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ECONOMIC ASPECTS OF EUROPEAN UNION TRADE POLICY

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Table of Contents

1	Introduction.....	9
2	Some stylized facts about EU trade	12
2.1	EU-27 trade patterns between 1999 and 2010	12
2.2	Trade with the BRIC(K) countries.....	16
2.3	The WTO and the Doha Round	18
2.4	The DG Trade and stakeholders in European Union trade policy.....	20
3	EU trade policy vis-à-vis developing countries	22
3.1	Introduction.....	22
3.2	Trade preferences for ACP countries	24
3.2.1	The Yaoundé and Lomé agreements.....	24
3.2.2	The Cotonou agreement	26
3.2.3	Economic Partnership Agreements and stylized facts on EU trade with ACP countries	27
3.3	The EU's Generalised System of Preferences for trade with developing countries	31
3.3.1	Aspects of the “standard” Generalised System of Preferences.....	33
3.3.2	The GSP+ system of trade preferences.....	35
3.3.3	The Everything But Arms agreement (EBA).....	36
3.4	Impact of regional trade agreements on regional trade.....	38
3.5	Preliminary summary of trade policy towards developing countries	40
4	Have EU Preferential Trade Agreements increased trade?.....	42
4.1	Introduction.....	42
4.2	Empirical approach.....	43
4.3	Empirical results.....	46
4.3.1	Results at the aggregate EU-15 level	46
4.3.2	Results for the individual EU-15 countries	50
4.3.3	Results for non-EU countries.....	52
4.4	Robustness analysis.....	53
4.4.1	Results for the EU-27 countries.....	53
4.4.2	Cross-sectional analysis for the EU-15 countries	55
4.5	Summary.....	57
5	Which countries benefit from EU anti-dumping actions?	60
5.1	Introduction.....	60
5.2	Empirical approach.....	62
5.3	Empirical results for the complete dataset.....	66
5.3.1	Impact of AD actions on EU-15 imports from named countries (unit values)	67

5.3.2	Impact of AD actions on EU-15 imports from non-named countries (unit values)	69
5.3.3	Impact of AD actions on EU-15 internal imports (unit values)	70
5.3.4	Impact of AD actions on EU-15 imports from named countries (unit volumes) ..	71
5.3.5	Impact of AD actions on EU-15 imports from non-named countries (unit volumes)	73
5.3.6	Impact of AD actions on EU-15 internal imports (unit volumes)	74
5.3.7	Arellano-Bond estimations of the model.....	76
5.3.8	Preliminary summary for the complete dataset	79
5.4	Future NMS-12 countries – did they benefit in particular?.....	80
5.4.1	Impact of AD actions on EU-15 imports from NMS-12 countries (unit values) ...	81
5.4.2	Impact of AD actions on EU-15 imports from the rest of the world (non-NMS-12 and non-EU; unit values)	82
5.4.3	Impact of AD actions on EU-15 imports from NMS-12 countries (unit volumes)	83
5.4.4	Impact of AD actions on EU-15 imports from the rest of the world (non-NMS-12 and non-EU; unit volumes)	83
5.4.5	Arellano-Bond estimations of EU-15 imports from NMS-12 countries and the rest of the world (unit values and unit volumes).....	85
5.5	Impact of AD actions in cases involving China.....	86
5.6	Summary.....	88
6	Which factors influence the outcome of EU anti-dumping decisions?.....	90
6.1	Introduction.....	90
6.2	Empirical approach.....	92
6.3	Empirical results.....	97
6.3.1	Empirical results of the complete sample for all AD cases between 1995 and 2009.....	97
6.3.2	Shortened sample on AD cases between 1997 and 2004.....	102
6.3.3	Particularities of AD cases involving China	102
6.3.4	Are AD decisions different if trade with Central and Eastern European countries is high?	105
6.3.5	Does the number of EU countries or their size of GDP make a difference in AD decisions?.....	107
6.4	Summary.....	109
7	Conclusion.....	111
	Bibliography.....	114
	Appendix to chapter 5.....	120
	Appendix to chapter 6.....	123

List of Tables

Table 2.1: The 50 most important trading partners of the EU-27 in 2010	14
Table 2.2: The ten largest trade deficits and surpluses of the EU-27 with other countries in 2010 in € billion.....	15
Table 3.1: EU-27 exports to and imports from different regions in 2010	29
Table 3.2: Overview of the current GSP regime.....	31
Table 3.3: EU-27 imports by preference regime, years 2002-2008.....	32
Table 3.4: Advantages of economic partnership agreements over EBA according to the DG Trade	37
Table 4.1: Timeline of recent European Union Preferential Trade Agreements	45
Table 4.2: Gravity estimations for EU-15 countries, applying ordinary least squares.....	47
Table 4.3: Gravity estimations for EU-15 countries, applying ordinary least squares with robust standard errors	48
Table 4.4: Gravity estimations for EU-15 countries, applying a cluster regression	48
Table 4.5: Gravity estimations for EU-15 countries, applying the fixed, random, and between effects model	49
Table 4.6: Gravity estimations for the individual EU-15 countries, variable PTA_{ijt} only	51
Table 4.7: Gravity estimations for the individual non-EU (partner) countries, only variable PTA_{ijt} is shown	52
Table 4.8: Gravity estimations for EU-27 countries, applying ordinary least squares.....	54
Table 4.9: Gravity estimations for EU-27 countries, applying ordinary least squares (OLS) with robust standard errors.....	54
Table 4.10: Gravity estimations for EU-27 countries, applying a cluster regression	55
Table 4.11: Gravity estimations for EU-27 countries, applying the fixed, random, and between effects model.....	55
Table 4.12: Gravity estimations for EU-15 countries - cross-sectional analysis.....	56
Table 5.1: Estimations of the effect of AD actions on EU-15 imports from named countries (unit values).....	67
Table 5.2: Estimations of the effect of AD actions on EU-15 imports from non-named countries (unit values).....	70
Table 5.3: Estimations of the effect of AD actions on EU-15 internal imports (unit values)	71
Table 5.4: Estimations of the effect of AD actions on EU-15 imports from named countries (unit volumes).....	72
Table 5.5: Estimations of the effect of AD actions on EU-15 imports from non-named countries (unit volumes).....	74
Table 5.6: Estimations of the effect of AD actions on EU-15 internal imports (unit volumes)	75
Table 5.7: Arellano-Bond estimations of the effect of AD actions on EU-15 imports from named, non-named countries, and EU-15 internal imports (unit values).....	77
Table 5.8: Arellano-Bond estimations of the effect of AD actions on EU-15 imports from named, non-named countries, and EU-15 internal imports (unit volumes).....	79

Table 5.9: Estimations of the effect of AD actions on EU-15 imports from NMS-12 countries (unit values).....	81
Table 5.13: Estimations of the effect of AD actions on EU-15 imports from the rest of the world (unit values).....	82
Table 5.14: Estimations of the effect of AD actions on EU-15 imports from NMS-12 countries (unit volumes).....	83
Table 5.15: Estimations of the effect of AD actions on EU-15 imports from the rest of the world (unit volumes).....	84
Table 5.16: Arellano-Bond estimations of the effect of AD actions on EU-15 imports from NMS-12 countries and the rest of the world (row; unit values and unit volumes)...	85
Table 5.17: Estimations of the effect of AD actions on EU-15 imports from named countries, only AD actions involving China (unit values).....	87
Table 5.18: Arellano-Bond estimations of the effect of AD actions on EU-15 imports from named countries, only AD actions involving China (unit values).....	88
Table 6.1: Estimations for the complete sample, all AD cases between 1995 and 2009.....	98
Table 6.2: Estimations for the complete sample, all AD cases between 1995 and 2009 (using robust standard errors).....	101
Table 6.3: Estimations for AD cases between 1997 and 2004.....	102
Table 6.5: Estimations for AD cases involving China between 1995 and 2009.....	103
Table 6.6: Estimations for AD cases involving China between 1995 and 2009 (using robust standard errors).....	105
Table 6.7: Estimations focusing on imports from NMS-12 countries, AD cases between 2002 and 2009.....	106
Table 6.9: Estimations based on dataset with two additional EU variables, AD cases between 1995 and 2009.....	108
Table 6.10: Estimations based on dataset with two additional EU variables, AD cases between 1995 and 2009 (using robust standard errors).....	109
In the appendix to chapter 5:	
Table 5.10: Estimations of the effect of AD actions on EU-15 imports from non-named countries (starting in 1999, unit values).....	120
Table 5.11: Estimations of the effect of AD actions on EU-15 imports from non-named countries (starting in 1999, unit volumes).....	121
Table 5.12: Arellano-Bond estimations of the effect of AD actions on EU-15 imports from non-named countries (starting in 1999).....	122
In the appendix to chapter 6:	
Table 6.4: Estimations for AD cases between 1997 and 2004 (using robust standard errors).....	123
Table 6.8: Estimations focusing on imports from NMS-12 countries, AD cases between 2002 and 2009 (using robust standard errors).....	123
Table 6.11: Overview table on the data of chapter 6.....	124

List of Figures

Figure 2.1: The share of EU-27 and other countries' exports in % of world exports.....12

Figure 2.2: The share of EU-27 and other countries' imports in % of world imports.....13

Figure 2.3: Share of selected EU-27 trading partners in total EU-27 trade, in 201015

Figure 2.4: Share of BRICK-Trade in total EU-27 trade17

Figure 2.5: Organisation chart of the EU DG Trade21

Figure 3.1: Import shares of selected countries from LDCs in 2010.....22

Figure 5.1: Chronological order of AD investigations (schematic)63

Figure 5.2: EU anti-dumping investigations between 1997 and 2004.....64

List of Abbreviations

ACP	Africa, Caribbean, Pacific
AD	Anti-Dumping
ASEAN	Association of Southeast Asian Nations
BRIC	Brazil, Russia, India, and China
BRICK	Brazil, Russia, India, China, and South Korea
CACM	Central American Common Market
CEPII	Centre d'Etudes Prospectives et d'Informations Internationales
CFSP	Common Foreign and Security Policy
CIS	Commonwealth of Independent States
CN	Combined Nomenclature
DG	Directorate General
DOTS	Direction of Trade Statistics
DS	Dispute Settlement (WTO)
EAC	East African Community
EBA	Everything But Arms Agreement
EFTA	European Free Trade Association
EPA	Economic Partnership Agreement
ESA	Eastern and Southern Africa
et al.	et alii (and others)
EU	European Union
EUR	Euro (€)
FTA	Free Trade Agreement
FYROM	Former Yugoslav Republic of Macedonia
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GSP	Generalised System of Preferences
GSP+	Generalised System of Preferences +
HS	Harmonized System
IMF	International Monetary Fund
LDC	Least Developed Country
MEDA	Mésures d'accompagnement financières et techniques, Mediterranean countries in the Euro-Mediterranean Partnership
MFA	Multi-Fiber Agreement
MFN	Most Favoured Nation
NAFTA	North American Free Trade Agreement
NMS-12	The twelve new European Union member states having joined in 2004 and 2007
No.	Number
NTB	Non-tariff barrier
Obs.	Observations
OCT	Overseas Countries and Territories

ODA	Official Development Assistance
OLS	Ordinary Least Squares
PPP	Purchasing Power Parity
PTA	Preferential Trade Agreement
SADC	Southern African Development Community
SITC	Standard International Trade Classification
SPS	Sanitary and Phytosanitary
STABEX	Stabilisation of Export Earnings for Agricultural Commodities
TDC	Aggregation of HS coding system
TFEU	Treaty on the Functioning of the European Union
UAE	United Arab Emirates
UK	United Kingdom
UNCTAD	United Nations Conference on Trade and Development
USA	United States of America
USD	US dollars
Vol.	Volume
WEO	World Economic Outlook
WTO	World Trade Organization

1 Introduction

The European Union is the largest destination and origin of trade flows in the world, ahead of the United States and China. This makes the EU a major player in international trade and provides it with substantial negotiating power. Therefore, analyzing the European Union's¹ trade policy² is a particularly worthwhile undertaking. The European Union and more specifically the Directorate General (DG) for Trade of the European Commission is in charge of conducting trade policy on behalf of its member states. Starting in 1958, a large selection of competences was transferred from the member states to the EU - a development which culminated in the complete transfer of trade policy competences in 1970. Nowadays, the EU has "exclusive power" to legislate on trade in goods and services and other trade related fields,³ even though the member states contribute through the Council of Ministers, and the European Parliament is involved as well.⁴ The "exclusive power" in trade matters is stated in Article 3 of the treaty on the functioning of the European Union (TFEU)⁵ and in more detail in Article 207⁶. The EU's competences comprise signing contracts and agreements such as free trade agreements or participation in WTO (World Trade Organization) negotiations, in which the EU speaks with one voice, but also autonomous trade measures, for example the imposition of anti-dumping measures.

As the former EU Trade Commissioner Pascal Lamy [...] puts it, "in the days before we had a Common Foreign and Security Policy, [...] the principal instrument of EU foreign policy was trade preferences"⁷. According to Weidenfeld and Wessels (2007), trade policy is one of the most integrated policy areas in the EU and because of the weakness of the CFSP (Common Foreign and Security Policy) the most important field of foreign policy. The history of European Union trade policy started with the foundation of the European Union. From the very beginning, maintaining trade relations to former colonies, especially those of France and Great Britain was important, which led to special trade relations with the so-called ACP (Africa, Caribbean, Pacific) countries. This was followed by the establishment of free trade agreements with the Mediterranean countries, the members of the EFTA (European Free Trade Association) and with countries all over the world. Therefore, and because of the single European market program, other countries even worried whether the EU could turn into a

¹ The European Union is considered as one country or entity as trade policy is integrated to such a high extent which justifies this designation. It is common use in literature, see for example Laursen (2009) or D. Hanson (2010), to compare the European Union to other countries like the United States, China or Japan and not only to other trade blocks. Leal-Arcas (2009, pp. 92-93) describes the European Union as "the oldest and most advanced regional scheme (...) as its integration process is the most advanced" and because member states cannot conduct an autonomous trade policy.

² Trade policy is defined by Goede (1993) as "all measures taken by a government to control exports and imports (foreign trade) of goods and services".

³ See European Commission, DG Trade (2011f).

⁴ See Laursen (2009), p. 19.

⁵ See Official Journal of the European Union (2008, C 115), p. 51.

⁶ See Official Journal of the European Union (2008, C 115), p. 140. Formerly Article 133 TEC (Treaty of the European Community).

⁷ Candau, Jean (2005), p. 8.

“fortress Europe” in the late 1980s.⁸ This was, however, not the case and European internal integration instead led to a “liberalization of European external trade policy” and the internal market program reduced the possibilities to implement national and possibly protectionist policies.⁹ In the mid 1990s, the founding of the WTO as a successor of the GATT (General Agreement on Tariffs and Trade), the conclusion of the Uruguay Round¹⁰, and the establishment of trade agreements with Eastern Europe after the fall of communism were crucial events which were accompanied by a large number of free trade agreements in order to increase trade between the EU and its trading partners. The enlargement of the European Union in 1995, 2004 and 2007 further increased the size of the European Union as a trade bloc. As the rising number of trade agreements is a crucial aspect of EU trade policy, one of the following chapters is dedicated to this issue. Another major issue of trade policy is the rising worldwide use of trade defence barriers, such as anti-dumping (AD) actions¹¹.

The aim of this study is to provide economic insight to two empirical issues of the EU trade policies: the EU’s preferential trade agreements and its anti-dumping actions. In addition, the study analyses EU trade policy vis-à-vis developing countries. However, the study deals only with extra-European trade and, hence, not with intra-European trade.

The study is structured as follows: Chapter 2 gives an introduction on stylized facts of EU external trade over the past decade and an overview of how the EU Directorate-General Trade works. Chapter 3 describes EU trade policy towards developing countries. Before the fall of the iron curtain in Europe, economists called EU trade preferences a “pyramid of privileges”, as the fellow EU countries and EFTA countries received the greatest advantages, followed by the ACP and Mediterranean countries and finally, at the lower end of the pyramid, GSP (generalised system of preferences) countries, countries benefiting from the MFN (most favoured nation) principle¹², and non-members of the WTO.¹³ Nowadays, the ranking of trade preferences is considered to be much more varied and complicated which is why Jovanovic (2005, p. 558) calls the situation a “spaghetti bowl’ of trade deals”. From this perspective it is remarkable that in the seventies of the past century, MFN treatment was considered to be normal and the Lomé agreement was special, whereas nowadays standard GSP treatment is considered the norm or could be described as the bottom line of advantages, while free trade agreements or an improved ACP agreement are special and therefore grant favourable treatment to the exporting countries.¹⁴

⁸ See Laursen (2009), pp. 20-21.

⁹ See Hanson, B. T. (1998), p. 56.

¹⁰ See Laursen (2009), p. 21. The Uruguay Round resulted in substantial reductions of non-tariff barriers and tariffs, but also incorporated intellectual property rights and trade in services in GATT rules on trade.

¹¹ AD action is a collective term in order to describe the entire process of an AD procedure and therefore the combination of an AD investigation and the consecutive (possible) imposition of AD measures.

¹² According to Horn and Mavroidis (2001) the MFN clause “forbids [WTO] Members to discriminate between trading partners”. However, there are exceptions in particular for developing countries.

¹³ See Jovanovic (2005), p. 558.

¹⁴ See Stevens, Kennan (2000), p. 30.

Chapter 4 answers the question whether the recent European Union preferential trade agreements (a customs union with Turkey and several free trade agreements, with Chile and Mexico, for example) have increased trade with the contractual partners. This is carried out by looking at a panel data set covering the years 1994 to 2007. The chapter also presents separate analyses for each EU-15 country and contractual partner country to determine whether the majority of EU countries or contractual partner countries benefited from the agreements.

The European Union's anti-dumping actions are the theme of chapters 5 and 6. The empirical analysis aims to determine whether and how anti-dumping actions affect the trading pattern of the EU-15 (chapter 5). In particular, EU-15 imports from countries named in an anti-dumping investigation could change following the imposition of an anti-dumping measure. However, the measure may also have an impact on EU-15 internal imports or imports from non-named countries.¹⁵ Imports might also change as soon as the investigation begins, irrespective of whether an anti-dumping measure is finally imposed or not, which would be a trade-depressing effect. Anti-dumping actions give rise to a second question: which factors particularly influence the outcome of EU anti-dumping decisions? Anti-dumping decisions may depend on, for example, the amount (size) of imports from different countries, the GDP or GDP per capita of the countries named in the investigation, whether an industrial country, a future European Union member state, a country with a preferential trade agreement with the European Union or whether China is one of the named countries. Chapter 6 aims to answer this question. Chapter 7 then finally concludes.¹⁶

¹⁵ The term named countries is used in an anti-dumping investigation to define countries which are accused of dumping products, while non-named countries are countries which are at the same time not accused of dumping products.

¹⁶ Trade in services is not a part of this publication as only EU external trade policy with respect to goods is covered. Services may include, but are not limited to consulting, tourism and travel, postal services, telecommunications, trade in financial services. See D. Hanson (2010), pp. 38-39 for detailed examples.

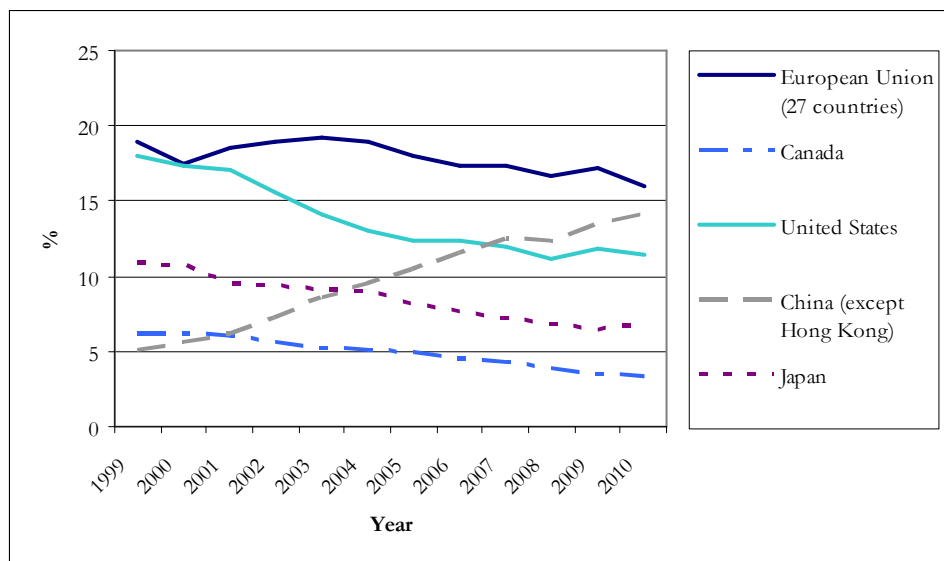
2 Some stylized facts about EU trade

This chapter gives an introduction to EU trade patterns and trade with the BRIC(K)¹⁷ countries, some notes on the EU's involvement in the WTO and Doha Round¹⁸, and finally describes the structure and competences of the EU Commission DG Trade and relevant stakeholders in EU trade policy.

2.1 EU-27 trade patterns between 1999 and 2010

The share of EU-27 trade in the world has been fluctuating over time; however, the EU has remained the most important trade bloc in the world, both with regard to exports and imports between 1999 and 2010. As can be seen in Figure 2.1 on exports, China has been catching up tremendously in the past decade. With an increase from about 5% of world exports to close to 15%, China's share almost tripled within just a decade. Over the same period, exports from the United States, Canada and Japan continuously declined and the countries were not able to keep their share in world exports as constant as the EU-27.

