.

5. Conclusions

In this paper we investigated the impacts of EU antidumping measures against Chinese and US exports on China and the US during the period 1995–2004: A three-country model is used to examine the trade destruction, trade diversion, trade deflection and trade depression effects of these EU anti-dumping measures. Our estimation results show strong evidence that EU antidumping measures against China destroy Chinese exports to the EU and lead to an increase of Chinese exports to the USA (trade deflection). In addition, EU anti-dumping measures against US exports are diverting Chinese exports of the same products to the EU and lead to a reduction of Chinese exports of the same products to the USA (trade depression).

Building on the existing literature, our paper makes a new contribution in analyzing the impacts of EU anti-dumping measures on a third country. In particular, we have examined the trade destruction, trade diversion, trade deflection and trade depression associated with the EU antidumping measures imposed on China exports and US exports, as follows, 1) our investigation will contribute to a better understanding of the nature of antidumping measure 2) our results shed light on the correlation between antidumping measures and the trade flows involved. However, our investigation also raises the following questions for further research on EU anti-dumping measure, 1) whether the EU anti-dumping measures against China and US exports will have an impact on Chinese and US export prices in the EU market? 2) whether Chinese anti-dumping measures against the EU and US exports would lead to the similar effects such as trade destruction, trade diversion, trade deflection and trade depression?

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[9] The net value is derived from the differential between first row and fourth row in the table 9.

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