Figure 2.1: The share of EU-27 and other countries' exports in % of world exports



Source: Eurostat

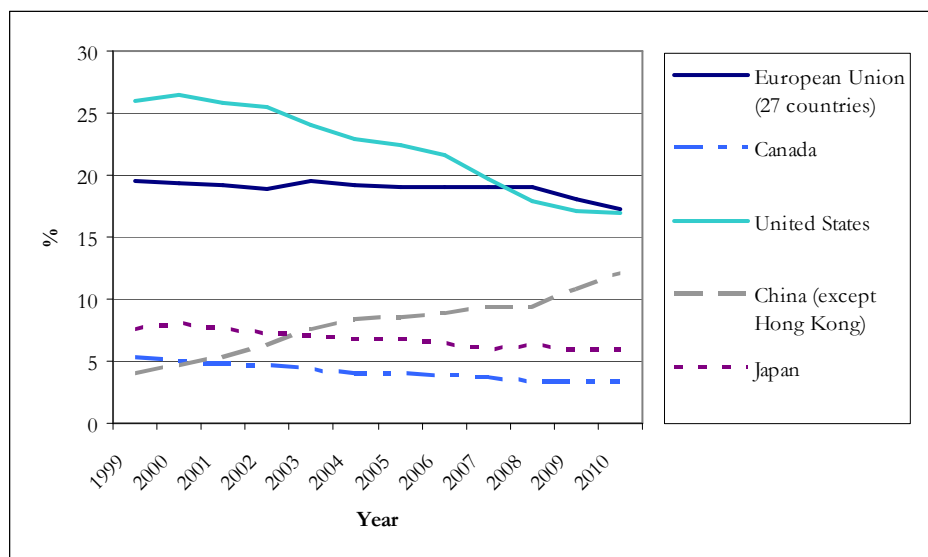
Considering the data on imports in Figure 2.2, the EU-27's imports were very stable, with only small fluctuations between 1999 and 2010. At the same time, the United States experienced a remarkable fall from over 25% to around 15% of world imports. Canada's and Japan's imports

¹⁷ BRIC(K): BRIC is an abbreviation for Brazil, Russia, India, and China. The K in brackets stands for South Korea. For simplicity it can also be written BRICK.

¹⁸ The Doha Round, also called Doha Development Agenda is the current WTO trade round, which has not been concluded yet.

only decreased insignificantly. China experienced a major increase in imports; however, imports did not rise as much as exports.

Figure 2.2: The share of EU-27 and other countries' imports in % of world imports



Source: Eurostat

The data from Figures 2.1 and 2.2 clearly show that the EU is a leading trade power in the world, as it concentrates a major share of world trade.

While Extra-EU-27 exports (this means exports of the 27 different EU countries to countries outside the EU, for example to the United States, Morocco or China) were € 1349 billion, Intra-EU-27 exports (referring to exports of the 27 different EU countries to other EU countries, for example exports from Germany to France, or from Spain to the United Kingdom) amounted to € 2540 billion in 2010. Internal exports to countries inside the EU are therefore still about twice as important, but the share of external exports is too remarkable to be neglected. Extra-EU-27 imports (imports of the 27 different EU countries from outside the EU-27, for example from China or the United States) amounted to € 1509 billion, while Intra-EU-27 imports (for example German imports from France, or Spanish imports from the UK) amounted to € 2468 billion.

Table 2.1 shows the 50 most important trading partners of the EU-27 in 2010, both for imports and exports. For imports, it is hardly surprising that China and the United States lead the table, followed by Russia, Switzerland, Norway, Japan, and Turkey. The same seven countries, albeit in a slightly different order, are also the leading trading partners in terms of EU exports. The United States clearly lead the ranking of the most important export trading partners, with 18.0% compared to China with 8.4%, while China is the leading import partner with 18.7% and the United States rank second with 11.3%.

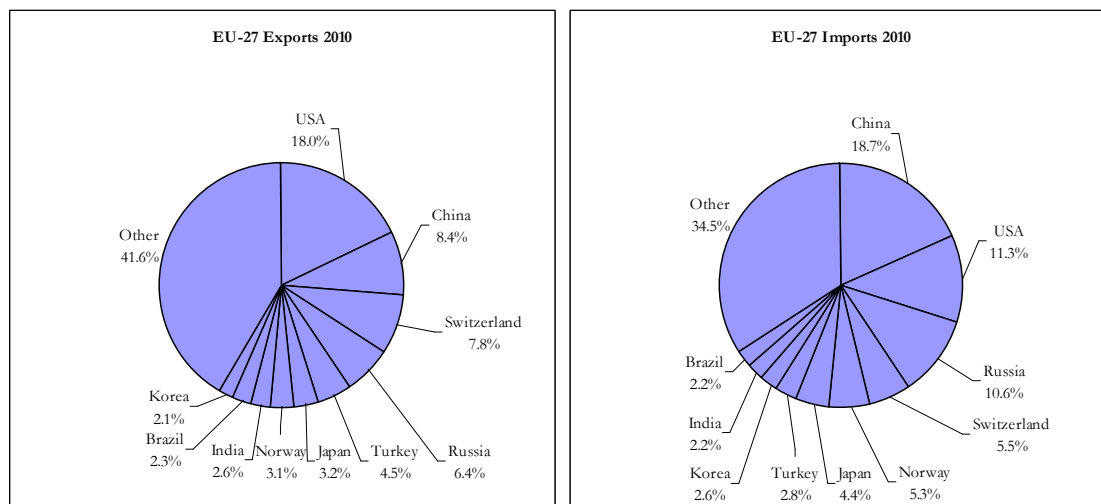
Table 2.1: The 50 most important trading partners of the EU-27 in 2010

Import trading partners				Export trading partners			
Rank	Country	€ billion	%	Rank	Country	€ billion	%
1	China	282.531	18.7%	1	United States	242.320	18.0%
2	United States	170.390	11.3%	2	China	113.272	8.4%
3	Russia	160.062	10.6%	3	Switzerland	105.218	7.8%
4	Switzerland	83.189	5.5%	4	Russia	86.131	6.4%
5	Norway	79.435	5.3%	5	Turkey	61.253	4.5%
6	Japan	65.781	4.4%	6	Japan	43.844	3.2%
7	Turkey	42.324	2.8%	7	Norway	41.896	3.1%
8	South Korea	39.234	2.6%	8	India	34.797	2.6%
9	India	33.228	2.2%	9	Brazil	31.391	2.3%
10	Brazil	32.543	2.2%	10	South Korea	27.937	2.1%
11	Libya	29.227	1.9%	11	United Arab E.	27.716	2.1%
12	Taiwan	24.132	1.6%	12	Hong Kong	26.937	2.0%
13	Algeria	21.069	1.4%	13	Australia	26.773	2.0%
14	Malaysia	20.807	1.4%	14	Canada	26.638	2.0%
15	Canada	20.198	1.3%	15	Singapore	24.374	1.8%
16	Singapore	18.700	1.2%	16	Saudi Arabia	23.196	1.7%
17	South Africa	17.955	1.2%	17	South Africa	21.442	1.6%
18	Thailand	17.321	1.1%	18	Mexico	21.342	1.6%
19	Saudi Arabia	16.301	1.1%	19	Ukraine	17.352	1.3%
20	Kazakhstan	15.943	1.1%	20	Algeria	15.546	1.2%
21	Nigeria	14.506	1.0%	21	Egypt	14.855	1.1%
22	Iran	14.464	1.0%	22	Taiwan	14.778	1.1%
23	Indonesia	13.901	0.9%	23	Israel	14.405	1.1%
24	Mexico	13.188	0.9%	24	Morocco	13.681	1.0%
25	Ukraine	11.466	0.8%	25	Iran	11.312	0.8%
26	Israel	11.087	0.7%	26	Malaysia	11.247	0.8%
27	Hong Kong	10.672	0.7%	27	Tunisia	11.097	0.8%
28	Australia	9.794	0.6%	28	Nigeria	10.654	0.8%
29	Azerbaijan	9.712	0.6%	29	Croatia	10.310	0.8%
30	Vietnam	9.586	0.6%	30	Thailand	9.999	0.7%
31	Tunisia	9.533	0.6%	31	Serbia	7.426	0.6%
32	Chile	9.458	0.6%	32	Argentina	7.425	0.6%
33	Argentina	9.306	0.6%	33	Libya	6.703	0.5%
34	Qatar	7.892	0.5%	34	Belarus	6.620	0.5%
35	Morocco	7.737	0.5%	35	Indonesia	6.397	0.5%
36	Egypt	7.234	0.5%	36	Chile	6.035	0.4%
37	Iraq	7.130	0.5%	37	Qatar	5.323	0.4%
38	Bangladesh	6.690	0.4%	38	Kazakhstan	5.226	0.4%
39	United Arab E.	5.803	0.4%	39	Gibraltar	4.863	0.4%
40	Costa Rica	5.551	0.4%	40	Lebanon	4.718	0.3%
41	Philippines	5.404	0.4%	41	Angola	4.703	0.3%
42	Peru	5.188	0.3%	42	Vietnam	4.675	0.3%
43	Croatia	4.961	0.3%	43	Venezuela	4.133	0.3%
44	Colombia	4.743	0.3%	44	Kuwait	4.132	0.3%
45	Serbia	4.085	0.3%	45	Colombia	3.945	0.3%
46	Angola	3.853	0.3%	46	Philippines	3.740	0.3%
47	Pakistan	3.828	0.3%	47	Pakistan	3.730	0.3%
48	Venezuela	3.797	0.3%	48	Syria	3.653	0.3%
49	Kuwait	3.776	0.3%	49	Bosnia-Herzeg.	3.138	0.2%
50	Syria	3.599	0.2%	50	Oman	3.111	0.2%
Total	Extra EU27	1509.073	100.0%	Total	Extra EU27	1349.165	100.0%

Source: Eurostat

The ten most important EU-27 trading partners are shown graphically in Figure 2.3. China, the United States, Switzerland, and Russia are very important for EU external trade, together constituting almost half of EU-27 imports.

Figure 2.3: Share of selected EU-27 trading partners in total EU-27 trade, in 2010



Source: Eurostat

Table 2.2 shows the countries with which the EU-27 has the largest trade surpluses and deficits. Regarding the deficits, China is leading by far and is followed by Russia, Norway, Libya, Japan, and South Korea. It is apparent that there are a number of oil-exporting countries in the list (for example Russia, Norway, Libya, and Kazakhstan).

Table 2.2: The ten largest trade deficits and surpluses of the EU-27 with other countries in 2010 in € billion

Deficit		Surplus			
1	China	-169.26	1	United States	71.93
2	Russia	-73.93	2	Switzerland	22.03
3	Norway	-37.54	3	United Arab Emirates	21.91
4	Libya	-22.52	4	Turkey	18.93
5	Japan	-21.94	5	Australia	16.98
6	South Korea	-11.30	6	Hong Kong	16.27
7	Kazakhstan	-10.72	7	Mexico	8.15
8	Malaysia	-9.56	8	Egypt	7.62
9	Taiwan	-9.35	9	Saudi Arabia	6.90
10	Indonesia	-7.50	10	Canada	6.44

Source: Eurostat

At the same time, the EU-27 has a tremendous trade surplus vis-à-vis the United States, Switzerland, the UAE, and Turkey. Several countries with which the EU has a trade surplus have a free trade agreement or a customs union with the EU. Contrary to that, among those

countries with a deficit, there are only South Korea, which has a free trade agreement since 2011, and Norway. In total, however, the EU-27 has a trade surplus with the world as exports in 2010 were € 1,509,073 million, and imports were € 1,349,165 million (see Table 2.1 above).

2.2 Trade with the BRIC(K) countries

Trade between the European Union and the BRICK countries is of particular interest and important.¹⁹ It is important because the BRIC countries account for 33.7% of total EU-27 imports and 19.7% of total EU-27 exports (see Figure 2.4 and Table 3.1 below). South Korea adds another 2.6 percentage points to imports and 2.1 percentage points to exports, respectively, and is useful to be included not only because it is a weighty trading partner, but also because it has a free trade agreement with the European Union. In 2010, the European Union was the biggest trading partner for Brazil, India, China, and Russia, however not for South Korea where it ranks 4th in imports and 3rd in exports according to data from the DG Trade. Consequently, the European Union and the BRICK countries are mutually important for each other.

Considering trade relations with these countries is of particular interest due to their remarkable projected GDP (gross domestic product) growth, which might further increase their role as EU trading partners and consequently the importance of trade policy towards them. According to the International Monetary Fund's World Economic Outlook (IMF WEO September 2011), GDP of the five BRICK countries at PPP (purchasing power parity) as a share of the world total increased from 18.3% in 2000, to 27.0% in 2010 and is forecasted to reach 32.5% by 2016. Nevertheless, countries develop differently. Whereas South Korea's, Brazil's, and Russia's share will stay constant, China's and India's share in world GDP will increase enormously.

When analyzing the trade patterns of 1999-2010, it is obvious that both imports and exports increased remarkably, i.e., their share of EU-trade doubled within this short period of time (see Figure 2.4). This growth was primarily driven by Russian and Chinese exports and imports. It is remarkable that total BRICK imports are twice as large as BRICK exports, while imports from China account for half of BRICK imports.

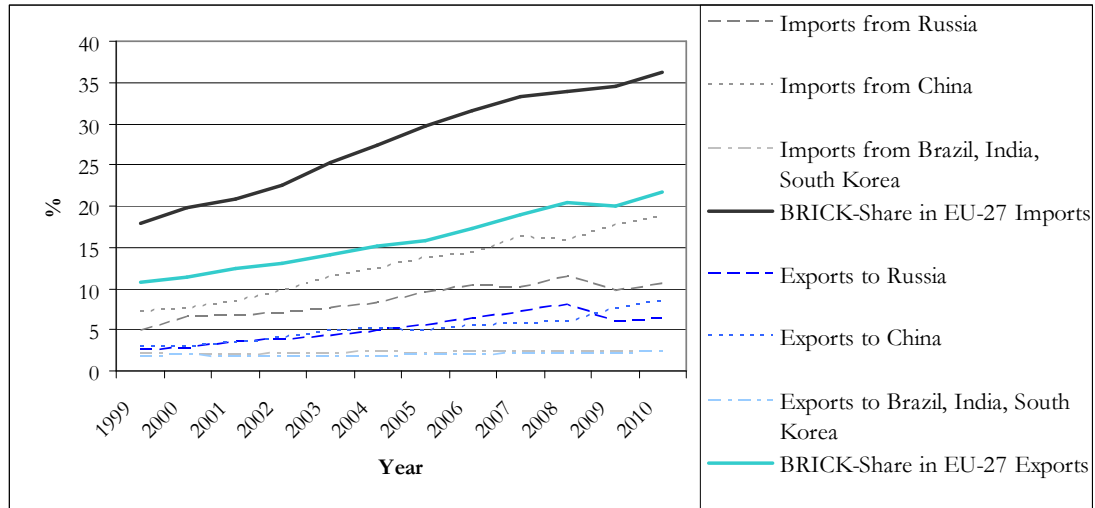
Trade policy towards the BRICK countries is various. The EU and South Korea signed a free trade agreement in 2011 that will be implemented gradually.²⁰ Brazil, Russia, China, and India benefit from the GSP. Leal-Arcas (2009, p. 96) considers the tariff preferences from the GSP system as not being very significant and therefore helpful for the BRIC countries, as “preference margins are not very large; because they do not affect sensitive goods; (...) [because of] graduation for product groups where competitiveness has increased (...) [and] because of

¹⁹ In this section, South Korea is considered alongside the BRIC countries because it is both a highly developed country and a free trade agreement has been signed with the EU very recently (2011), which makes it different from the other BRIC countries and renders it interesting for research.

²⁰ See European Commission, DG Trade (2011e), p. 4.

restrictive rules of origin”. In general, the BRIC countries do not enjoy strong trade preferences by the European Union. Still, Brazil, Russia and India are listed among the main beneficiaries of GSP preferences (Table 3.2 in chapter 3), but this may be due to the sheer size of the countries.

Figure 2.4: Share of BRICK-Trade in total EU-27 trade



Source: Eurostat; The data for Brazil, India and South Korea are shown in the figure in one line (unweighted average) for clarity as the data from the 3 countries are both very similar and constant.

The BRICK countries have very different trade interests vis-à-vis the European Union. While Brazil is a large agricultural producer and Russia primarily exports fossil fuels like oil and natural gas, China and South Korea export manufactured goods. Similarly, India exports manufactured goods and articles and machinery (SITC²¹ categories 6, 7, and 8) to the EU, according to Eurostat.

China is not only the most important and powerful trading partner of the BRICK countries (see Figure 2.4 above), but probably also the most controversial one. Problems occur for example in questions of “intellectual property rights (...) counterfeiting and product piracy (...) and China’s competitive advantage from poor social and environmental standards; and unfair subsidies to favoured national industries”²². Imports of textile products have also been the subject of an important dispute of recent years: At the end of 2004, the quota on textile and garment imports was abolished (so-called Multi-Fiber Agreement (MFA) – a complex set of rules and quotas applying to developing countries exporting textiles which thereby restricted trade with developed countries)²³ and as a consequence EU-15 imports doubled within a year.²⁴ It is hardly surprising that this led to pressure from EU producers to protect them against the sudden increase of imports from China. At that time it was possible to impose safeguards (quotas) on Chinese textile imports, because according to China’s WTO accession clause, other member states would be allowed to impose them for a transition period until the end of 2008 - and

²¹ The SITC (Standard International Trade Classification) system is used in trade statistics in order to classify trade in goods.

²² Leal-Arcas (2009), p. 110.

²³ See D. Hanson (2010), p. 36.

²⁴ See Men (2009), pp. 228-230, as a source for this paragraph.

indeed, safeguards were imposed. Finally, China and the EU implemented a monitoring system in early 2008, which is said to have worked satisfactorily.

It has to be stressed that China is the EU's largest import partner, which in turn means that China is strongly reliant on the European market (see Table 2.1 above). For Europe in turn, China is a crucial export market with large growth potential, even though in 2010 China ranked only second just ahead of Switzerland (rank 3) and after the United States (rank 1). Men (2009, p. 219) finds that it is important to build a long-term EU-China partnership because of the "increasing degree of interdependence and the [therefore implied] necessity of cooperation". Indeed, sustainable and mutually positive trade relations are very valuable for both countries.

When analysing Brazil, it has to be taken into account that Chile and Mexico have a free trade agreement with the European Union, which puts Brazil at a relative disadvantage.²⁵ Russia's exports are different compared to Brazil and China, because its exports to the EU are based on fossil fuels. More remarkably, in 2011 Russia decided to pave the way to join the WTO in 2012 after more than a decade of consultations, once all the necessary ratifications and legislative changes are carried out.²⁶ Russia ranks third in EU imports in 2010 and fourth in EU exports and is therefore one of the EU's most important trading partners (see Table 2.1). EU-27 imports from India are ranked 9th and exports to India 8th in 2010, while South Korea ranks number 8 (imports) and number 10 (exports). Therefore, India and South Korea have a very similar importance for the EU in trade. Of course, both countries are very different from each other. Non-tariff barriers (NTB) like import licensing, certification of products and quantitative restrictions, as well as tariffs are still a major issue in trade with India; however, negotiations between India and the EU about an FTA are on their way.²⁷ Between South Korea and the EU, an FTA already entered into force in 2011, with some remaining tariffs being lowered during a transition period.²⁸

2.3 The WTO and the Doha Round

The EU represents all of its member states in the WTO, even though all individual EU countries are members of the WTO as well, but "act as a single block".²⁹ Coordination amongst the individual EU countries is carried out through the EU Trade Policy Committee³⁰ and the EU Council of Ministers.³¹ The Ministerial Conference takes place on average every two years (e.g., Doha (2001), Cancun (2003), Hong Kong (2005), and Geneva (2008)) and is the most

²⁵ See Leal-Arcas (2009), p. 101.

²⁶ See European Commission, DG Trade (2012a).

²⁷ See European Commission, DG Trade (2012b).

²⁸ See European Commission, DG Trade (2011e), p. 4.

²⁹ See European Commission, DG Trade (2011a).

³⁰ "Before the adoption of the Lisbon Treaty the official name of this committee was the Article 133 Committee (...). This is now established in article 207. (...) [The Trade Policy Committee] provides a channel of information to the Commission on the preferences of the member states (...) [and] it directly monitors the Commission for the Council and transmits information to it". Crombez, Van Gestel (2011), p. 3.

³¹ See European Commission, DG Trade (2011a).

important body of the WTO, in which the EU is represented by the EU Trade Commissioner.³² The latest round of negotiations, ongoing since 2001, is called the Doha Round or Doha Development Agenda. This was preceded by the Uruguay Round, which was concluded in 1994 and implemented in the subsequent years. One very important part of the Uruguay Round was the creation of the WTO in 1995, succeeding the so-called GATT (General Agreement on Tariffs and Trade).

A study by CEPII (Centre d'Etudes Prospectives et d'Informations Internationales) in Paris on the benefits of a conclusion of the Doha Round finds that not only will countries and regions worldwide benefit through increased exports and economic growth, but they claim that it will also have a “systemic value in preventing excessive tariff hikes (...) [and] in curbing protectionism” and have tremendous effects through trade facilitation like reducing bureaucratic procedures (for example, in customs).³³ The EU aims at reducing tariffs for industrial goods, and can offer to reduce agricultural subsidies and tariffs; however, in turn it would also demand improved market access for its agricultural products from developing countries, change the rules of trade defence instruments, and protect the use of geographical indications (for example, French cheese originating in particular regions or wine).³⁴ In the 2008 WTO ministerial meeting there was a dispute on the treatment of agriculture in trade which is why discussions in the Doha Round are ongoing and progress in negotiations has come to a standstill.³⁵ Especially Brazil, a globally competitive agricultural producer (with 38% of its total exports accounted for by the agricultural sector), would be able to increase exports.³⁶ The standstill might be one reason for the European Union, although not the only reason, to proceed on a bilateral basis (with preferential trade agreements) rather than with multilateral trade agreements.

Free trade agreements are characterized by various benefits as well as downsides. On the one hand, they can be considered as a step in the direction of more free trade.³⁷ However, on the other hand, too many free trade agreements could prevent the progress of multilateral trade liberalisation through the WTO and may also lead to a fragmentation of trade preferences and protection against third countries which are not included in one of the free trade agreements.³⁸ One major factor that additionally increases fragmentation is that free trade agreements have a phase-in period (possibly up to a decade or more) and different rules of origin.³⁹ For example, while the recent FTA between the EU and South Korea lowers tariffs for the majority of products (for example cars, but also a wide range of products such as agricultural ones) at the date of entry into force (2011), the lower tariffs do not apply to some products until 2016 or

³² See European Commission, DG Trade (2011a).

³³ See European Commission, DG Trade (2011b).

³⁴ See European Commission, DG Trade (2011c).

³⁵ See European Commission, DG Trade (2011d), p. 4.

³⁶ See Deutsch (2011), p. 17.

³⁷ See Panagariya (2002), pp. 1424-1425.

³⁸ See Panagariya (2002), pp. 1424-1425.

³⁹ See Panagariya (2002), p. 1425.

2019.⁴⁰ Nevertheless, free trade agreements can be considered as a valuable step towards free trade.

2.4 The DG Trade and stakeholders in European Union trade policy

Even though the member states contribute through the Council of Ministers and the European Parliament has to approve the proposals,⁴¹ the EU and therefore particularly the DG Trade has “exclusive power” in the following areas:⁴²

- trade in goods
- trade in services
- foreign direct investment
- trade aspects of intellectual property
- other possible aspects concerning trade policy, for example capital movements

This implies that member states have limited influence on these matters since they cannot pass legislation on trade, as it is the European Commission that initiates laws, and the Council of Ministers and the European Parliament which pass the laws.⁴³ However, this also implies that the member states have to support the position of the DG Trade, because otherwise a proposal of the DG Trade might be rejected in the Council.⁴⁴ The Lisbon Treaty led to changes in the way EU trade policy is conducted. Primarily, the European Parliament gained influence as it is co-legislator together with the Council and trade agreements and trade legislation such as anti-dumping laws have to pass Parliament.⁴⁵ In general, spheres of influence for the EU increased, for example with regard to trade in services and intellectual property.⁴⁶ Finally, unanimity in voting is required only with regard to limited fields such as social, educational or health services and cultural/audiovisual services, while qualified majority voting is now the dominant rule.⁴⁷

Two major factors limit the influence of the DG Trade. Firstly, the fields of responsibilities between the different EU directorate-generals are sometimes not clear-cut, which makes stringent coordination difficult and limits the power of the EU DG Trade. D. Hanson (2010, p. 196) describes the DG Trade as „the guardian of the EU’s commitment to free trade”. Nevertheless, the DG Trade has little influence on DG Development or DG Health. These DGs could propose the implementation of laws at odds with the DG Trade’s commitment to free trade.⁴⁸

⁴⁰ See a study of the European Commission, DG Trade (2011e) on the EU-Korea FTA for more details.

⁴¹ See Laursen (2009), p. 19.

⁴² See European Commission, DG Trade (2011f).

⁴³ See European Commission, DG Trade (2011f).

⁴⁴ In case the EU’s competences (in trade matters) are disputed, like back in 1994, the European Court of Justice ruled that it is the EU that has “exclusive powers” with regard to trade in goods. See Jones (1996), p. 243.

⁴⁵ See European Commission, DG Trade (2011g).

⁴⁶ See European Commission, DG Trade (2011g).

⁴⁷ See European Commission, DG Trade (2011g).

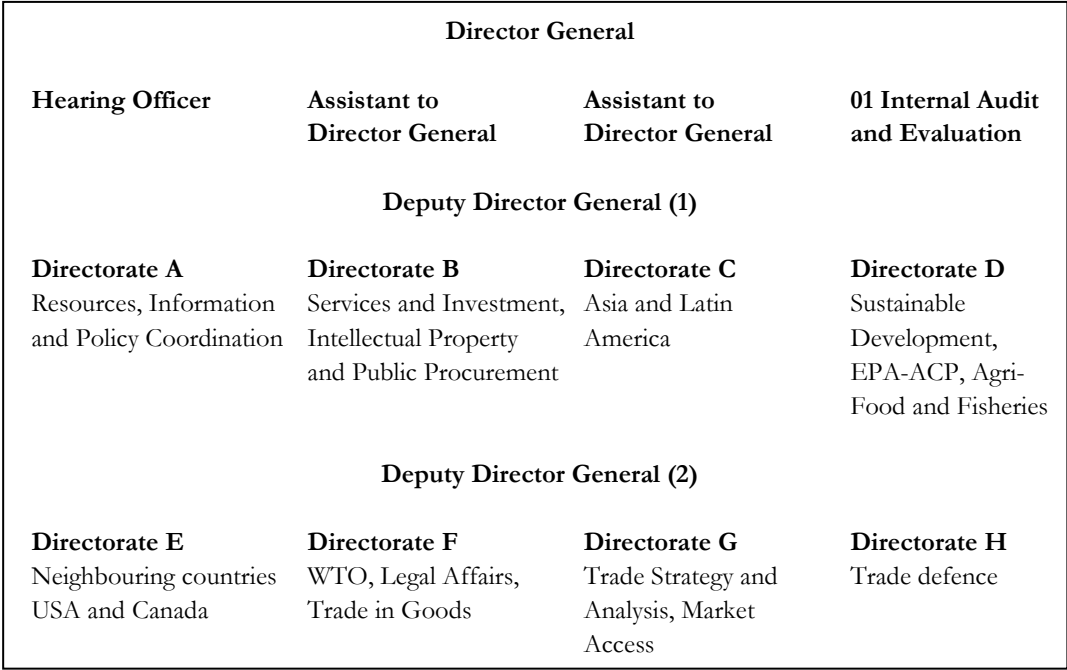
⁴⁸ See D. Hanson (2010), p. 196.

A second factor that is important for trade policy is lobbying, whose effectiveness can be considered as significant because of the non-transparent decision-making in issues related to trade in the EU.⁴⁹ Even though Woll (2006) finds that “Without the backing of their home governments, protectionist lobbying that impedes European market integration is unsuccessful at the supranational level”, she also notes that the European Commission aims to establish contacts with firms, as the firms’ experience is a primary source on market and trade barriers and is helpful for designing the own trade policy. Lobbying therefore can have a positive effect in addition to a negative effect. This is very well described by D. Hanson (2010, p. 5), who claims that

“[i]n politics, advantages generally go to the well-organized and strong. Groups under economic pressure are likely to use their political connections to redress a lack of market strength. (...) Relatively minor defections from a commitment to free trade may provide substantial relief to the passionate few with little injury to the modest many. However, a government that shields its citizens from too many of the shocks from the free market may end up by eliminating the benefits of trade as well.”

Figure 2.5 gives an overview of the organisation of the EU DG (directorate general) Trade and the focus of the different directorates. The trade commissioner, who is a member of the EU commission, heads the EU DG Trade.

Figure 2.5: Organisation chart of the EU DG Trade



Source: EU DG Trade as of February 2012

As EU trade policy towards developing countries is a cornerstone of EU trade policy and the work of the DG Trade, the following chapter is dedicated to this issue.

⁴⁹ See Küblböck, Six (2006), p. 12.

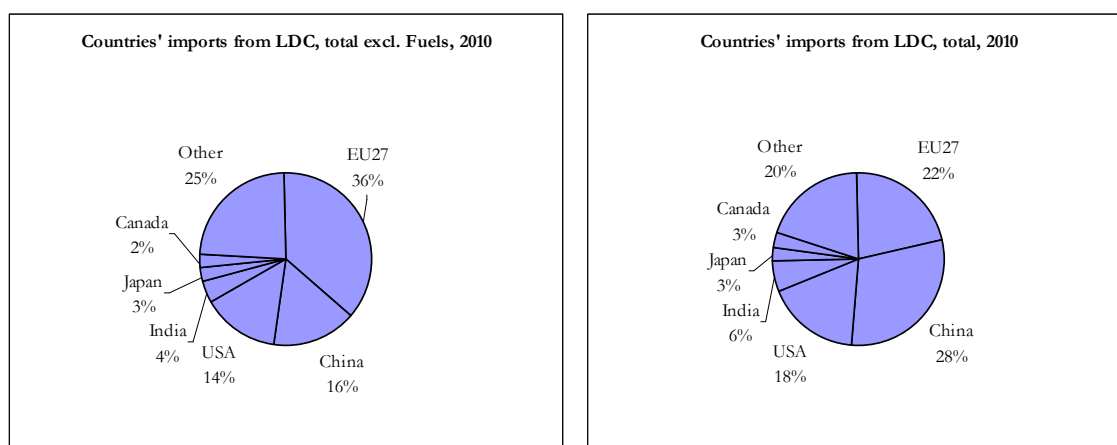
3 EU trade policy vis-à-vis developing countries

3.1 Introduction

“Trade is the central component of the EU’s relationship with the South. Based on their own individual and collective experience, the EU and other Northern countries believe that trade is a reliable vehicle for stimulating economic growth and development.”⁵⁰

The European Union has the largest share of trade with least developed countries (LDC) compared to other developed countries in the world⁵¹ and a crucial share with developing countries in general (see Figure 3.1 and Table 3.1 below for data). This makes EU trade policy towards developing countries crucial for their past and future trade development. On the other hand, LDCs accounted only for 1.8% of EU-27 exports in 2010.

Figure 3.1: Import shares of selected countries from LDCs in 2010



Source: European Commission, DG Trade (2012c).

It is worth examining countries’ imports from LDCs⁵² both with data including fuel and excluding fuel, as this makes a tremendous difference for the shares in trade. In 2010, the EU-27 is the second biggest trading partner of the least developed countries with 22%, second only

⁵⁰ Barbarinde (2008), p. 54.

⁵¹ The European Union is considered as one country or entity as trade policy is integrated at such a high level which justifies this designation. It is common in literature to compare the European Union to other countries like the United States, China or Japan and not necessarily or only to other trade blocks, see for example Laursen (2009) or D. Hanson (2010).

⁵² LDC (least developed countries) are defined by the EU DG Trade as the following countries: Afghanistan, Angola, Bangladesh, Benin, Bhutan, Burkina Faso, Burundi, Cambodia, Central African Republic, Chad, Comoros, Congo (Dem. Rep.), Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gambia, Guinea, Guinea-Bissau, Haiti, Kiribati, Laos, Lesotho, Liberia, Madagascar, Malawi, Maldives, Mali, Mauritania, Mozambique, Myanmar, Nepal, Niger, Rwanda, Sao Tome and Principe, Senegal, Sierra Leone, Solomon Islands, Somalia, Sudan, Tanzania, Timor Leste, Togo, Tuvalu, Uganda, Vanuatu, Western Samoa, Yemen, and Zambia. Cape Verde graduated from LDC status in 2008.

to China, which has a share of 28% (see Figure 3.1). However, if one excludes fuels, the EU-27 account for 36%, which clearly exceeds other countries' shares in trade, including the United States and China. The EU-27 countries are therefore the largest and most important trading partner for the least developed countries and are more focused on imports other than oil. Conversely, one can also draw the conclusion that China's interest in LDCs is to a large extent due of fuels, whereas this is by far less the case for the EU-27.

In general, trading partners receive very different treatment compared to one another. For example, both the EU and the United States do not grant the developing country status to China even though China fulfils certain criteria of a developing country, most probably because of the fact that imports from China are already comparably high and the EU and the United States do not want to encourage this development.⁵³ Indeed there exists the concept of a "hierarchy of developing countries"⁵⁴. Some countries, in particular the ACP countries, enjoy greater preferences than nations such as Brazil. Brazil is a good example as it has a competitive agricultural industry that is considered to be a potential threat to EU agricultural producers. Brenton et al. (1997, p. 325) state that

"[t]he treatment of countries is not independent of the treatment of industries, since the choice of countries upon which the Union is willing to confer preferences, as well as the extent of those preferences, depends partly upon the extent to which the country is perceived to be a potential threat to the Union in the sensitive industries. (...) [T]he [European] Union has been concerned to maintain and to promote trade relations with those developing countries with which its members have had close cultural, economic, and political links; or with countries with which it wishes to establish such links."

In addition to the different trade preferences, the EU provides funds for the infrastructure of developing countries called "Aid For Trade".⁵⁵ This is meant to facilitate and improve trade of developing countries, primarily by investments in infrastructure and by institutional capacity building, in order to allow the developing countries to exploit possible advantages within the trade agreements.⁵⁶ ACP countries also benefit from this type of support, for example in order to comply with SPS barriers to trade (Sanitary, Phytosanitary⁵⁷ and biotechnology), even though aid is not limited to this field only.⁵⁸ "Aid For Trade" is however not solely an instrument of the DG Trade, but embedded in EU official development assistance (ODA).⁵⁹

Different developing countries receive different treatment and trade preferences by the European Union. One can primarily distinguish between the ACP countries (chapter 3.1) and countries in the GSP system (GSP, GSP+ and EBA agreement; see chapter 3.2).

⁵³ See Brenton et al. (1997), p. 318.

⁵⁴ Brenton et al. (1997), p. 325.

⁵⁵ See European Commission, DG Trade (2009), p. 1.

⁵⁶ See European Commission, DG Trade (2009), p. 1.

⁵⁷ An example for sanitary or phytosanitary barriers to trade is for example the refusal of import of organisms which are genetically modified.

⁵⁸ See European Commission, DG Trade (2011h).

⁵⁹ See European Commission, DG Trade (2009), p. 2.

3.2 Trade preferences for ACP countries

This chapter describes the development from the early Yaoundé and Lomé agreements to the Cotonou and Economic Partnership Agreements (EPA), but also provides stylized facts on EU trade with ACP countries.

3.2.1 The Yaoundé and Lomé agreements

The majority of European Union founding members had colonial ties with Africa, the Caribbean and the Pacific and therefore long-lasting trade relations and an interest in preserving those special relations even during the time of decolonisation. The Treaty of Rome, signed in 1957, allowed for the association of non-European countries and was the basis of future cooperation.⁶⁰ Then, in 1963, an agreement on aid and trade preferences was signed between the EU and 18 African states including Madagascar (Yaoundé I, time period 1964-1969), which was followed by a second agreement, Yaoundé II (1969-1975) that was very similar to Yaoundé I, but provided increased funding for aid.⁶¹ Nevertheless, already during this time both EU imports and exports with the Yaoundé countries fell from around 5% to around 3% of total EU imports and exports, which is on the one hand associated with the relative decline of prices of primary commodities compared to manufactured goods at that time and on the other hand with the rising importance of other trading partners for the EU.⁶²

When the UK joined the EU in 1973, the UK's former colonies in Africa, Asia, the Caribbean and the Pacific were supposed to be granted the same opportunities as the African states in Yaoundé I and II, but the idea was also to act against the downward trend in mutual trade occurring persistently despite the Yaoundé agreements.⁶³ Thus, the Lomé agreements came into being: Lomé I (1975-1980, 45 countries), Lomé II (1980-1985, 57 countries), Lomé III (1985-1990, 64 countries), and Lomé IV (1990-2000, 68-71 countries).⁶⁴ Even though these agreements covered an increasing range of issues and nearly all ACP countries' goods were basically free of duties or quotas (without necessarily granting reciprocity vis-à-vis the EU), it did not apply to future industrial products that were at that time not being exported (and therefore covered by the rules) and to a range of agricultural products, which are in competition with agricultural products from the EU.⁶⁵ At first sight the preferences consequently look more beneficial than they really are. Additionally, more than a decade ago, only about 10 products made up 60% of total ACP exports to the EU,⁶⁶ so the range of products is not very large.

⁶⁰ See European Commission, DG Development and Cooperation (2011a).

⁶¹ See European Commission, DG Development and Cooperation (2011a) and Jovanovic (2005), pp. 532-533.

⁶² See Jovanovic (2005), p. 533.

⁶³ See Jovanovic (2005), p. 533.

⁶⁴ See European Commission, DG Development and Cooperation (2011a, b).

⁶⁵ See Jovanovic (2005), p. 534.

⁶⁶ See Panagariya (2002), p. 1426.

It is important to note that, in contrast to the Yaoundé agreements, the Lomé agreements were non-reciprocal, i.e., developing countries were not required to grant to the EU countries the same trade rights granted to them by the EU.⁶⁷ Additionally, even though funds allocated to programs were increased over time, so did the number of ACP countries, which is why the existing funds per country did not rise substantially.⁶⁸ A very remarkable aspect of the Lomé agreements was the introduction of the Stabex (“Stabilisation of Export Earnings for Agricultural Commodities”) system, which supports countries if their earnings on commodities represent at least a relevant, small share of total exports (minimum of 5%), or if export earnings declined by 4.5% of the reference level⁶⁹ (for least developed ACP countries there is even a lower threshold of 1 percent).⁷⁰ The Stabex system had several advantages, such as stabilisation of prices for the developing countries, but it also had a number of shortcomings. For example, even though the system included an increasing list of different agricultural commodities, funds were spent on only a small number of commodities (for example, tropical beverages, oils, fats; between 1996 and 2000 € 1.8 billion were disbursed in total) and there was a long time lag between the disbursement of funds and the actual loss in export earnings.⁷¹ This led some researchers to conclude that, because of the enormous time lag, the effect of the Stabex system could even be considered “pro-cyclical”, which would be exactly the opposite of its original intention.⁷² The Lomé IV agreement differed from the previous Lomé agreements and went beyond conventional ACP agreements, as it included clauses on respecting not only the environment, but also human rights, and because non-compliance with the conditions could result in withdrawal of granted preferences.⁷³

The situation of Lomé and Post-Lomé in the year 2000 can be described in a way that the EU is “more demanding than it was ever before”, which implies a shift from non-reciprocity to reciprocity of trade preferences and the increase of conditionality for receiving preferences (for example, human rights, corruption or good governance).⁷⁴ This also brings up the question whether mutual free trade has greater positive effects for developing ACP countries than non-reciprocal preferences, because ACP countries would opt for keeping the old rules and dissent with the new rules, as Elgström (2008) calls it: “preserving the ‘spirit of Lomé’”, while the EU apparently desires to change the cooperation and is in a more powerful position to do so.

There are a couple of reasons why the ACP countries’ bargaining power is minor compared to that of the EU and has been decreasing. Firstly, it has to do with the EU being a very important and dominant trading partner for the ACP countries but not vice versa. Secondly, it is because the historical enlargement of the EU to Eastern Europe has somewhat shifted the EU’s regional

⁶⁷ See Brenton et al. (1997), p. 326.

⁶⁸ See Jovanovic (2005), p. 537.

⁶⁹ According to Jovanovic (2005), p. 567, the reference level is based on the average of the six previous years, excluding both the year with the lowest and with the highest figures.

⁷⁰ See Jovanovic (2005), p. 538.

⁷¹ See Jovanovic (2005), p. 538.

⁷² See Collier (2008), p. 33, citing Hermann et al. (1990).

⁷³ See Panagariya (2002), p. 1420.

⁷⁴ See Elgström (2008), p. 73.

focus, priorities and resources. And thirdly, it is also due to decreasing MFN tariffs eroding the preferences that ACP countries have with regard to the rest of the world.⁷⁵

3.2.2 The Cotonou agreement

The Cotonou agreement replaced the Lomé IV agreement in 2000, while the number of involved ACP countries rose to 75 and the Stabex system was abandoned.⁷⁶ The Cotonou agreement went beyond the clauses on environment and human rights of the Lomé IV agreement and had a much wider agenda.⁷⁷ This was including, but not limited to, questions of corruption, democracy or intellectual property rights.⁷⁸ By including these additional topics, non-reciprocal trade preferences become reciprocal, as developing countries have to cooperate with the EU in different fields and questions.⁷⁹ On the other hand it is a response to the criticism on the Lomé agreement that for example non-compliance with rules and cooperation with authoritarian regimes would not lead to major consequences.⁸⁰

The Cotonou agreement is a comprehensive agreement that, in principle, designs and formulates relations between the EU and ACP countries until the year 2020 and is also the basis of the EPAs⁸¹, the so-called economic partnership agreements.⁸² Within this twenty year timeframe, which came into force in 2003, the Cotonou agreement had a first revision in 2005 (entering into force in 2008), followed by a second revision, which was signed in 2010: This is possible because of a revision clause that is applicable every five years.⁸³ In 2011, 79 ACP countries were part of the Cotonou agreement, whereas Cuba has not signed the agreement, which reduces the number to 78 countries with South Africa not benefiting from all possible provisions.⁸⁴ The precise number of countries is, however, subject to frequent changes over time and has to be treated with caution. Also, during the time between negotiations, signing and entering into force, additional countries may have joined - or left.

The majority of ACP countries is still located in Africa, followed by the Caribbean and the Pacific. In the past years it was proposed to differentiate more between the different ACP regions, since the Caribbean and Africa differ both economically and geographically, as do the different African sub-regions.⁸⁵ This approach was finally carried out in the economic partnership agreements (EPA).

⁷⁵ See Elgström (2008), pp. 69-70 for the arguments in this paragraph.

⁷⁶ See European Commission, DG Development and Cooperation (2011b) and Jovanovic (2005), p. 539.

⁷⁷ See Fontagné et al. (2008), p. 34.

⁷⁸ See Fontagné et al. (2008), p. 34.

⁷⁹ See Panagariya (2002), p. 1428.

⁸⁰ See Küblböck, Six (2006), pp. 18-19.

⁸¹ Economic partnership agreements explicitly aim to enhance regional cooperation between the ACP sub-groups and are a step towards more customized solutions for the ACP countries. They contain simplified rules of origin and are of a reciprocal nature and not granted unilaterally by the EU. Details are outlined further below.

⁸² See European Commission, DG Trade (2011i).

⁸³ See European Commission, DG Development and Cooperation (2011c).

⁸⁴ See European Commission, DG Development and Cooperation (2011c).

⁸⁵ See Elgström (2008), p. 75.

3.2.3 Economic Partnership Agreements and stylized facts on EU trade with ACP countries

EPAs aim to abolish quotas and duties on exports from ACP countries, while at the same time ACP countries have between 15 to 25 years for introducing the new agreements for goods from the EU and the ACP countries may exclude very sensitive goods.⁸⁶ This implies that EPAs are of a reciprocal nature in the long run, in contrast to the Cotonou agreement, which is unilaterally granted by the European Union. EU exporters should probably benefit greatly from this, even though it will take more than a decade for the trade preferences to be implemented fully. As a consequence, ACP countries may suffer losses in tariff revenues, when tariffs are lowered year by year. At the same time, one can expect or assume that through better economic development and diversification these losses can be compensated. Apart from granting trade preferences, EPAs also aim to provide comprehensive support to the ACP countries with regard to, for example, complying with EU standards on food safety or fostering trade among the ACP countries, as trade volumes among these countries are less than their trade with the EU.⁸⁷ This is also a problem that applies to other regions in the world outside the ACP countries, such as in North Africa, where all the five countries trade extensively with the European Union, but where trade volumes among themselves are very low.⁸⁸ In order to be compliant with WTO rules (GATT Article XXIV)⁸⁹, EPAs are reciprocal, unlike unilateral trade preferences towards developing countries such as the GSP. According to the interpretation of reciprocity by the European Union, mutual trade (all trade flows) has to be liberalised by 90%, both regarding tariff lines and the total volume of mutual trade.⁹⁰

The 90% criterion for trade liberalization, however, leaves room for interpretation, as the EU could liberalize its trade more (95%) or even completely (100%) vis-à-vis the relevant group of ACP countries.⁹¹ A trade deficit or surplus between the two countries can provide the ACP countries with even greater advantages. Assuming, for example, that one developing country imports products worth € 100 million from the EU and exports products worth € 140 million, this results in a trade surplus of € 40 million of the country and a total trade volume of € 240 million. If 90% of total trade are liberalised (€ 216 million out of € 240 million), but the EU does not apply any tariffs to the countries' exports (€ 140 million; 100% liberalisation) which enter the EU, this means that out of the imports (€ 100 million) of the country from the EU even more than the possible 80% can be protected, which results in a smaller liberalisation, i.e., 76% liberalisation (=24% protection; € 216 million - € 140 million = € 76 million) instead of 80% liberalisation (=20% protection). However, one restriction to this is that at least 90% of all

⁸⁶ See European Commission, DG Trade (2011).

⁸⁷ See European Commission, DG Trade (2011).

⁸⁸ See Mühlberger, Semmelmann (2010), p. 6.

⁸⁹ Article XXIV describes that "A free-trade area shall be understood to mean a group of two or more customs territories in which the duties and other restrictive regulations of commerce (...) are eliminated on substantially all the trade between the constituent territories in products originating in such territories". See WTO (2012b).

⁹⁰ See Fontagné et al. (2008), pp. 5-6.

⁹¹ This example is following an exercise of Fontagné et al. (2008), p. 38.

product lines have to be liberalised, which might hamper protectionist tendencies to some extent. Yet the country may rely heavily on a limited range of product lines.

EPAs are grouped into several negotiating regions: Southern African Development Community (SADC), Eastern and Southern Africa (ESA), East African Community (EAC), West Africa, the Pacific, the Caribbean and Central Africa.⁹² Thus, five out of seven regions are comprised of African countries and the ACP's focus is clearly still on Africa. The Caribbean countries are called Cariforum states; these have an EPA (designated as free trade agreement by the WTO) with the EU which entered into force on the 1st of November 2008. EPAs also aim to increase regional integration within the several negotiating regions in Africa, the Caribbean and the Pacific, as mentioned above. Countries may join the EPA as a group or on an individual basis, but there is of course no obligation to join an EPA at all.⁹³ However, the alternatives may be less beneficial, as the GSP system in general has for example much stricter rules of origin and not all countries are eligible for the generous EBA (Everything But Arms agreement), which requires LDC status for eligibility.

In 2011, the DG Trade published a memorandum containing a proposal on how to proceed with the implementation of EPAs.⁹⁴ This is due to the fact that previous trade preferences from the Cotonou agreement expired in 2007, but 36 ACP countries had not yet implemented or even signed an Economic Partnership Agreement; they were allowed to continue exporting duty free to the European Union according to the so-called "Market Access Regulation", which fills the gap between the Cotonou agreements and the EPAs.⁹⁵ Half of the 36 ACP countries, which were negotiating EPAs, are about to ratify their agreements (as of early 2012) and would not be affected by the expiring market access regulation, while the other half of ACP countries is composed of three groups (18 countries):⁹⁶

- LDCs, which could make use of the Everything But Arms agreement (9 countries) and consequently would still experience a tariff regime that is very favourable to them.
- The second group of low to middle income countries could partake in the renewed GSP system.
- Only two upper middle-income countries, Botswana and Namibia, would lose their benefits. However, they could proceed with negotiations of the Economic Partnership Agreement and therefore enjoy trade preferences again.

The final solution has not been reached, but the classification of countries is a valuable example how different the progress within the group of ACP countries can be.

⁹² See European Commission, DG Trade (2011i).

⁹³ See Fontagné et al. (2008), p. 35.

⁹⁴ See European Commission, DG Trade (2011k).

⁹⁵ See European Commission, DG Trade (2011k), p. 1.

⁹⁶ The classification of countries is based on European Commission, DG Trade (2011k), pp. 1-2.

An issue that has always remained critical is the question of imports of sugar, rice and bananas. This is shown by the fact that in the Everything But Arms (EBA) initiative, described further below, sugar, rice and bananas were the only goods – except for arms and ammunition of course – that were subject to a more restricted treatment with regard to temporary transition periods. Bananas, for example, were the cause of a long-term dispute between the EU, the US and other countries, particularly Latin American ones, due to the fact that the EU tried to protect ACP producers, as some of them almost exclusively export bananas. On the one hand these countries would possibly face fundamental economic problems in case their trade preferences were withdrawn⁹⁷; on the other hand, however, it does not seem to be recommendable to support the export dependency on a single agricultural good.

Table 3.1: EU-27 exports to and imports from different regions in 2010⁹⁸

EU-27 Imports from			EU-27 Exports to		
Aggregate	€ million	%	Aggregate	€ million	%
ACP	64,793.1	4.3%	ACP	68,722.2	5.1%
Andean Community	12,198.6	0.8%	Andean Community	7,905.9	0.6%
ASEAN	86,373.8	5.8%	ASEAN	60,635.1	4.5%
BRIC	505,863.7	33.7%	BRIC	265,708.2	19.7%
CACM	7,576.1	0.5%	CACM	4,504.6	0.3%
Candidate Countries	48,616.5	3.2%	Candidate Countries	73,897.7	5.5%
CIS	200,474.7	13.3%	CIS	123,694.2	9.2%
EFTA	167,022.8	11.1%	EFTA	150,030.1	11.1%
Latin American Countries	90,034.3	6.0%	Latin American Countries	84,013.5	6.2%
MEDA (excl EU and Turkey)	60,624.3	4.0%	MEDA (excl EU and Turkey)	80,733.3	6.0%
Mercosur	43,955.3	2.9%	Mercosur	40,104.0	3.0%
NAFTA	202,632.3	13.5%	NAFTA	290,074.1	21.5%

Source: European Commission, DG Trade (2011).

Examining Table 3.1 shows that ACP countries make up a relatively small share of EU-27 imports (4.3%) and exports (5.1%) even though this actually includes large countries like South Africa, which has a free trade agreement with the EU. Without South Africa the ACP share

⁹⁷ See D. Hanson, p. 114.

⁹⁸ EFTA: Iceland, Liechtenstein, Norway, Switzerland; Candidate Countries: Croatia, FYR of Macedonia, Turkey; Andean Community: Bolivia, Colombia, Ecuador, Peru; CIS: Armenia, Azerbaijan, Belarus, Georgia, Kyrgyzstan, Kazakhstan, Moldova Republic of, Russian Federation, Tajikistan, Turkmenistan, Ukraine, Uzbekistan; CACM: Honduras, El Salvador, Nicaragua, Costa Rica, Guatemala, Panama; Mercosur: Argentina, Brazil, Paraguay, Uruguay; NAFTA: Canada, Mexico, United States; Latin American Countries: CACM, Mercosur, ANCOM, Chile, Cuba, Dominican Republic, Haiti, Mexico, Panama, Venezuela; BRIC: Brazil, Russia, India, China; ASEAN: Brunei Darussalam, Indonesia, Cambodia, Lao People's Democratic Republic, Myanmar, Malaysia, Philippines, Singapore, Thailand, Vietnam; ACP: 79 countries; MEDA (excl EU & Turkey): Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, Occupied Palestinian Territory, Syrian Arab Republic, Tunisia. Source: European Commission, DG Trade (2011).

would be 3.1% of imports and 3.5% of exports.⁹⁹ Regarding the different export products and excluding South Africa in the statistics for the moment, EU-27 imports from ACP countries consist, for example, of mineral fuels (SITC 3, 52.4%), food and live animals (SITC 0, 19.9%) and crude materials (SITC 2, 7.7%). This together accounts for exactly 80% of imports and shows that imports from the ACP countries consist primarily of commodities and agricultural products, while the EU-27 countries export machinery and equipment (SITC 7, 29.5%), mineral fuels and related materials (SITC 3, 25.4%), manufactured items (SITC 6 & 8, 24.0%), and only 4.9% food and live animals (SITC 0).¹⁰⁰ One explanation for the ACP countries' difficulties in having more diversified exports could be their generally small domestic market with low economies of scale and few commodities (for example sugar, rice, oil, bananas, coffee) dominating the exports.¹⁰¹

Several aspects are dominant when analysing EU trade policy towards ACP countries. With the ongoing European Union enlargement and changing political environment over the past decades, trade policy towards ACP countries changed as well.¹⁰² Despite the advantageous trade preferences, ACP countries could not increase their share in EU imports, which might be due to limited economic development and the fact that their exports consist of agricultural rather than manufactured goods.¹⁰³ The guaranteed privileges towards the EU market might also have lowered the willingness to pursue a strategy to open up their own markets.¹⁰⁴ Whereas in the past, ACP countries were less heterogeneous, criticism can be raised towards the adoption of a "one size fits all" solution and whether it is the right approach for the ACP countries, as their economic structure varies to quite some extent.¹⁰⁵ Perhaps more customized solutions should be preferred. EPAs are a step in this direction as they differentiate more between the different ACP regions and can be considered as a positive step. Finally, Elgström (2008) calls the old Lomé agreements with non-reciprocity and no conditionality "a favourable deal". Even though difficult to predict hypothetically, one can to some extent doubt whether it was such a favourable deal and a blessing for the ACP countries. Jovanovic (2005, p. 552) claims that

"developing countries that remained out of such preference agreements did better in trade and exports to the EU than the ACP countries. The EU continues to import raw materials from ACP countries, while ACP countries import industrial commodities from the EU. Lomé and Cotonou have not changed these trends. This may have led some observers to look at the Lomé conventions and the Cotonou deal as a failure. However this conclusion may not be fully substantiated as certain ACP countries expanded the range of goods in exports".

The economies of countries in Asia, which did not receive similar trade preferences, actually performed better than ACP countries in the past decades.

⁹⁹ See European Commission, DG Trade (2011).

¹⁰⁰ Figures are from 2010. Source: European Commission, DG Trade (2011).

¹⁰¹ See Jovanovic (2005), p. 536.

¹⁰² See Barbarinde (2008), p. 62.

¹⁰³ See Brenton et al. (1997), p. 328.

¹⁰⁴ See Jovanovic (2005), p. 560.

¹⁰⁵ See Collier et al. (2008), p. 43.

3.3 The EU's Generalised System of Preferences for trade with developing countries

The generalised system of preferences (GSP) is applicable to a much wider range of countries than the ACP countries and consists of three regimes (see Table 3.2 for an overview):

- The “standard” GSP (section 3.3.1)
- GSP+ (section 3.3.2)
- EBA (Everything But Arms; section 3.3.3)

Table 3.2: Overview of the current GSP regime

	Generalised System of Preferences (GSP)	Generalised System of Preferences + (GSP+)	Everything But Arms (EBA)
Number of countries (*EU1,*EU2,*EU3)	176 countries and territories (incl. GSP+ and EBA countries)	16 countries (out of the 176 GSP countries): Armenia, Azerbaijan, Bolivia, Cape Verde, Colombia, Costa Rica, Ecuador, El Salvador, Georgia, Guatemala, Honduras, Mongolia, Nicaragua, Paraguay, Peru, Sri Lanka.	49 LDCs (out of the 176 GSP countries)
Main beneficiaries (2009, *G)	India (€ 13.1 billion) Bangladesh (€ 4.5 billion) Thailand (€ 4.2 billion) Indonesia (€ 3.4 billion) Brazil (€ 3.4 billion) Russia (€ 2.9 billion)	Ecuador Peru Costa Rica	Bangladesh Cambodia Senegal Malawi Ethiopia
Value of imports to EU (2009, *EU2)	€ 48.0 billion	€ 5.3 billion	€ 6.2 billion
Duty free tariff lines (*G)	4781	9717	11053
Main imports to the EU (2009, *EU2)	Textiles and Clothing Mineral products Chemical products Machinery Plastics and Rubber	Textiles Mineral products Vegetable products Prepared foodstuffs Live animals	Textiles Footwear Vegetable Products Prepared foodstuffs Live animals
Main benefits (*EU2)	No duty on non-sensitive products. Lower duty on other products.	No duty on more products than under GSP.	No duty No quota

Sources: Gasiorek (2011, p. 8), marked with (*G), European Commission, DG Trade (2011m), marked with (*EU1), European Commission, DG Trade (2011n), marked with (*EU2), list of GSP+ countries received by e-mail from DG Trade as of 23rd of April 2012, marked with (*EU3). Remark: Sri Lanka is currently suspended from GSP+ benefits.

While the GSP covers most countries, GSP+ and EBA allow for more duty free tariff lines and are therefore more beneficial to a smaller number of countries. Nevertheless, large countries like India, Brazil, and Russia, countries which are among the main beneficiaries of the GSP system, may not even be in need of special trade preferences.

The European Union is not the only developed “country” which grants GSP trade preferences to developing countries. UNCTAD¹⁰⁶ (2011) names in total 11 countries which grant such preferences: Australia, Belarus, Canada, the European Union, Japan, New Zealand, Norway, the Russian Federation, Switzerland, Turkey, and the United States.¹⁰⁷ The EU, however, is the most important player, as its GSP imports comprise a dominant share of total GSP imports, exceeding the sum of GSP imports of Japan, Canada, and the United States.¹⁰⁸ According to UNCTAD (2011), there are 205 countries and territories worldwide which receive some type of GSP preference, 176 of them receiving EU GSP preferences. However, one has to be careful when counting the countries, as the United States for example grant GSP preferential treatment to the West Bank and Gaza Strip (while no other GSP donor does so),¹⁰⁹ while the European Union instead has a free trade agreement with the West Bank and Gaza.

Even though the EU is the most important player with regard to GSP imports in 2008, imports under GSP, GSP+ and EBA make up a rather small share of total EU-27 imports, being equal to 5.1% in total (addition of the numbers marked in grey colour in Table 3.3). Table 3.3 shows by which preference regime these imports enter the EU.

Table 3.3: EU-27 imports by preference regime, years 2002-2008

	MFN=0	MFN>0	GSP=0	GSP>0	GSP+=0	GSP+>0	EBA=0	EBA>0	Other pref=0	Other pref>0	Unknown	Trade under zero tariffs
2002	53.06	23.14	2.92	2.12	0.27	0.05	0.28	-	16.82	0.42	0.93	73.75
2003	52.65	23.26	2.86	2.01	0.23	0.05	0.29	0.00	17.36	0.47	0.81	73.39
2004	58.22	22.96	1.75	1.80	0.21	0.06	0.34	0.00	10.99	0.42	3.25	71.51
2005	61.70	23.14	1.59	1.89	0.29	0.05	0.33	0.00	8.47	0.32	2.21	72.38
2006	62.25	24.08	1.48	1.90	0.31	0.04	0.38	0.00	7.33	0.27	1.97	71.75
2007	61.21	24.20	1.79	1.95	0.34	0.04	0.35	0.00	8.18	0.23	1.71	71.87
2008	62.67	23.34	2.09	2.09	0.41	0.05	0.46	0.00	7.71	0.22	0.97	73.34

Source: Gasiorek (2011, p. 22).

However, most imports enter under the MFN tariff equal to 0 (62.67%) or >0 (23.34%), which together accounts for 86.01% of EU imports. In this respect, it has to be mentioned that not all countries eligible for GSP preferences necessarily export all goods under GSP preferences, but

¹⁰⁶ United Nations Conference on Trade and Development.

¹⁰⁷ See UNCTAD (2011).

¹⁰⁸ See Gasiorek (2011), p. 16.

¹⁰⁹ See UNCTAD (2011).

may also select to export under the MFN tariff, which may be one explanation for the dominant share of imports under the MFN regime. The category “Other preferences” describes EU imports which are imported under preferential trade agreements or other trade regimes. Generally, it can be concluded that the shares of most trade regimes remain rather constant over time.

For 2008, there are more detailed figures available to show in which product sections GSP/GSP+/EBA imports are dominating, i.e., that for a certain range of product sections, GSP/GSP+/EBA imports are relatively important compared to the MFN regime or other available preferences. There are five product sections (out of the 21 TDC sections)¹¹⁰ where GSP/GSP+/EBA imports have a share of close to or more than 20% in that section (note that the different %-values cannot be added up), including both a tariff equal to zero or larger than zero. These are footwear (section XII, 28.4%), animal or vegetable fats and oils (section III, 27.9%), live animals (section I, 22.8%), raw hides (section VIII, 20.5%), and clothing (section XIb, 19.6%), while textiles only account for 11.1% (section XIa).¹¹¹ Again, as mentioned in the previous paragraph, GSP eligible countries may additionally export products under different preference regimes.¹¹² Nevertheless, these figures show that especially footwear as well as animal and vegetable fats and oils are crucial products for the GSP regime.

3.3.1 Aspects of the “standard” Generalised System of Preferences

The generalised system of preferences is to some extent a complement to the preferences granted to ACP countries and is primarily designed for countries which were not former colonies. The idea, as in the ACP trade preferences, is to give developing countries access to the European Union market, because the size of their own domestic market is insufficient to allow for sufficient economies of scale in production, in particular with regard to manufactured products.¹¹³ The GSP exists in the EU since 1971 and is not a mutual contract, but granted by the EU without reciprocity, which can therefore change it unilaterally anytime.¹¹⁴ According to the MFN principle, the EU would have to grant the same preferences granted under the GSP to any other WTO member, but developing countries are a notable exception from this rule,¹¹⁵ because of a so-called “enabling clause” which was temporary at first and then implemented indefinitely from 1979.¹¹⁶

A downside of the GSP system is that commodities face a lower tariff than manufactured goods (especially goods considered sensitive).¹¹⁷ This fails to foster industrial development in

¹¹⁰ The 21 TDC sections are an aggregation of the HS coding system.

¹¹¹ See Gasiorek (2011), p. 23.

¹¹² See Gasiorek (2011), p. 23.

¹¹³ See Jovanovic (2005), p. 546.

¹¹⁴ See Panagariya (2002), p. 1421.

¹¹⁵ See Jovanovic (2005), pp. 546-547.

¹¹⁶ See Panagariya (2002), p. 1421.

¹¹⁷ See Jovanovic (2005), p. 546.

developing countries as it puts manufactured goods at a comparative disadvantage vis-à-vis commodities.¹¹⁸ Developing countries therefore also have a smaller possibility of benefiting from the value added as finishing a product promises more profits than only selling commodities.

The GSP system is complicated for several reasons. First, the system is not equally applied worldwide. For example, the United States or Japan may have different rules and tariffs than the European Union, which also concerns the range of covered products, as some textile and farm goods are not included in the GSP.¹¹⁹ Second, it is possible to remove certain products from the list of goods which receive preferential treatment, if the products reach a “level of competitiveness which ensures further growth even without preferential access to the EU market”¹²⁰, according to the DG Trade, a process which is called graduation. This may be considered somewhat problematic as it implies that once a product becomes competitive, the “reward” for this is the imposition of a higher tariff, due to of the graduation of the product. Third, the products require a proof of origin, which implies that the producing country must have substantially added value to the product.¹²¹ It is difficult to predict whether this proof of origin will finally be accepted or rejected by the EU, thereby producing uncertainty for the producer or the country; these reasons support the perception that “the system itself can represent an NTB [non-tariff barrier]” (Jovanovic, 2005, p. 548).

The GSP system is only ever valid for a certain period of time and then subject to revisions. As the current GSP scheme expires at the end of 2011 and can only be extended until 2013, a revised GSP scheme has to be implemented in early 2014 at the latest.¹²² In 2011, a very extensive and detailed mid-term evaluation of the EU’s Generalised System of Preferences took place.¹²³ This includes proposals of the EU DG Trade for reforming the EU GSP and is about - among other things - to reduce the number of countries benefiting from the GSP from 176 to 80 (particularly higher or upper middle income countries).¹²⁴ This applies to, for example, Qatar, Saudi Arabia, Russia and Kuwait, or countries that have other trade agreements with the EU (for example free trade agreements, economic partnership agreements or the transitory market access regulation).¹²⁵ However, product coverage is not subject to changes, as this could erode relative preferences and advantages of GSP+ and EBA countries over GSP countries.¹²⁶ The idea of excluding higher or upper middle income countries is to avoid granting preferences to countries which do not necessarily need them, and therefore give the lower income countries a comparative advantage. Another point is that countries like Brazil, Russia, India, China, and Thailand, which benefit largely from the GSP preferences and receive close to a third of the

¹¹⁸ See Jovanovic (2005), p. 546.

¹¹⁹ See Jovanovic (2005), p. 547.

¹²⁰ Candau, Jean (2005), p. 10.

¹²¹ See Jovanovic (2005), p. 548.

¹²² See European Commission, DG Trade (2011n), p. 5.

¹²³ See Gasiorek (2011).

¹²⁴ See European Commission, DG Trade (2011n), p. 2.

¹²⁵ See European Commission, DG Trade (2011n), p. 2.

¹²⁶ See European Commission, DG Trade (2011n), p. 2.

benefits, are powerful emerging markets that maybe do not require the beneficial treatment provided by the GSP.¹²⁷ One can conclude that a general problem of the GSP is that those countries that might need trade preferences the most, benefit less than rather powerful emerging economies like Brazil or Russia. The previously mentioned study by Gasiorek (2011) claims that if all duties from all GSP countries were withdrawn (in a hypothetical scenario), especially larger countries like Brazil, Argentina and Thailand would benefit from this measure, while at the same time primarily EBA countries would lose out.¹²⁸ It would therefore make stronger countries stronger and weaker countries weaker, which cannot be desired by the EU.

Despite all the reform proposals, DG Trade commissioner De Gucht claims that safeguards (for example in trade with textile products or fisheries) can be used if imports rise enormously and quickly, in order to protect EU producers and help the “system [to] become more stable”.¹²⁹ This comment of course implies that, in this opinion, the old system was characterized by too much instability.

3.3.2 The GSP+ system of trade preferences

Currently, 16 countries benefit from the GSP+ scheme (see Table 3.2), which allows for imports of more goods to be free of duty than under the GSP regime and therefore additional benefits.

How do countries become eligible for GSP+? Basically they have to fulfil certain “vulnerability criteria”¹³⁰:

- Imports from the relevant country under the GSP regime have to be less than 1% of total GSP countries’ imports into the European Union. The new proposal (see previous section) would increase this threshold to 2% of total GSP countries’ imports.
- Another criterion is that “the country’s 5 largest product sections must cover at least 75% of its total exports to the EU”. The new proposal (see previous section) would keep the threshold stable at 75%.
- In addition, countries eligible for GSP+ have to prove that they fulfil (amongst others) standards in good governance, environmental protection, human rights and labour standards.

According to the evaluation by Gasiorek (2011) it is not yet possible to judge whether the GSP+ goals such as good governance or environmental protection were successfully supported or enhanced in the past years. Nevertheless, he also remarks negative aspects: First, some agricultural products like vegetables, processed sugar, beef and dairy products do not receive preferential treatment, second, graduation rules exist just like in the regular GSP system, and

¹²⁷ See European Commission, DG Trade (2011o), p. 2.

¹²⁸ See Gasiorek (2011), p. 10.

¹²⁹ See European Commission, DG Trade (2011o), p. 3.

¹³⁰ See Gasiorek (2011), p. 18, and European Commission, DG Trade (2011n), pp. 3-4, for the implied criteria.

third, fulfilling standards could lead to focusing on goals which are perhaps less important for fulfilling a country's needs in economic and societal terms.¹³¹ Fontagné et al. (2008) find that the basic difference between GSP and GSP+ is the more favourable treatment of textile exports under GSP+, while apart from this there is no major difference.

Conditionality of trade preferences based on human rights, good governance or other factors implies at least two more considerations. If the criteria are not fulfilled, preferences could and should be withdrawn, otherwise this policy approach loses credibility. However, a number of developing country governments depend significantly on preferences and aid, so the withdrawal could lead to macroeconomic instability and political crises within the country. On the one hand this is clearly not the intention of such actions, but on the other hand, without a credible threat of withdrawal of preferences, there would be no option to apply pressure in order to enforce the goals of GSP+.

3.3.3 The Everything But Arms agreement (EBA)

The Everything But Arms (EBA) agreement awards additional special trade preferences to the least developed countries (LDC) compared to GSP and GSP+. In particular, since the year 2001 all imports from LDCs except for arms and ammunition were free of tariffs and quotas (there is also a limited transition period for rice, sugar and bananas).¹³² However, not only because of the Cotonou agreement mentioned above, most relevant developing countries (often located in the ACP region) already benefited from duty and quota free access to European Union markets, which is why only a few non ACP developing countries were new beneficiaries, that is Afghanistan, Bangladesh, Bhutan, Cambodia, Laos, the Maldives, Myanmar, Nepal, and Yemen.¹³³ ACP countries that are at the same time LDCs, have the option to export either under the EBA or ACP regime, while the new beneficiaries mentioned above do not have that choice. One important factor for the decision of an ACP country could be about more complex rules of origin in the EBA agreement. Brenton (2003) confirms the view that for some countries EBA preferences were of no extra benefit as tariffs for their primary export products already were equal to zero (even in the MFN tariff) before the EBA agreement came into force, which particularly concerns Angola, the Central African Republic, Chad, Congo, Liberia, Niger, and Vanuatu, where in 2001 less than 5% of exports to the EU could benefit from tariff preferences. In contrast, the Maldives, Cambodia, Bangladesh, Laos or Malawi (around 16%) could benefit more.¹³⁴

Complex rules of origin are a crucial obstacle preventing poor countries from trading with the EU.¹³⁵ Complexity of rules of origin means that the costs of fulfilling bureaucratic tasks, for

¹³¹ See Gasiorek (2011), p. 19.

¹³² See European Commission, DG Trade (2011p) and Panagariya (2002), p. 1423.

¹³³ See Jovanovic (2005), p. 540.

¹³⁴ See Brenton (2003), p. 29.

¹³⁵ See Brenton (2003), p. 3.

example, may outweigh the benefits. However, small LDCs may also lack the capacity to produce relevant pre-products or in general lack the necessary production base. Therefore, they rely on imports from other countries in order to be able to assemble or produce advanced products and add value to the product, leading to difficulties in fulfilling the rules of origin.

According to the DG Trade memorandum¹³⁶ mentioned above, the EBA agreement is planned to remain basically unmodified, except for simplified rules of origin,¹³⁷ which is an appropriate response to the shortcomings of the system. The EBA is thus not subject to periodic revisions (such as once every decade) like the GSP or the Cotonou agreement, but of a more permanent nature. The idea behind this is to reduce uncertainty among exporters and producers, which could arise from periodic revisions.¹³⁸

As a few countries are eligible both for the EBA and the EPA agreement, Table 3.4 shows the advantages of economic partnership agreements, which are designed for ACP countries only, compared to the Everything But Arms (EBA) agreement.

Table 3.4: Advantages of economic partnership agreements over EBA according to the DG Trade

<p><u>Economic partnership agreements:</u></p> <ul style="list-style-type: none"> • Are contracts between contractual partners. The Everything But Arms (EBA) agreement instead is unilaterally granted by the European Union and could be withdrawn and modified anytime. • Contain more simplified rules of origin. • Foster regional integration initiatives. • Address issues such as insufficient infrastructure or customs. • Provide for an opportunity to address trade-related issues, e.g., environmental issues. • Allow for ACP countries to impose safeguards on EU imports in order to protect local industries.
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Source: European Commission, DG Trade (2011q)

It can be questioned whether allowing ACP countries to impose safeguards on EU imports will make their industries more competitive in the future. Another question is whether the EU and their trading partners in the EBA agreement should not have contracts on a mutual and equitable basis instead of unilateral preferences granted by the European Union. Such contracts between contractual partners could increase not only the ownership of the agreement, but also stimulate a positive development of it. Another aspect is that when a country loses the LDC status, it can also be withdrawn from the list of EBA beneficiaries by the EU Commission.¹³⁹

¹³⁶ See European Commission, DG Trade (2011n).

¹³⁷ See European Commission, DG Trade (2011n), p. 4.

¹³⁸ See Brenton (2003), p. 4.

¹³⁹ See European Commission, DG Trade (2011p).

Using 2001 data, Candau and Jean (2005) find that Sub Saharan African LDCs which had the option of exporting their goods according to the Cotonou agreement or the EBA agreement, selected the Cotonou agreement. Of course the figures are about a decade old and therefore could have changed in the meantime, as the EBA agreement had only been introduced very recently at that time. Candau and Jean (2005) also claim that the rules of origin in the EBA agreement (which is part of the GSP system) are stricter than for the Cotonou agreement, which might be one reason for the choice. Brenton (2003) assumes one reason could be that it takes time until the new scheme is fully utilized, because ACP countries are accustomed to using the old preferences.

It can be inferred that trade preferences are not only based on the level of tariffs or quotas, but also on whether the preferences are utilized to a large extent, which is often not the case due to the fact that fulfilling rules of origin for the exports can be difficult and time consuming. Consequently, low tariffs alone might be insufficient, and they rather have to be accompanied by appropriate rules of origin in order to allow for full utilization. The most remarkable and positive aspect of the EBA agreement is probably that it constitutes a very clearly communicated commitment to help in the form of trade preferences for the least developed countries.

Brenton (2003) points out that the debate should generally concentrate less on tariffs, but more on enabling trade diversification, as a lot of least developed countries lack diversification of exports and rely on the export of one good. It is a major shortcoming that a number of African countries started only recently to diversify their economic structure, while their policies in previous decades were not supportive of export industries (and therefore diversification).¹⁴⁰

3.4 Impact of regional trade agreements on regional trade

It is no surprise that regional trade agreements can have an impact on regional trade flows. Opinions on the extent of such changes differ widely. Radelet (1999) claims that most Sub Saharan African regional trade agreements did not result in increased trade among their members, with the exception of the South African Customs Union (South Africa being part of this customs union). Radelet (1999) also refers to a study by Langhammer and Hiemenz (1990), who state that if a regional trade agreement consists of developing countries only, mutual trade does not increase significantly, while Radelet (1999) notes this may be different if developed countries are part of the agreement. See for example the North American Free Trade Agreement (NAFTA) with the United States, Canada and Mexico:

¹⁴⁰ See Collier et al. (2008), p. 36.

“[T]he US, the EU and Japan (...) are the political and legal leaders in the international trade regulation system (...) [and] the “developing” countries of the world generally trade more with the “developed” countries than with each other”¹⁴¹.

Regional trade agreements are said to be more successful if they can build on previous trade liberalisation achievements and are “outward oriented”.¹⁴²

Even though the data of the study by Radelet (1999) are from almost two decades ago, which is why the results have to be interpreted with caution from today’s perspective, it is questionable whether for example trade agreements between ACP countries and the European Union on the one hand or only among the ACP countries on the other hand are more beneficial for the ACP countries. The new economic partnership agreements (EPAs) explicitly aim to enhance regional cooperation between the ACP sub-groups (5 in Africa, 1 Pacific region and 1 Caribbean region).¹⁴³ In several years it will be possible to judge whether this aim was successful. Regional trade agreements as such are however only one side of the coin.

The other side of the coin are free trade agreements with countries that constitute a dominant position within the relevant region. Küblböck and Six (2006) give the example of South Africa, which is the largest economy in the Southern African region. Consequently, they claim that the free trade agreement between South Africa and the EU (which entered into force on the 1st of January 2000) also has important repercussions on other neighbouring countries. Küblböck and Six (2006) describe in detail that South Africa is the most dominant member of the South African Customs Union¹⁴⁴, but more important Lesotho, for example, is a least developed country which lost its privileged market access towards the European Union (through the EBA agreement) compared to South Africa. Additionally, South Africa has a more competitive and well-diversified economy, which can accommodate such changes easier. As a result, the free trade agreement between the EU and South Africa puts Lesotho at a relative disadvantage.

Tariff reductions between the EU and South Africa were and are substantial (even though not all tariffs went down to zero) and also include a large, but incomplete variety of agricultural products, while, for example, milk products and beef were exempt.¹⁴⁵ The free trade agreement also came into being because South Africa would not be allowed to benefit from the ACP regulations, and therefore needed a replacement.¹⁴⁶ The question can be raised how regional integration within Southern Africa can proceed after these tremendous changes to the regional trade structure occurred.

¹⁴¹ D. Hanson (2010), p. 10.

¹⁴² See Radelet (1999), p. 11.

¹⁴³ See Fontagné et al. (2008), p. 13.

¹⁴⁴ Botswana, Lesotho, Namibia, and Swaziland are further members of the South African Customs Union, implying tariff-free trade between the countries and a common external tariff.

¹⁴⁵ See Küblböck, Six (2006), pp. 25-26.

¹⁴⁶ See Küblböck, Six (2006), p. 26.

3.5 Preliminary summary of trade policy towards developing countries

Several aspects are central when considering EU trade policy towards ACP countries. First, even though ACP preferences were quite advantageous, ACP countries could not substantially increase their share in EU imports, which might be on the one hand because of limited economic development and on the other hand because exports consist of agricultural rather than manufactured goods.¹⁴⁷ Second, the guarantee of privileges towards the EU market might also have lowered countries' willingness to pursue a strategy to open up their own markets.¹⁴⁸ Third, the recent Economic Partnership Agreements (EPA) are a step towards more customized solutions for the ACP countries, which can be considered as valuable. While the Lomé agreements, with non-reciprocity and no conditionality, were favourable at first sight, in a long-term view other countries, such as countries in Asia, which did not receive similar trade preferences, actually performed better than ACP countries in the past decades.

Even though GSP preferential treatment has quite some advantages, it also has several shortcomings, which are discussed below. One is graduation of products that have just become competitive and successful, which subsequently leads to exclusion from GSP preferential treatment and another one is that so-called sensitive products may also be excluded from preferential treatment. Graduation implies that if EU imports from a developing country under the GSP or GSP+ regime (graduation, however, does not apply to the EBA agreement) exceed 15% of all EU GSP/GSP+ imports (threshold for clothing and textiles: 12.5%) in a specific product group in three successive years, the relevant product group can be excluded from preferential treatment.¹⁴⁹ A recent example for graduation is Vietnam, where footwear was excluded, but it is also possible to re-include product groups of countries if the situation changes.¹⁵⁰ There are several reasons why one-way trade preferences can lead to detrimental impacts on the development of exports. "Once exporters have achieved free access to the markets of major trading partners, their incentive for using internal liberalisation as an instrument of encouraging the partner to open its market disappears. Alternatively, if exporters fear losing GSP status if exports cross a certain threshold, they may be more accommodating of protectionist policies at home."¹⁵¹ Finally, rules of origin may be rather restrictive or open. A product is eligible only if a substantial part of the value was added in the country and not outside of it. This is in order to avoid that third countries benefit indirectly from trade preferences even though they are actually only a third party. The critical issue is the amount of required value-added, which can have basically any percentage value, for example, 10%, 25% or 50%. Panagariya (2002) cautions that some less developed, small countries cannot fulfil these expectations as they do not have the required domestic industry for producing pre-products within the country and therefore may only assemble products including a large portion of

¹⁴⁷ See Brenton et al. (1997), p. 328.

¹⁴⁸ See Jovanovic (2005), p. 560.

¹⁴⁹ See Gasiorek (2011), p. 17.

¹⁵⁰ See Gasiorek (2011), p. 17.

¹⁵¹ Panagariya (2002), p. 1427.

imported, foreign pre-products. Small countries can possibly be put at a relative disadvantage vis-à-vis larger countries.

Apart from trade agreements between developed countries and developing countries, there is also the possibility of regional integration, that is trade agreements between the developing countries. For Sub-Saharan Africa, Radelet (1999), however, finds that regional trade agreements may not increase mutual trade unless they are accompanied by a broad policy change towards free(er) trade, deep-rooted economic reforms and investment in infrastructure. He also finds that a downside of the implementation of such agreements could be the use of public administration capacities, which countries are short of anyway.¹⁵² Regional trade agreements are also said to be more successful if they can build on previous trade liberalisation achievements and are “outward oriented”.¹⁵³

The question is whether the existing trade preferences really help certain developing countries in improving their competitiveness and increasing mutual trade. On the one hand, special trade preferences with the European Union of course provide the countries with privileged access and therefore favourable conditions to European markets. On the other hand, granting preferences to developing countries implies also some sort of protection vis-à-vis perhaps more competitive third countries. Thus, the incentive of the protected, developing countries to increase domestic competitiveness is lowered, which might not be beneficial for the economic development of the country. Another issue is that it is easier within a country to lobby for free trade if there is a perspective that the own exporting industry benefits from the opening of a market in the other country. In return, once there are reciprocal trade preferences, there is a threat that if one country becomes more protectionist, the other one might retaliate with similar measures. If unilateral trade preferences are granted, as they are frequently towards developing countries in particular, this erodes incentives for domestic trade liberalization. Gasiorek (2011, p. 15) states that “trade economists typically see welfare and efficiency/productivity gains from trade coming primarily from *domestic* liberalisation and not simply from increased access to export markets and increased exports”, but Gasiorek also mentions Ozden and Reinhardt (2003) who claim that if countries benefit from GSP trade preferences, this renders them more likely to implement protectionist policies. In short, unilateral trade preferences can be judged as a very mixed blessing.

In addition to the establishment of special trade relations with developing countries the European Union also concluded preferential trade agreements with a large number of countries. An empirical analysis on the EU’s preferential trade agreements is conducted in chapter 4.

¹⁵² See Radelet (1999), p. 15.

¹⁵³ See Radelet (1999), p. 11.

4 Have EU Preferential Trade Agreements increased trade?

4.1 Introduction

The European Union is the largest trade destination and origin in the world.¹⁵⁴ Consequently, an analysis of the trade policy of the European Union is of particular interest. The European Union has, on behalf of its members, signed a number of preferential trade agreements (PTA) in recent years,¹⁵⁵ a term that includes both free trade agreements (FTA) and customs unions. While a free trade agreement aims at reducing all tariffs between the member countries, each partner country keeps its autonomy over trade policy vis-à-vis third countries and, therefore, there is no common external tariff structure between member countries. The difficulty is the proof of origin for a product, especially for intermediate products that have their origin in a third country and are used in manufacturing in a member country of the free trade agreement. In contrast to a free trade area, a “customs union consists of two or more countries which have no tariff barriers between themselves and a common tariff against the rest of the world.”¹⁵⁶

For simplicity throughout this study, the term preferential trade agreement is used to describe both the free trade agreements and the customs union between the European Union and its respective contractual partners. Almost all relevant preferential trade agreements are free trade agreements, except for the customs union with Turkey. In this chapter, the effect of preferential trade agreements on the volume of trade¹⁵⁷ between the European Union and its contractual partners is investigated by using an empirical gravity model.

The gravity model as such is derived from a number of economic theories. One of the most prominent papers is by Anderson (1979), who gives a theoretical explanation for the gravity model and states that the share of national expenditure - measured by spending on tradeables - is a function of population and income. Helpman (1999) finds that the volume of trade (exports plus imports) with other trading partners is positively related to their gross domestic product (GDP). For details on the correct econometric specification of a gravity model the papers of Mátyás (1997) and Egger and Pfaffermayr (2003) are particularly important. In recent years, Rose published several articles utilizing the gravity model. For example, Rose (2004) estimates the effect of multilateral trade agreements of the World Trade Organization (WTO) on trade, using a large panel data set. Baier and Bergstrand (2007) also apply the gravity model and find that free trade agreements roughly double two members' trade volumes within a decade.

The European Union's preferential trade agreements with Mediterranean countries in particular were examined by Péridy (2005) for the timeframe 1975 to 2001 by using a gravity model. He

¹⁵⁴ See European Commission, DG Trade (2008). See also Figures 2.1 and 2.2.

¹⁵⁵ For a detailed list, see Table 4.1.

¹⁵⁶ Hazlewood (1994), p. 743.

¹⁵⁷ The volume of trade is the sum of exports and imports between two countries.

finds that Mediterranean countries' exports to the European Union increased by 20 to 27 percent as a result of preferential trade agreements. However, Péridy does not examine preferential trade agreements outside the Mediterranean countries. At that time, the trade agreements also covered the trade flows only very partially. In addition, Bergstrand et al. (2011) carried out an assessment of six EU free trade agreements (South Africa, Mexico, Morocco, Tunisia, Chile, and Jordan) on behalf of the European Commission. They find that EU imports from and EU exports to these countries either increased (particularly EU exports to Chile) or estimation results were not significant.

The rest of this chapter is structured as follows. In section 4.2, the gravity equation and the general methodology as well as the sources of data are explained. Section 4.3 addresses the core question, whether the trade agreements have led to an increase of trade between the EU countries and their trading partners. The analysis in this section is limited to trade of the EU-15 countries¹⁵⁸ with their contractual partners, as the twelve new member states (NMS-12)¹⁵⁹ of the EU-27¹⁶⁰ joined either in 2004 or 2007, too late to profit from the preferential trade agreements that were mostly implemented before 2004. However, as a theoretical exercise and for the purpose of completeness, an analysis of the trade of the EU-27 is conducted as part of the robustness analysis in section 4.4. Finally, section 4.5 summarises.

4.2 Empirical approach

This section introduces the gravity model, followed by a brief description of the choice of variables and the data sources. In addition, the dates of entry into force of the different EU preferential trade agreements are given.

The idea of the empirical gravity model used in this chapter is to analyse whether trade volumes between 1994 and 2007 depend on the GDP of the EU country or the partner country, on the distance between these countries and whether the countries share a common language or a colonial past. The trade volumes could also be influenced if countries are neighbouring (adjacent) countries or landlocked. The fundamental question of this chapter, however, is, whether trade volumes change once the preferential trade agreements are in force.

$$\ln \text{Trade}_{ijt} = \alpha + \beta_{\text{GDP}_i} \ln \text{GDP}_{it} + \beta_{\text{GDP}_j} \ln \text{GDP}_{jt} + \beta_{\text{Dist}} \ln \text{Dist}_{ij} + \beta_{\text{LangOff}} \text{LangOff}_{ij} + \beta_{\text{LangEth}} \text{LangEth}_{ij} + \beta_{\text{Colony}} \text{Colony}_{ij} + \beta_{\text{Adjacent}} \text{Adjacent}_{ij} + \beta_{\text{Landl}} \text{Landl}_{ij} + \gamma \text{PTA}_{ijt} + \mu_{ij} + \mu_t + \varepsilon_{ijt}$$

¹⁵⁸ EU-15 countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxemburg, Netherlands, Portugal, Spain, Sweden, United Kingdom.

¹⁵⁹ NMS-12 countries: Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia, Slovenia.

¹⁶⁰ EU-27 countries: EU-15 countries and NMS-12 countries.

where subscript i denotes a European Union member state, subscript j the trading partner of the preferential trade agreement and t denotes time (year; annual data).

To calculate the trade volume $\ln\text{Tradevol}_{ijt}$, data on exports (f.o.b.¹⁶¹) and imports (c.i.f.¹⁶²) between the respective European Union member state and the trading partner country were taken from the International Monetary Fund's Direction of Trade Statistics (DOTS).¹⁶³ All trade data for Belgium and Luxemburg in the years 1994-1996 was taken from their national statistics offices. Trade data for Latvia with the Faroe Islands (1994-1999) and with the Former Yugoslav Republic of Macedonia (FYROM; 1994-1997) were gratefully received from the Latvian national statistics office. The trade data are denominated in US dollars and were deflated by using the International Monetary Fund's EU country-specific GDP deflator¹⁶⁴; For example, French exports and imports were deflated with the French GDP deflator.¹⁶⁵ A small number (125) of observations of the variable trade volume ($\ln\text{Tradevol}_{ijt}$) are problematic, because it is not possible to calculate the natural logarithm of zero (meaning that a pair of countries did not trade in a particular year). Simply leaving out these variables could, however, lead to a selection bias. Therefore, instead of using $\ln(\text{Tradevol}_{ijt})$, $\ln(\text{Tradevol}_{ijt} + 1)$ is used to solve this problem. The problem that trade observations equal zero mostly arises for new member states of the European Union, but the main part of this chapter focuses - for reasons given above - on the EU-15 countries only. The scope of this problem is greatly reduced when the analysis is limited to the EU-15 countries, where only 10 zero trade dyads are observed and far fewer observations thus need to be converted by applying $\ln(\text{Tradevol}_{ijt} + 1)$ than in the case of the EU-27.

The variable $\ln\text{GDP}_{it}$ denotes the log of GDP in constant 2000 US dollars¹⁶⁶ of a European Union country i and $\ln\text{GDP}_{jt}$ is the log of GDP in constant 2000 US dollars of the trading partner country j .¹⁶⁷

The distance variable ($\ln\text{Dist}_{ij}$) is calculated by taking the natural logarithm of the distance between the major cities of two respective countries.¹⁶⁸ As several cities are taken into account for each country, the distances between the cities are weighted by the share of the city in the overall country's population. Adjacent_{ij} is a binary variable that takes the value one if the two countries share a physical border and zero otherwise. Landl_{ij} is a variable that takes the value zero if none of the countries is landlocked, one if one of the two countries is landlocked and

¹⁶¹ f.o.b. = free on board transaction value at the frontier of the exporting country.

¹⁶² c.i.f. = cost, insurance, freight transaction value at the frontier of the importing country.

¹⁶³ In this study only the perspective of the EU countries is crucial, which is why exports and imports are taken from the perspective of each EU country only. Data originating from the trading partner country could be slightly different compared to EU data which is why some researchers calculate an average of the exports and imports of both the EU country and mirror-inverted from the trading partner country.

¹⁶⁴ The base year is 2000.

¹⁶⁵ The World Bank was selected as a source for the GDP deflator of Malta, as a GDP deflator was not available from the International Monetary Fund.

¹⁶⁶ According to the World Bank, first an index is created by dividing each year of the constant local price series by its 2000 value (i.e., 2000 will equal 1). Then each year's index result is multiplied by the corresponding 2000 current US dollar price value. Dollar figures are converted from local currencies using 2000 official exchange rates.

¹⁶⁷ The data source is the World Bank (as of February 2009).

¹⁶⁸ The data source of all variables named in this paragraph is the institute CEPII in Paris.

two if both countries are landlocked. LangOff_{ij} is a binary variable that takes the value one if the two countries have a common official language. LangEth_{ij} is a binary variable that takes the value one if at least nine percent of the population in both countries speak the same language. Nine percent was proposed by CEPII as the relevant threshold. Colony_{ij} is a binary variable that takes the value one if the two countries ever had a colonial relationship. This is a fairly general term, which indicates that one country has influenced the institutions of and governed the other for a long period of time.

The variable PTA_{ijt} is a binary variable that takes the value one in the year of the introduction of the preferential trade agreement and in all following years, but zero in all previous years, irrespective of the month in which the PTA entered into force. In the case of Jordan for example, where the PTA entered into force on the first of May 2002, each dummy from 2002 to 2007 takes the value one, while taking the value zero in the years 1994 to 2001 (see Table 4.1 for a timeline of recent European Union PTAs).

Table 4.1: Timeline of recent European Union Preferential Trade Agreements

• EC-Andorra 1/7/1991 (customs union)
• EC-Turkey 1/1/1996 (customs union) *
• EC-Faroe Islands (FTA) 1/7/1997
• EC-Palestinian Authority (FTA) 1/7/1997
• EC-Tunisia (FTA) 1/3/1998 *
• EC-South Africa (FTA) 1/1/2000 *
• EC-Morocco (FTA) 1/3/2000 *
• EC-Israel (FTA) 1/6/2000 *
• EC-Mexico (FTA) 1/7/2000 *
• EC-FYROM (FTA) 1/6/2001 *
• EC-Croatia (FTA) 1/3/2002 *
• EC-Jordan (FTA) 1/5/2002 *
• EC-Chile (FTA) 1/2/2003 *
• EC-Lebanon (FTA) 1/3/2003 *
• EC-Egypt (FTA) 1/6/2004 *
• EC-Algeria (FTA) 1/9/2005 *

Source: World Trade Organization (2012a). The asterisk * indicates that the PTA is part of the analysis in this chapter. The date indicates the date of entry into force of the agreement.

The variable μ_{ij} is added to denote country-pair specific effects (for example Austria-Algeria, Austria-Chile, Austria-Mexico, etc.). The time-specific effects μ_t (for each year from 1994 to 2007) control for unobserved time effects. These could consist, for example, of worldwide factors which affect simultaneously all bilateral trade flows. The error term (ϵ_{ijt}) is assumed to have a constant variance and a mean of zero.

More recent agreements such as the free trade agreements with Albania (1st of December 2006), Montenegro (1st of January 2008), Bosnia and Herzegovina (1st of July 2008), the Cariforum States¹⁶⁹ (1st of November 2008), Côte d'Ivoire (1st of January 2009), Cameroon (1st of October 2009), Papua New Guinea/Fiji (20th of December 2009), and Serbia (1st of February 2010) or most recently with South Korea (1st of July 2011) are not included in the study.¹⁷⁰ The rationale for this is that the agreements are presumably too recent for an observable effect on trade to have occurred and the most recent data available at the time of research were from 2007. The treaties with the Palestinian authorities and Faroe Islands were dropped because of poor data availability for the two respective countries. Previous treaties dating back to the 1970s, such as those with Syria, Norway, Iceland, Switzerland and Liechtenstein and the Overseas Countries and Territories (OCT) are not in the focus of this chapter, neither is the customs union with Andorra (1st of July 1991), which is not very recent.

The list of preferential trade agreements in Table 4.1 only includes trade in goods, but not trade in services. There are, however, a few exceptions to this rule: The economic integration agreements with Mexico, which entered into force on the first of October 2000, with FYROM (Former Yugoslav Republic of Macedonia, 1st of April 2004), with Croatia (1st of February 2005), with Chile (1st of March 2005), with the Cariforum states (1st of November 2008), with Albania (1st of April 2009), and with Montenegro (1st of May 2010). However, an examination of trade in services is not part of this study.

4.3 Empirical results

The following chapter presents the empirical analysis conducted in order to test whether preferential trade agreements and other factors had an impact on EU-15 trade flows. The decisive variable is PTA_{ijt} and therefore its coefficient γ .

4.3.1 Results at the aggregate EU-15 level

In a first step, the gravity equation is estimated by applying ordinary least squares (OLS), ordinary least squares with robust standard errors, and a cluster regression. In a second step, more advanced panel techniques are used, such as fixed effects, random effects, and between effects models. It is expected that bilateral trade will be positively influenced by the size of GDP of the respective countries, contiguity, a common language, a common colonial history and the entry into force of a preferential trade agreement. A larger distance between the countries and being landlocked usually exert a negative impact on trade flows.

¹⁶⁹ Cariforum states: Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, the Dominican Republic, Grenada, Guyana, Jamaica, Saint Lucia, Saint Vincent and the Grenadines, Saint Christopher and Nevis, Suriname, and Trinidad and Tobago. At the time of writing, Haiti was supposed to join the agreement soon.

¹⁷⁰ The source for the data in the two paragraphs is: WTO (2012a). The customs union with San Marino was notified to the WTO too late to be included in the study.

The results for OLS (see Table 4.2) confirm the hypothesis stated in the paragraph above. The most influential variable is that on the GDP of a European Union country ($\ln\text{GDP}_{it}$), with a coefficient of 1.138. It follows that the higher the GDP is, the higher is mutual trade, but also that the GDP of a European Union country influences trade more than the GDP of the trading partner country (coefficient: 0.783). Two countries sharing a border (Adjacent_{ij}) also has an important impact on trade, with a coefficient of 0.906. It is possible to convert this by taking $e^{0.906} = 2.474$, which yields $(2.474 - 1.000) * 100 = 147\%$. Having a common border consequently increases trade between two countries by 147% on average, meaning that the trade volume more than doubles in this case. A common official language (LangOff_{ij} ; 0.451) or a common language spoken by at least a small part of the population (LangEth_{ij} ; 0.350) also influence trade flows, but far less than other factors. Sharing a colonial past (Colony_{ij}), however, is not a significant variable and is therefore not important for the further analysis. As expected, a larger distance ($\ln\text{Dist}_{ij}$) lowers trade between two countries (-0.521) as does being landlocked (Landl_{ij} , -0.353). However, the distance between two countries is a greater determinant of trade than being landlocked (i.e., having no sea border).

With the exception of one variable (Colony_{ij}), all variables are highly significant at the 1% level. The model also fits the data very well with an R^2 of 0.83. For a precise overview see Table 4.2.

Table 4.2: Gravity estimations for EU-15 countries, applying ordinary least squares

Variable	Coefficient	Standard error
$\ln\text{GDP}_{it}$	1.138***	0.015
$\ln\text{GDP}_{jt}$	0.783***	0.015
$\ln\text{Dist}_{ij}$	-0.521***	0.024
LangOff_{ij}	0.451***	0.072
LangEth_{ij}	0.350***	0.070
Colony_{ij}	0.070	0.082
Adjacent_{ij}	0.906***	0.167
Landl_{ij}	-0.353***	0.043
PTA_{ijt}	0.240***	0.052
R^2	0.83	

Intercept and year controls (μ_t) are not recorded.

*** denotes significance at the 1% level, ** denotes significance at the 5% level,

* denotes significance at the 10% level.

The decisive dummy variable PTA_{ijt} is highly significant at the 1% level and its coefficient γ takes the value 0.240. Consequently, trade of the European Union with its trading partners increases by $e^{0.240} = \text{factor } 1.27$. Converting this by taking $(1.27-1)*100$ yields 27%. It follows that the preferential trade agreements increased trade by 27%, which is a remarkable level.

The analysis with OLS robust yields nearly the same outcome as OLS. The gravity equation variables are again highly significant at the 1% level. For an overview of the results see Table 4.3.

Table 4.3: Gravity estimations for EU-15 countries, applying ordinary least squares with robust standard errors

Variable	Coefficient	Standard error
$\ln\text{GDP}_{it}$	1.138***	0.014
$\ln\text{GDP}_{jt}$	0.783***	0.014
$\ln\text{Dist}_{ij}$	-0.521***	0.026
LangOff_{ij}	0.451***	0.094
LangEth_{ij}	0.350***	0.092
Colony_{ij}	0.070	0.113
Adjacent_{ij}	0.906***	0.325
Landl_{ij}	-0.353***	0.048
PTA_{ijt}	0.240***	0.045
R^2	0.83	

Intercept and year controls (μ_t) are not recorded.

A cluster regression (see Table 4.4) gives similar results as OLS and OLS robust, i.e., the PTA_{ijt} dummy variable is highly significant and has the same coefficient value.

Table 4.4: Gravity estimations for EU-15 countries, applying a cluster regression

Variable	Coefficient	Standard error
$\ln\text{GDP}_{it}$	1.138***	0.047
$\ln\text{GDP}_{jt}$	0.783***	0.045
$\ln\text{Dist}_{ij}$	-0.521***	0.088
LangOff_{ij}	0.451	0.316
LangEth_{ij}	0.350	0.316
Colony_{ij}	0.070	0.397
Adjacent_{ij}	0.906	0.825
Landl_{ij}	-0.353**	0.159
PTA_{ijt}	0.240***	0.083
R^2	0.83	

Intercept and year controls (μ_t) are not recorded.

A cluster regression means that country-pairs are independent vis-à-vis other country-pairs but not always within country-pairs. A country-pair would be Austria-Algeria for example. However, the results for the cluster regression in comparison to OLS and OLS robust are different with regard to the variables LangOff_{ij} , LangEth_{ij} and Adjacent_{ij} , which are not significant anymore.

Fixed effects were added to the model to account for country-pair (for example Austria-Algeria or Germany-Chile) specific effects.¹⁷¹ A random effects estimator instead contains all assumptions of the fixed effects model, but in addition the unobserved individual effects are uncorrelated with each explanatory variable (like $\ln\text{GDP}_{it}$, $\ln\text{GDP}_{jt}$, etc.). Thus, if such correlations are present, the fixed effects estimator should be used. The existence of this correlation is tested by the Hausman test. The Hausman test would suggest the use of a fixed effects model for this sample, as the probability value is 0.000. However, both the fixed effects and the random effects models do not yield useful results, as in both cases the coefficient of the dummy variable PTA_{ijt} proves to be positive, but the variable is insignificant (see Table 4.5).

It is questionable, whether the use of a fixed effects model is appropriate in order to obtain correct estimations. Pluemper and Troeger (2004) find in their paper that if a variable changes slowly over time, like the variable PTA_{ijt} used in this chapter, the variable could be highly co-linear with the fixed effects. This increases the likelihood that the use of a fixed effects model yields odd estimates for those variables. For an estimation of slowly changing variables, fixed effects can be very inefficient. This caveat has to be kept in mind for the subsequent analysis in the sections below.

In addition to the fixed effects estimation and the random effects estimation, a so-called between effects estimation is carried out.¹⁷² The intuition behind the between effects estimator is to control for differences between countries where a preferential trade agreement has already entered into force and those countries which do not yet have a preferential trade agreement.

Table 4.5: Gravity estimations for EU-15 countries, applying the fixed, random, and between effects model

Econometric method	Coefficient PTA_{ijt}	Standard error
Between effects	0.783**	0.333
Fixed effects	0.032	0.029
Random effects	0.039	0.029

Intercept, year controls (μ_t) and other coefficients/variables are not recorded.

The analysis for between effects (see Table 4.5) shows a large effect concerning the PTA_{ijt} variable, which is equal to $e^{0.783} = 2.188$. Converting this into percentage changes, a preferential trade agreement thus increases trade by 118%. This implies that a preferential trade agreement augments trade enormously and significantly more than in the OLS estimation in Table 4.2.

¹⁷¹ According to Wooldridge (2002), a pooled OLS estimator which is based on the time-demeaned variables is defined as the within estimator or fixed effects estimator. This definition comes from the fact that OLS on the time-demeaned data uses the variation in the dependent and independent variables within each cross-sectional observation.

¹⁷² The between estimator is received as an OLS estimator on the cross-sectional equation (with an intercept included), meaning that averages over time are taken for the dependent and independent variables and then a cross-sectional regression is run. In other words the between estimator conducts a regression on the averages of a group. See Wooldridge (2002).

4.3.2 Results for the individual EU-15 countries

In addition to the analysis of aggregate EU-15 trade as conducted in section 4.3.1, it can also be tested whether particular European countries have benefited from the preferential trade agreements. For Austria, Belgium, Finland, France, Germany, Ireland, Luxemburg (see caveat below), Sweden, and the United Kingdom, the variable PTA_{ijt} is significant with a positive coefficient when using OLS and OLS with robust standard errors (see Table 4.6). In contrast, the estimation results for PTA_{ijt} for Denmark, Italy, the Netherlands (see caveat in paragraph below), Portugal, and Spain are not significant. Greece is the only country where the result for OLS with robust standard errors is negative and significant, implying that the trade agreements were actually negative for Greece, whereas the results for OLS indicate that the variable is negative but insignificant. There is a contradictory result for Luxembourg too, as PTA_{ijt} is significant in the fixed effects estimation with a negative coefficient, but significant with a positive coefficient in the between effects estimation.

When only considering the results of the OLS, Germany is among the top beneficiaries of the preferential trade agreements with a coefficient for PTA_{ijt} of 0.576, just followed by Luxemburg with 0.548 and Belgium with 0.512 (see Table 4.6). Ireland and Sweden also experience large benefits (the value of the coefficient is 0.467 and 0.427 respectively). For the other countries, the value is either lower or insignificant. Converting the coefficient of Germany, for example, shows that Germany experienced a 77.9% increase of trade ($e^{0.576}=1.779$; $(1.779-1.000)*100=77.9\%$) as a result of preferential trade agreements with the respective countries. Hence, Germany greatly benefited from the introduction of these agreements.

The application of fixed effects, random effects, and between effects models is in most cases not conducive to obtaining better results, as the variable PTA_{ijt} is insignificant with very few exceptions. One exception is Germany, as fixed, random, and between effects estimations are significant with a positive coefficient of PTA_{ijt} , while the other exception is Ireland, where the results for random and between effects of PTA_{ijt} are also significant (with a positive coefficient). For Germany the coefficients vary greatly from 0.118 for fixed effects to 1.813 for between effects and almost the same applies to Ireland. For the Netherlands, there is supporting evidence of a positive effect of the preferential trade agreements, as the random effects and fixed effects estimations are positive and significant, while this is not the case for ordinary least squares. The coefficient is 0.141 for the fixed and 0.142 for the random effects estimation, while the estimation for between effects is insignificant.

Table 4.6: Gravity estimations for the individual EU-15 countries, variable PTA_{ijt} only

	OLS	OLS robust	Fixed effects	Random effects	Between effects
Austria	0.335**	0.335***	0.115	0.119	0.953
	0.136	0.106	0.075	0.075	1.102
Belgium	0.512***	0.512***	-0.030	-0.025	2.154
	0.160	0.150	0.065	0.065	1.366
Denmark	0.150	0.150	-0.083	-0.079	0.786
	0.147	0.130	0.078	0.078	1.126
Finland	0.269*	0.269***	0.126	-0.729	0.671
	0.138	0.096	0.095	0.686	0.952
France	0.202*	0.202**	-0.024	-0.023	0.880
	0.120	0.096	0.052	0.054	1.107
Germany	0.576***	0.576***	0.118**	0.124***	1.813*
	0.116	0.082	0.048	0.048	0.804
Greece	-0.244	-0.244**	0.004	-0.020	-1.183
	0.209	0.119	0.179	0.189	1.277
Ireland	0.467***	0.467***	0.184	0.223*	1.317*
	0.123	0.148	0.114	0.118	0.611
Italy	-0.047	-0.047	-0.011	-0.013	-0.141
	0.119	0.110	0.053	0.055	0.961
Luxembourg	0.548***	0.548***	-0.289*	-0.173	2.802**
	0.195	0.156	0.163	0.167	0.821
Netherlands	0.154	0.154	0.141**	0.142**	0.188
	0.120	0.107	0.061	0.061	1.023
Portugal	0.031	0.031	-0.066	-0.056	0.270
	0.215	0.149	0.165	0.177	1.334
Spain	0.128	0.128	0.058	0.063	0.312
	0.150	0.109	0.113	0.115	1.064
Sweden	0.427***	0.427***	0.182	0.212	1.100
	0.148	0.096	0.140	0.137	0.757
United Kingdom	0.357***	0.357***	0.058	0.062	1.261
	0.114	0.096	0.060	0.060	1.055

The coefficient is always shown in the first line, while its standard error is shown in the second line for each country. Variables which are not reported: all variables except for PTA_{ijt} .

It follows that for the majority of EU-15 countries, i.e., nine out of fifteen, the preferential trade agreements clearly show a positive effect. For five countries there is no clear outcome, whereas only for one country, namely Greece, the effects seem to be detrimental. This yields the conclusion, not only in general, but also for most of the individual EU-15 countries in particular, that preferential trade agreements had a positive effect on trade.

4.3.3 Results for non-EU countries

The analysis of the contractual partner countries shows a more mixed picture than in the EU country analysis. The variable PTA_{ijt} for Chile, Croatia (for Croatia only OLS, not OLS with robust standard errors), FYROM, Mexico, South Africa, and Turkey is significant with a positive coefficient when applying OLS and OLS with robust standard errors, see Table 4.7. For the other countries (Algeria, Egypt, Israel, Jordan, Morocco, and Tunisia) the variable PTA_{ijt} is insignificant with one exception: For Lebanon PTA_{ijt} in the OLS regression is significant with a negative coefficient, whereas it is insignificant for OLS with robust standard errors. More surprising is the result when applying the fixed effects model, as the variable PTA_{ijt} is significant with a positive coefficient for all countries.

Table 4.7: Gravity estimations for the individual non-EU (partner) countries, only variable PTA_{ijt} is shown

	OLS	OLS robust	Fixed effects	Random effects
Algeria	0.386	0.386	1.081***	0.004
	0.255	0.247	0.247	0.242
Chile	0.670***	0.670***	1.144***	2.384**
	0.167	0.197	0.143	1.038
Croatia	0.390*	0.390	1.127***	0.318
	0.227	0.348	0.247	0.284
Egypt	0.054	0.054	0.996***	0.073
	0.149	0.177	0.164	0.193
FYROM	1.274***	1.274***	0.892**	0.411
	0.394	0.488	0.444	0.286
Israel	0.065	0.065	0.261**	0.158
	0.222	0.226	0.106	0.175
Jordan	-0.222	-0.222	0.695***	-0.222
	0.209	0.186	0.247	0.189
Lebanon	-0.334*	-0.334	0.431**	-0.512**
	0.191	0.207	0.210	0.220
Mexico	0.756***	0.756***	0.925***	-0.690
	0.194	0.188	0.137	0.582
Morocco	0.263	0.263	0.795***	0.025
	0.171	0.207	0.132	0.090
South Africa	0.459**	0.459**	1.207***	0.491
	0.202	0.217	0.132	0.330
Tunisia	0.129	0.129	0.317**	-0.194
	0.211	0.236	0.127	0.143
Turkey	1.340***	1.340***	1.496***	0.377***
	0.131	0.137	0.106	0.091

The coefficient is always shown in the first line, while its standard error is shown in the second line for each country. Variables which are not reported: all variables except for PTA_{ijt} .

When only considering the results for OLS, Turkey is among the top beneficiaries of the preferential trade agreements, with a coefficient of 1.340, followed by FYROM with 1.274. Mexico (0.756), Chile (0.670), and South Africa (0.459) also had a remarkable trade volume increase above average. Converting, for example, the coefficient of Turkey ($e^{1.340}=3.819$; $(3.819-1.000)*100=282\%$) shows that with 282% Turkey benefited immensely from the customs union with the EU.

For very few countries, namely Chile and Turkey, even in the random effects model the coefficient of the variable PTA_{ijt} has a positive sign and the variable is highly significant, which gives supporting evidence of a positive effect on trade resulting from preferential trade agreements. When looking at the coefficients of Turkey, the fixed effects estimator reports a slightly higher effect than the OLS estimator (coefficient: 1.496 versus 1.340 respectively), while the random effects estimator finds a lower effect (0.377). For Chile, the coefficients of the fixed effects estimator (1.144) and the random effects estimator (2.384) are also remarkably high. In this context, the preferential trade agreement with Lebanon poses an exception, as PTA_{ijt} for random effects is significant with a negative coefficient in this case, which is contradictory to the fixed effects results (significant with a positive coefficient). The use of between effects is in general not useful, as results are without any exception insignificant. See Table 4.7 for precise results.

4.4 Robustness analysis

This section provides an additional analysis from different perspectives, such as estimations for the aggregate of EU-27 countries instead of the EU-15 countries. The section also gives a cross-sectional analysis for the EU-15 countries.

4.4.1 Results for the EU-27 countries

At the time the preferential trade agreements entered into force, most of the 12 new European Union member states (called NMS-12) had not even joined the European Union. More specifically, Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, and Slovenia joined in early 2004, whereas Bulgaria and Romania joined in early 2007. Despite that, this section analyses how the preferential trade agreements affected the trade of the EU-27 countries. Therefore, the estimations carried out in this section (4.4.1) can be considered as a theoretical exercise.

The variable PTA_{ijt} , when using OLS, OLS with robust standard errors, and the cluster regression, is significant and has a positive coefficient (see Tables 4.8, 4.9 and 4.10). The coefficient of PTA_{ijt} for the EU-27 (0.144) is much smaller than in Table 4.2 (0.240; EU-15 sample), which makes perfect sense, because the estimator is actually an average. Intuitively, when “adding” the 12 new member states (NMS-12) to the EU-15, the impact of the

preferential trade agreements should be much smaller. This robustness analysis therefore works well. The coefficients of the other variables have - as expected - similarities with the ones from Table 4.2, Table 4.3 and Table 4.4. While the coefficients for the GDP of the EU country ($\ln\text{GDP}_{it}$) and the GDP of the trading partner country ($\ln\text{GDP}_{jt}$) have almost the same value, the distance between two countries ($\ln\text{Dist}_{ij}$) has a larger negative impact on the EU-27, while being landlocked (Landl_{ij}) has a very small negative influence. A more remarkable difference is that sharing a colonial history (Colony_{ij}) actually makes an impact on the EU-27, because it is significant. It influences trade negatively in the OLS and OLS robust model. The model overall fits the data well with an R^2 of 0.80.

Table 4.8: Gravity estimations for EU-27 countries, applying ordinary least squares

Variable	Coefficient	Standard error
$\ln\text{GDP}_{it}$	1.154***	0.010
$\ln\text{GDP}_{jt}$	0.831***	0.015
$\ln\text{Dist}_{ij}$	-0.857***	0.023
LangOff_{ij}	0.249***	0.090
LangEth_{ij}	0.528***	0.082
Colony_{ij}	-0.309***	0.102
Adjacent_{ij}	1.955***	0.137
Landl_{ij}	-0.064*	0.037
PTA_{ijt}	0.144***	0.054
R^2	0.80	

Intercept and year controls (μ_t) are not recorded.

Table 4.9: Gravity estimations for EU-27 countries, applying ordinary least squares (OLS) with robust standard errors

Variable	Coefficient	Standard error
$\ln\text{GDP}_{it}$	1.154***	0.010
$\ln\text{GDP}_{jt}$	0.831***	0.015
$\ln\text{Dist}_{ij}$	-0.857***	0.024
LangOff_{ij}	0.249***	0.088
LangEth_{ij}	0.528***	0.078
Colony_{ij}	-0.309***	0.120
Adjacent_{ij}	1.955***	0.211
Landl_{ij}	-0.064*	0.036
PTA_{ijt}	0.144***	0.046
R^2	0.80	

Intercept and year controls (μ_t) are not recorded.

The cluster regression (Table 4.10) gives similar results compared to when using the OLS and OLS robust model (Tables 4.8 and 4.9). However, the level of significance is lower and in some

cases the variables are not significant. This concerns the variables $LangOff_{ij}$, $Colony_{ij}$, and $Landl_{ij}$. The values of the coefficients are nevertheless unchanged.

Table 4.10: Gravity estimations for EU-27 countries, applying a cluster regression

Variable	Coefficient	Standard error
$\ln GDP_{it}$	1.154***	0.031
$\ln GDP_{jt}$	0.831***	0.045
$\ln Dist_{ij}$	-0.857***	0.078
$LangOff_{ij}$	0.249	0.292
$LangEth_{ij}$	0.528**	0.260
$Colony_{ij}$	-0.309	0.426
$Adjacent_{ij}$	1.955***	0.632
$Landl_{ij}$	-0.064	0.109
PTA_{ijt}	0.144*	0.082
R^2	0.80	

Intercept and year controls (μ_t) are not recorded.

The coefficient of PTA_{ijt} for the fixed effects, random effects, and between effects model is positive, but it is not significant and consequently it is not possible to prove an effect of PTA_{ijt} on trade for these econometric methods (see Table 4.11).

Table 4.11: Gravity estimations for EU-27 countries, applying the fixed, random, and between effects model

Econometric method	Coefficient PTA_{ijt}	Standard error
Fixed effects	0.026	0.038
Random effects	0.032	0.038
Hausman test: $Prob > \chi^2 =$	0.0001 (test result)	
Between effects	0.444	0.316

Intercept, year controls (μ_t) and other variables/coefficients are not recorded.

4.4.2 Cross-sectional analysis for the EU-15 countries

In addition to the robustness analysis above, a cross-sectional analysis is conducted which omits the time-series aspect of the panel data set. This means that each of the 14 years (1994-2007) in turn is analysed separately, but nevertheless the regression of course includes all EU-15 countries (Austria, Belgium, Denmark, etc.) with all contractual partners (Algeria, Chile, Mexico, etc.). Thus, the model is first run with data from 1994 only, then with data from 1995 only, until all 14 years have been estimated separately. This essentially answers the question whether trade is higher for countries with PTAs or without PTAs in any particular year.

Both the OLS and OLS with robust standard errors regressions show that for all years from 1998 to 2003 the variable PTA_{ijt} is significant with a positive coefficient (see Table 4.12). The variables which are significant have a coefficient value of around 0.30 on average, but they are exceptionally high in 2003 with a value of 0.47. Converting this value by taking $e^{0.473} = 1.605$ means that having a preferential trade agreement in 2003 compared to not having one leads to a 60.5% higher trade between the contractual partners, contrasted by an increase of around $e^{0.30} = 1.350 \Rightarrow 35\%$ for the preceding years. Only in the years 1996, 1997, and 2004, which are the years when the first preferential trade agreements were introduced or were almost all in place (2004), the variable PTA_{ijt} is not significant. The early and late years of the sample (1994-1995 and 2005-2006) were dropped. One important caveat has to be kept in mind. Cross-sectional analyses have the limitation that they obviously lose observations that could be used in the regression, which is negative for the robustness of the result. In addition, time variation is not accounted for anymore. For brevity, Table 4.12 only shows the results of the decisive variable PTA_{ijt} .

Table 4.12: Gravity estimations for EU-15 countries - cross-sectional analysis

Year	Econometric method	Coefficient of PTA_{ijt}	Standard error
1994-1995		dropped	
1996	OLS	0.142	0.260
	OLS robust	0.142	0.199
1997	OLS	0.177	0.275
	OLS robust	0.177	0.202
1998	OLS	0.319*	0.167
	OLS robust	0.319**	0.143
1999	OLS	0.315*	0.169
	OLS robust	0.315**	0.147
2000	OLS	0.326**	0.136
	OLS robust	0.326**	0.133
2001	OLS	0.318***	0.118
	OLS robust	0.318***	0.121
2002	OLS	0.261**	0.121
	OLS robust	0.261**	0.116
2003	OLS	0.473***	0.160
	OLS robust	0.473***	0.141
2004	OLS	0.117	0.227
	OLS robust	0.117	0.230
2005-2006		dropped	

Intercept, year controls (μ_t) and other variables/coefficients are not recorded.

4.5 Summary

In this chapter the effect of preferential trade agreements on the volume of trade between the European Union and its contractual partners was investigated by using an empirical gravity model. The application of different econometric techniques delivers the conclusion that preferential trade agreements mostly had a very positive effect on trade. Consequently, European Union preferential trade agreements proved to be successful. This applies especially to the aggregate of EU-15 countries, where OLS, OLS robust, a cluster regression, and the between effects estimations show positive and highly significant results, whereas for fixed and random effects models the estimations are positive but not significant.

Considering a ranking of the main trading partner countries (outside the EU) of the aggregate of EU-27 countries in 2007, Turkey is the only country among those with a recent preferential trade agreement with the EU to be among the top ten importers and exporters. At the individual EU country level, very few contractual partners of preferential trade agreements are among the main ten trading partners of the EU countries. For example, only Greece has Turkey as a main trading partner, while among the twelve new member states (NMS-12), Turkey is a top trading partner for Bulgaria and Romania, Croatia for Slovenia, and Israel for Cyprus. In general, most main trading partners are other EU countries or the United States of America, China or Russia.¹⁷³ Consequently, there is still room for intensifying trade relations.

Both for the sum of the EU-15 countries and for the majority of individual EU-15 countries, the preferential trade agreements have been beneficial for increasing trade. It can be shown that for Austria, Belgium, Finland, France, Germany, Ireland, Luxemburg, Sweden, and the United Kingdom the dummy variable PTA_{ijt} has a positive coefficient and is significant when using OLS and OLS with robust standard errors. For Germany and Ireland there is even stronger evidence for the beneficial impact of preferential trade agreements, as for Germany the fixed, random, and between effects estimations and for Ireland the random and between effects estimations show a positive and significant result, while for other countries the fixed, random, and between effects estimations are insignificant. The analysis for Denmark, Italy, the Netherlands, Portugal, and Spain yields insignificant results. Greece is the only country for which the result for OLS with robust standard errors is negative and significant, implying that the preferential trade agreements had a negative impact on trade (i.e. decreasing trade) for Greece. It follows that for the majority of EU-15 countries, i.e., 9 out of 15, the preferential trade agreements show clearly a positive effect. For five countries there is no clear outcome, whereas only for one country, namely Greece, the effects seem to be detrimental to trade.

Preferential trade agreements were also favourable to the individual partner countries outside the EU. This analysis shows a more mixed picture than for the EU-15 countries. Chile, Croatia, FYROM, Mexico, South Africa, and Turkey benefited from the trade agreements, as the

¹⁷³ See European Commission, Eurostat (2009), for a detailed list of trading partners and data of this paragraph.

dummy variable PTA_{ijt} is significant with a positive coefficient when applying OLS and OLS with robust standard errors (caveat: for Croatia only OLS gives a positive and significant result). For Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, and Tunisia PTA_{ijt} is insignificant, with the exception of Lebanon, where PTA_{ijt} (for OLS only) is significant with a negative coefficient. When applying the random effects model for Chile and Turkey, the variables are highly significant with a positive coefficient. This leads to the conclusion that the evidence for the preferential trade agreements having had a beneficial impact on trade is very strong for Chile and Turkey.

In summary, the preferential trade agreements have increased the trade between the European Union and its contractual partners. The results are statistically and economically significant and appear to be robust.

Conversely, the trade preferences for ACP countries and the generalised system of preferences had a less significant impact on trade. This result renders it important to address the question as to why preferential trade agreements were so successful, whereas the success of trade preferences for ACP countries or the generalised system of preferences (GSP) was limited¹⁷⁴? The GSP system and preferences for ACP countries are of a different nature than free trade agreements or customs unions (preferential trade agreements). While the latter ones result in the mutual opening of markets (subject to certain transitional periods) and therefore amount to a substantial or complete lowering of trade barriers, the former ones only result in a partial opening of markets. By granting unilateral preferences to developing countries the incentive of the protected countries to increase domestic competitiveness is lowered. This might not be beneficial for the overall economic development of the country, thereby eroding incentives for domestic trade liberalization. In addition, goods from some developing countries (consisting mostly of agricultural rather than manufactured goods)¹⁷⁵ are often less competitive than those of more advanced developing or industrial countries and the EU has concluded preferential trade agreements mostly with advanced developing or industrial countries¹⁷⁶. This is an additional disadvantage for developing countries. All these factors can contribute to the relative success of preferential trade agreements. Perhaps the recent Economic Partnership Agreements (concluded with the Cariforum States, for example) can change the trend in the future.

In order to directly compare the empirical results of chapter 4 (describing the impact of the EU's preferential trade agreements on trade) with trade preferences for developing countries, one would have to estimate the gravity equation for all ACP countries and the 176 GSP countries, which is beyond the scope of this study. However, when looking at the increase of EU-15¹⁷⁷ exports to and imports from the countries with which the EU has preferential trade

¹⁷⁴ See chapter 3 for details.

¹⁷⁵ See Brenton et al. (1997), p. 328.

¹⁷⁶ See Table 4.1 for a list of countries.

¹⁷⁷ The aggregate of EU-15 countries and not the EU-27 is appropriate, as the main part of chapter 4 refers to the EU-15 countries only and the 12 new European Union member states (NMS-12) did not join before 2004 and

agreements as a share of EU-15 exports to and imports from the rest of the world outside the prospective EU-25¹⁷⁸, it can be shown that¹⁷⁹ these countries' share in trade increased from 10.78% in 1995 to 12.07% in 2007, despite the absolute increase of world trade. This is the case both for imports (from 8.97% in 1995 to 10.75% of EU-15 imports from outside the EU-25 in 2007) and exports (from 12.53% in 1995 to 13.55% of EU-15 exports to outside the EU-25 in 2007), with the increase of imports being slightly larger. Imports also increased more constantly than exports, which fluctuated more strongly while increasing over time. For 2010, the figures are similar, with stronger exports (14.06%) and slightly lower imports (9.71%) and lower imports and exports combined (11.79%) than in 2007. Nevertheless, all figures are clearly above the levels of 1995. EU trade with the countries with which it concluded preferential trade agreements therefore increased more than world trade for the period taken into account.

While chapter 3 dealt with EU trade preferences vis-à-vis developing countries and chapter 4 with the EU's preferential trade agreements, chapter 5 gives insights into EU anti-dumping actions, which is a core element of EU trade policy.

2007, which is too late for a data range from 1994 to 2007. At the time the preferential trade agreements entered into force, most of the NMS-12 had not joined the European Union.

¹⁷⁸ Data for the EU-15 trade with countries outside the EU-27 are not available from Eurostat for the years 1995 to 1998, which is why the EU-25 is used as a proxy. For the later years 1999 to 2007 or 2010 it can be proven that the data of the EU-27 and EU-25 are very similar in every year.

¹⁷⁹ According to data from Eurostat for the years 1995 to 2007 which is (almost) the timeframe of chapter 4. Data for 2010 is from Eurostat as well, while 1994 was not available.

5 Which countries benefit from EU anti-dumping actions?

5.1 Introduction

The European Union is the third most frequent user of anti-dumping measures worldwide, after India and the United States,¹⁸⁰ and “[a]mong the trilogy of trade remedy regimes - countervailing duty, safeguard and anti-dumping measure - anti-dumping measures are by far the remedy of choice”.¹⁸¹

An anti-dumping (AD) investigation in the European Union (EU) is initiated after a complaint has been lodged with the EU Commission by an EU producer¹⁸², an EU country, or by the EU Commission itself.¹⁸³ The EU Commission is responsible for the administration of the entire process and an anti-dumping investigation may take a maximum of 15 months. Four conditions are investigated and have to be fulfilled:

1. Exports to the EU must be dumped. A foreign company is dumping if a product is exported to the EU at a price which is lower than its domestic price or cost of production plus general and administrative costs and profit.
2. The EU producers have to be materially injured. The EU Commission investigates the impact on the EU producers, for example, whether dumped imports have increased significantly in terms of market share or absolute quantities and to what extent the import prices are below the prices of EU producers.
3. A causal link between dumped imports and the injury must be shown.
4. Anti-dumping measures may not be contradictory to the “overall economic interests in the EU”. At this stage, interests of EU producers which require the imported product as a pre-product, and EU end-consumers’ interests are also taken into account.

For an assessment of the dumping margin, a comparison has to be drawn between the price of the product in the exporting non-EU country and the price at which it is offered in the EU. The amount of the duty is calculated according to the dumping margin, with one exception: If a lower rate is sufficient to “remove the injury”, the lower rate is applied; this is called the “lesser-duty rule”. Then, the “anti-dumping duty [can be] imposed by the Council [of Ministers], acting

¹⁸⁰ See Bown (2007), p. 8. Data for the years 1995-2004.

¹⁸¹ Howse, Trebilcock (2005), p. 232.

¹⁸² If the complaint is lodged by EU producers, the producers have to account for at least 25% of total EU production of the product and not be opposed by EU companies which account for a production volume that is larger than that of the complainants.

¹⁸³ The sources of the paragraphs of the introductory chapter explaining the procedure (for example conditions, dumping margin, duties, collection, length and review) of AD investigations are: European Commission, DG Trade (2010a, 2010b, 2010c).

on a proposal submitted by the Commission after consultation of the Advisory Committee¹⁸⁴. The proposal shall be adopted by the Council [of Ministers] unless it decides by a simple majority to reject the proposal, within a period of one month after its submission by the Commission.”¹⁸⁵ The European Commission is therefore central for the AD investigation and decision to impose AD measures. Once it has decided to take anti-dumping measures there are several different forms of measures, for example:

- Ad-valorem duties (AVD) are the most frequently applied duties. The duty is calculated as a percentage of the net free-at-frontier (c.i.f.) price of the imported good.
- Specific duties (SD) impose a fixed value for a specified amount of imported goods (defined by weight, volume or unit). For example 50€ per ton of a product. In this sample, AD measures were only defined by € per ton/kilo, with one single exception where the duty was per unit. Specific duties are rarely used in comparison to ad-valorem duties.
- Price undertakings (PU) are a promise by a foreign exporter to charge minimum import prices. These measures are also rarely used.

Ad-valorem duties and specific duties are collected by customs authorities of EU countries. The measures are imposed for a maximum of five years or less, but may be reviewed and adjusted, if, for example, conditions of the dumping exporters have changed. There is also a possibility to impose only preliminary AD measures for one year or two years only, which expire after that time, even though the vast majority of AD measures are imposed for five years.¹⁸⁶ The EU anti-dumping regulations are in general compatible with WTO rules (article VI on anti-dumping). Services are never part of an AD investigation as these only apply to products.

One general caveat has to be kept in mind in examining the topic of this chapter. It is always difficult to judge who benefits and who loses in an anti-dumping action¹⁸⁷. To benefit means having an advantage over other directly competing companies/countries. Indirect negative effects for the entire economy of a country are in general much more difficult to assess. This is because, on the one hand, an importing country’s consumers benefit from reduced import prices, and, on the other hand, the industry of the importing country might get harmed. In the end, another factor is reciprocity, i.e., if one country imposes anti-dumping measures, the other one might react by trying to impose anti-dumping measures as well.

AD actions were examined before by Brenton (2001), who analyses data for a range of cases initiated by the European Union between 1989 and 1994. He finds that anti-dumping policies cause trade diversion and that trade diversion is primarily to non-EU suppliers. A previous

¹⁸⁴ The Advisory Committee is chaired by the EU Commission and consists of representatives of each EU member state.

¹⁸⁵ Official Journal of the European Union (2009, L343), p. 62.

¹⁸⁶ The different length of AD measures is accounted for in the dataset.

¹⁸⁷ AD action is a collective term in order to describe the entire process of AD procedures and therefore the combination of AD investigations and AD measures.

study by Prusa (1997) investigates AD actions initiated in the United States between 1980 and 1988. Prusa (1997) finds that AD actions substantially restrict trade from named countries¹⁸⁸, primarily for those cases with high duties, and that AD investigations which are rejected still have an important impact on named country trade. Additionally, there is substantial trade diversion from named to non-named countries. The diversion is more substantial the larger is the estimated duty. Finally, aggressive use of AD law by U.S. producers is beneficial for non-named countries which are active in the areas under investigation. Park (2009) examines Chinese anti-dumping actions between 1997 and 2004. While China is a main target of AD investigations for most of its trading partner countries, China itself has begun using AD actions intensively. Park (2009) investigates the impact of China's AD activities on trade and shows that AD protection has significant trade depressing and trade diversion effects (from named to non-named countries).

This chapter proceeds as follows: In section 5.2 the approach used in the analysis and the data sources are explained. Section 5.3 is the main section and examines the imports of EU-15 countries¹⁸⁹ from named countries (countries which are accused of dumping products), non-named countries (countries which are at the same time not accused of dumping products and not part of the EU-15) and EU-15 internal imports. This section tries to show which countries (aggregates) actually benefit from anti-dumping actions. In section 5.4 of this chapter, the sample of non-named countries is further split into the – at that time – future 12 new EU member states, called NMS-12¹⁹⁰ and the rest of the world. This is done in order to control whether trade is diverted from named countries to the NMS-12, i.e., whether particularly Central and Eastern Europe have benefited disproportionately from AD measures in comparison to other non-named countries. Section 5.5 takes a detailed look at all investigations in which China is a named country in the anti-dumping investigation. China is particularly interesting for research as it is one of the largest trading partners of the EU (especially with regard to imports from China) and at the same time part of many AD investigations. Section 5.6 finally summarises.

5.2 Empirical approach

This section explains the model, followed by a brief description of the choice of variables and data sources.

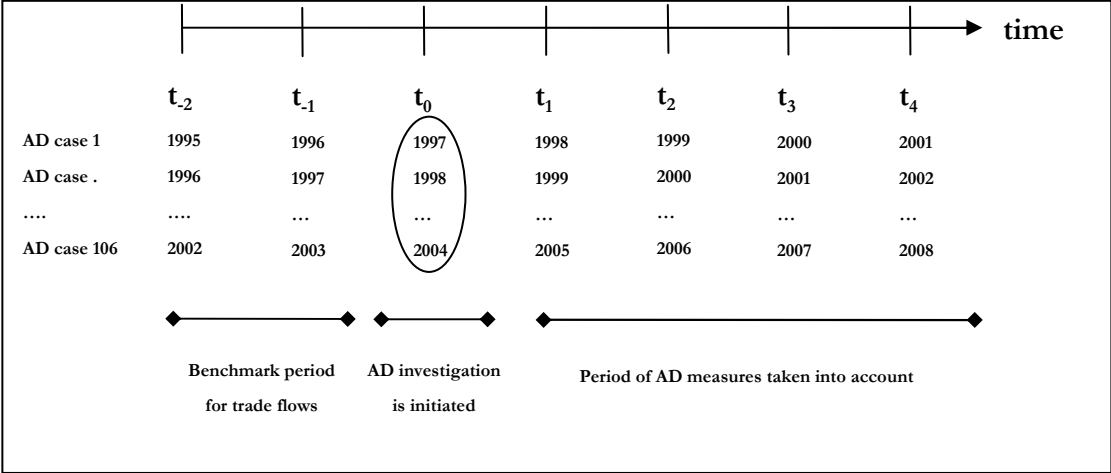
¹⁸⁸ The term named countries is used in an AD investigation to define countries which are accused of dumping products while non-named countries are countries which are at the same time not accused of dumping products. For clarification: both non-named countries and named countries are not part of the EU-15 throughout this chapter. The terms “named countries” and “non-named countries” are frequently used in the literature, see Prusa (1997), Brenton (2001) or Park (2009).

¹⁸⁹ EU-15 member states: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom.

¹⁹⁰ NMS-12 countries: Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia, Slovenia.

106 EU anti-dumping investigations between the years 1997 to 2004 are examined. The data on imports, however, is from 1995 to 2008. This is necessary because the import data for each investigation is always based on a seven year time window, that is, two years before the AD investigation begins and four years after it (plus the year in which the investigation is initiated). In order to allow for a seven year time window, AD investigations cannot be selected from years before 1997 or later than 2004. For example, if the investigation started in 1997, there are data on imports for the two previous years 1995 and 1996 and the four consecutive years 1998, 1999, 2000 and 2001. Similarly, for an investigation starting in 2004, there are data on imports from 2002 until 2008. The main idea is that the calendar year as such is not important, but rather whether the data are from a specific period such as t_0 , (the start of investigations) or a few years before and after t_0 (see Figure 5.1). Figure 5.1 also shows that all AD investigations in this sample are initiated between the years 1997 and 2004 (see years in circle).

Figure 5.1: Chronological order of AD investigations (schematic)



The timeframe 1995 to 2008 as such has been selected because this timeframe begins after that considered by Brenton (2001) and therefore examines a different dataset. The data used in Brenton (2001) ends in 1994 and considers imports of EU-12 countries only. An additional reason is the availability of data from Eurostat, where 1995 is the first and 2008 is the most recent year available at the time of research.

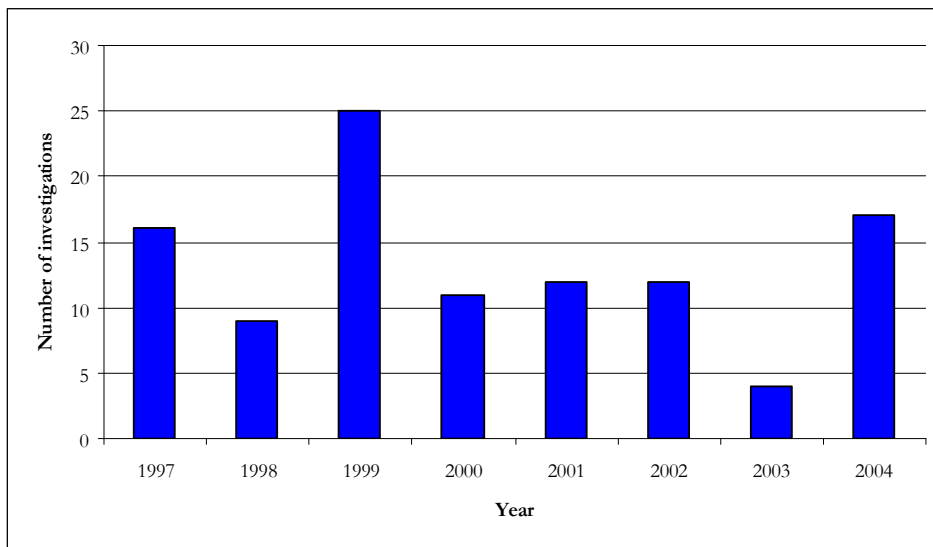
The aggregate of EU-15 countries is the decisive country aggregate in this chapter. There is no conflict with the EU enlargement in 1995 when the European Union was enlarged from 12 to 15 countries as Austria, Finland and Sweden are already part of the European Union in 1995. If research was conducted in the years before 1995, the EU-15 aggregate would be inappropriate and would have to be changed. The EU-27¹⁹¹ enlargement in 2004 and 2007 is no obstacle either, as the EU-15 aggregate is consistently used throughout the sample. AD measures can only be taken against countries which are not members of the EU, and the last AD investigation

¹⁹¹ EU-27 member countries: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom.

against an NMS-12 country is against Poland in 2002. This is two years before Poland joined the EU.

Figure 5.2 shows the distribution over time of the 106 anti-dumping investigations examined in this chapter. The number of investigations varies sharply from year to year and gives an idea of the changes in AD investigations over time, with a peak in 1999, while a large number of investigations were also initiated in 1997 and 2004

Figure 5.2: EU anti-dumping investigations between 1997 and 2004



Source: Bown (2009)

The empirical model examines whether imports depend first of all on imports of the previous period, the amount of the AD duty imposed, the number of EU and named countries involved in an investigation, and whether China is involved as a named country. It can also play a role what type of duty ($AVD_{i,t}$ or $SD_{i,t}$) or whether a price undertaking ($PU_{i,t}$) has been imposed. This is amended by time dummies and time dummies interacting with the AD decision (described below) and gives the following equation¹⁹²:

$$\ln IMP_{i,t} = \alpha + \beta_{IMP_{t-1}} \ln IMP_{i,t-1} + \beta_{IMP_{t-1}/t-2} (\ln IMP_{i,t-1} - \ln IMP_{i,t-2}) + \beta_{Duty} \ln Duty_{i,t} + \beta_{NumEUcty} NumEUcty_i + \beta_{NumNamedcty} NumNamedcty_i + \beta_{China} China_i + \beta_{time(t)} time_t + \beta_{time(t)*decision} time_t * decision_i + AVD_{i,t} + PU_{i,t} + SD_{i,t} + \mu_i + \mu_t + \epsilon_{i,t}$$

where subscript i denotes a specific case of anti-dumping investigation and t denotes time (year). $t=0,1,2,3,4$ (which can also be written: t_0, t_1, t_2, t_3, t_4). Time is standardised so that t_0 is always the year the AD investigation starts (one of the years 1997 to 2004), while $t_{-2}, t_{-1}, t_1, t_2, t_3, t_4$, describe the years prior or after an AD investigation.

¹⁹² The data sources are Bown (2009) “Global Antidumping Database” and Eurostat.

The variable $\ln\text{IMP}_{i,t}$ describes the natural logarithm of the EU-15 countries' imports at time t . The relevant product classes of imported goods are listed in Bown (2009). With this code, the data are then extracted from Eurostat. If the anti-dumping investigation refers to several, i.e., more than one, eight-digit codes of the so-called "Combined Nomenclature" (CN)¹⁹³, the individual values are summed up in order to cover the entire relevant market. Import figures are extracted from Eurostat in Euro¹⁹⁴ (called unit values) and in 100kg (called unit volumes).¹⁹⁵ It follows that one investigation may contain several named countries and products (which are however mostly within the same product category, such as different steel products or chemical products), but it could also be that only one product and one country is concerned (for example an investigation concerning only the United States about sodium metal in 2009). Unit values of one or several products and unit volumes of one or several products are never mixed up in the data. Either unit values are added to unit values or unit volumes to unit volumes. Additionally, they are always analysed separately throughout this study. When analysing EU-15 imports it is important always to note that only a small share of imports, both in terms of GDP and in terms of total imports, are concerned by the possible imposition of an anti-dumping measure, as there is always only a small range of products under investigation and not all imported products.

Another crucial variable is $\ln\text{Duty}_{i,t}$ which is the natural logarithm of the imposed duty, in case a duty has been levied. If different duties have been imposed on imports from different countries for an investigation i , the weighted average of the duty was calculated. The majority of duties consists of ad-valorem duties (AVD). For specific duties (SD) and price undertakings (PU) an AVD equivalent was calculated. Instead of using the simple natural logarithm of $\text{Duty}_{i,t}$, $\ln(1+\text{Duty}_{i,t})$ was taken. NumEUcty_i is a binary variable that takes the value one if three or more EU-15 countries or companies from EU-15 countries are listed as complainants¹⁹⁶ in the anti-dumping investigation and zero if not. Similarly, NumNamedcty_i is a binary variable that takes the value one if three or more countries are named countries in the anti-dumping investigation and zero if not. China_i is a binary variable that takes the value one if China is part of the anti-dumping investigation and zero if not. NumEUcty_i , NumNamedcty_i and China_i account for the possibility that imports could be related to factors other than the size or the imposition of the AD measure or the initiation of the AD investigation as such (the variables NumEUcty_i and NumNamedcty_i are similar to Prusa (1997) and Brenton (2001)). The intuition is that if more EU countries (NumEUcty_i) are concerned or more countries are named (NumNamedcty_i) in an

¹⁹³ The Combined Nomenclature is an 8 digit numerical coding system composed of the more common HS (Harmonized Commodity Description and Coding System) + 2 additional digits.

¹⁹⁴ Imports (in Euro) were deflated by a common deflator of the EU-15 countries, base year 2000. Source: Eurostat.

¹⁹⁵ The data structure is designed such that one row gives the data for one year for one particular case plus the lagged variables on imports. Therefore, if data are available for all years of a case in the dataset, one case has five rows and three columns each for imports from named countries, three columns for imports from non-named countries and three columns for EU-15 internal imports plus the columns for the other variables. There is no need for seven rows, because the lagged variables on imports for the two years prior to the start of an AD investigation can be written in the same row. If more than one country is named in an investigation and more than one product is concerned this does not change the data structure, as the data is added up in order to cover the entire relevant market, which is common use in literature, see for example Brenton (2001) and Park (2009).

¹⁹⁶ If the number of EU-15 countries is not available or unknown, this is counted that the variable takes the value 0.

investigation, then EU-15 imports could simply be higher in general, because of the greater number of countries, or it could be that the EU commission treats “big” cases, in which many countries are involved, differently.

The variable $time_t$ is a time dummy that takes the value one in each single year t (t_1, t_2, t_3, t_4) after the investigation and zero otherwise¹⁹⁷, whereas $time_t * decision_i$ is a variable that takes the value one in year t (t_1, t_2, t_3, t_4) after the investigation if an AD measure (ad-valorem duty, specific duty or price undertaking) was imposed in this particular year and zero otherwise. While $time_t$ examines the effect AD investigations have on imports irrespective of the investigation’s outcome, $time_t * decision_i$ takes into account if an AD measure has been imposed and in which year after the initiation of the investigation. If, for example, the measure is imposed two years after an investigation was initiated (t_2) $time_t * decision_i$ is equal to zero in t_1 , but equal to one in t_2, t_3, t_4 . In contrast, if no AD measure was imposed at all, $time_t * decision_i$ is equal to zero in t_1, t_2, t_3, t_4 .

$AVD_{i,t}$ is a binary variable that takes the value one if an ad-valorem duty was levied and zero otherwise. $PU_{i,t}$ is a binary variable that takes the value one if a price undertaking is in place and zero otherwise. $SD_{i,t}$ is a binary variable that takes the value one if a specific duty was levied and zero otherwise. μ_i denotes case specific individual effects. μ_t are time-specific effects (for each year from 1995 to 2008, also called year controls) that have been added to control for unobserved time effects. They control for the effect of possibly worldwide factors which could simultaneously affect all trade flows. Finally, $\varepsilon_{i,t}$ is the error term, which is supposed to have a constant variance and a mean of zero.

Reviews of AD investigations are excluded from the analysis, because only the trade volume changes of “freshly” started investigations shall be examined in this chapter.

5.3 Empirical results for the complete dataset

The empirical results are presented consecutively according to the three country aggregates: EU-15 imports from named countries (section 5.3.1), EU-15 imports from non-named countries (section 5.3.2) and EU-15 internal imports (section 5.3.3), with unit values as a data basis for imports. Sections 5.3.4, 5.3.5, and 5.3.6 are about the same country aggregates, but with unit volumes as a data basis for imports. Section 5.3.7 uses dynamic panel data analysis for the same three country aggregates. The separation between EU-15 imports from named countries, from non-named countries and EU-15 internal imports is done in order to examine the changes of trade flows as a result of EU anti-dumping actions for the different aggregates.

¹⁹⁷ For an investigation initiated in 2000 for example, $time_1$ is equal to one only in 2001, $time_2$ only in 2002, $time_3$ only in 2003, and $time_4$ only in 2004, but zero in the year of the investigation itself and all other years respectively.

5.3.1 Impact of AD actions on EU-15 imports from named countries (unit values)

The analysis in this section aims at identifying the impact of AD actions on the EU-15 imports from named countries, i.e., countries which are named in the AD investigation. Table 5.1 presents the results when performing the regression with ordinary least squares (abbreviated by OLS), OLS with robust standard errors (abbreviated by OLS robust), a cluster analysis, and the fixed effects model. Therefore, the table has one column for each econometric method. The effect of the lagged endogenous variable ($\ln\text{IMP}_{i,t-1}$) on current imports ($\ln\text{IMP}_{i,t}$) is fairly large with a coefficient of 0.991 for OLS, OLS robust, and cluster analysis and 0.472 for fixed effects. This indicates that there is a strong, positive relation between the imports in the current and the past period.

Table 5.1: Estimations of the effect of AD actions on EU-15 imports from named countries (unit values)

	OLS	OLS robust	Cluster analysis	Fixed effects
Variable	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)
$\ln\text{IMP}_{i,t-1}$	0.991(0.017)***	0.991(0.025)***	0.991(0.022)***	0.472(0.055)***
$\ln\text{IMP}_{i,t-1} - \ln\text{IMP}_{i,t-2}$	-0.012(0.046)	-0.012(0.078)	-0.012(0.063)	0.112(0.053)**
$\ln\text{Duty}_{i,t}$	-0.936(0.300)***	-0.936(0.324)***	-0.936(0.413)**	-1.271(0.518)**
NumEUcty_i	-0.014(0.058)	-0.014(0.059)	-0.014(0.046)	
NumNamedcty_i	-0.086(0.069)	-0.086(0.067)	-0.086(0.072)	
China_i	0.178(0.058)***	0.178(0.067)***	0.178(0.058)***	
time_1	-0.122(0.125)	-0.122(0.065)*	-0.122(0.071)*	-0.004(0.127)
time_2	-0.209(0.119)*	-0.209(0.106)**	-0.209(0.102)**	-0.101(0.130)
time_3	-0.102(0.120)	-0.102(0.077)	-0.102(0.082)	-0.044(0.136)
time_4	-0.150(0.122)	-0.150(0.082)*	-0.150(0.082)*	-0.107(0.142)
$\text{time}_1*\text{decision}_i$	-0.268(0.327)	-0.268(0.129)**	-0.268(0.143)*	-0.342(0.339)
$\text{time}_2*\text{decision}_i$	-0.170(0.327)	-0.170(0.193)	-0.170(0.208)	-0.340(0.346)
$\text{time}_3*\text{decision}_i$	-0.153(0.327)	-0.153(0.153)	-0.153(0.167)	-0.396(0.345)
$\text{time}_4*\text{decision}_i$	0.096(0.328)	0.096(0.156)	0.096(0.184)	-0.216(0.346)
$\text{AVD}_{i,t}$	0.150(0.315)	0.150(0.147)	0.150(0.181)	0.276(0.345)
$\text{PU}_{i,t}$	0.333(0.336)	0.333(0.179)*	0.333(0.213)	0.535(0.403)
$\text{SD}_{i,t}$	0.217(0.343)	0.217(0.196)	0.217(0.203)	0.431(0.435)
R^2	0.899	0.899	0.899	0.362

Standard errors are given in parentheses. Intercept and year controls (μ_t) are not recorded.

*** denotes significance at the 1% level, ** denotes significance at the 5% level,

* denotes significance at the 10% level.

The next variable in Table 5.1, the dummy variable measuring the amount of the tariff ($\ln\text{Duty}_{i,t}$) has a large, negative effect of -60.78% ¹⁹⁸ on imports from named countries (as the coefficient is -0.936 for OLS, OLS robust, cluster analysis) and an effect of -71.94% in the fixed effects regression, where the coefficient is -1.271 . Consequently, a higher duty leads to lower imports and the amount of the tariff is important for the question how imports develop after the imposition of AD measures. In addition, when China is part of the AD investigation (China_i), imports seem to be about 20% higher in general (coefficient: 0.178), which makes sense intuitively, as China is one of the EU's primary import partners. This dummy was added because of the increasing importance of trade with China. According to Trebilcock and Howse (2005), China was the most frequently named country in anti-dumping investigations worldwide between 1995 and 2002, and therefore merits a separate dummy variable. In contrast, it does not seem to make a difference how many EU countries (NumEUcty_i) or named countries (NumNamedcty_i) are involved in the investigation, or what kind of measure ($\text{AVD}_{i,t}$, $\text{PU}_{i,t}$, $\text{SD}_{i,t}$) is imposed.

Among the most important dummy variables used in the analysis are those for time_t and $\text{time}_t*\text{decision}_i$, as these are the dummy variables that show trade effects as a result of the AD investigation and as a result of the imposition of AD measures. The most significant trade depressing effect seems to take place two periods after the AD investigation was initiated (coefficient of variable time_2 : $-0.209 = -18.86\%$). Further additional trade depressing effects are observed in the first (time_1 : -0.122 ; -11.49%) and fourth period (time_4 : -0.150 ; -13.93%).¹⁹⁹ In the third period, however, there is no significant additional effect on imports. The results are astonishing, as the time dummy time_t shows these effects irrespective of whether a tariff has been imposed or not, which implies that the initiation of an investigation as such already lowers imports and has a trade depressing effect for named countries.

The variable $\text{time}_t*\text{decision}_i$ takes into account if a measure has been imposed and if so, in which year after the investigation was initiated. OLS robust and the cluster analysis show a negative effect of -23.51% on imports in the first period (coefficient of $\text{time}_1*\text{decision}_i$: -0.268). For the second, third and fourth period there is no additional, significant effect. The effect on imports when a measure is imposed ($\text{time}_1*\text{decision}_i$: -0.268) is larger than the effect irrespective of a measure (time_1 : -0.122 ; -11.49%), a result in line with intuition, as AD measures are assumed to have an effect on trade, which is the basic idea of an AD measure. The model also fits the data well in OLS, OLS robust, and a cluster analysis with a very high R^2 of 0.899 . Only in the fixed effects estimation is the R^2 lower (0.362).²⁰⁰

¹⁹⁸ Converting coefficients is conducted by taking $e^{-0.936} = 0.392$, which yields $(0.392 - 1.000)*100 = -60.78\%$. This calculation is applied throughout the chapter. For a large number of variables the coefficient and its respective percentage value are given.

¹⁹⁹ AD measures may be imposed for the first time in period t_1 or t_2 and may exist for a duration of up to 5 years. Even though they mostly exist already from t_1 on they can also be imposed in the later period t_2 for the first time. Nevertheless, there is also another possibility that measures are only preliminary and only exist in t_1 or only in t_2 , but not in the later periods t_3 , t_4 , and t_5 . This is accounted for in the dataset.

²⁰⁰ The R^2 is similar for the other estimations in later sections.

It can be concluded that the AD investigations reduced EU-15 imports from named countries irrespective of the decision about the imposition of a tariff, while the imposition of a measure made a difference only in the period after the start of an investigation. It follows that EU AD investigations had a large trade depressing effect that continues for several periods and does not only take place right after the start of the investigation.

5.3.2 Impact of AD actions on EU-15 imports from non-named countries (unit values)

While the previous section examined how imports from named countries develop, this section analyses what the effect of AD actions on imports from non-named countries is, which are neither part of the investigation, nor part of the EU-15. The aim is to find out, whether there is trade deviation to countries which are of course not at risk of receiving an AD measure and whether they hence indirectly benefit from the AD actions. In case of the imposition of a measure, their products could be relatively less expensive than those of named countries and in higher demand, as no duty is imposed on imports from them (non-named countries).

The effect of $\ln\text{IMP}_{i,t-1}$ on current imports ($\ln\text{IMP}_{i,t}$) is again large, as in the case of named countries (0.994 for OLS, OLS robust and cluster analysis and 0.436 for fixed effects, see Table 5.2). If three or more EU countries are concerned in the investigation (NumEUcty_i), EU-15 imports from non-named countries are 9.20% higher, with a coefficient of 0.088. This is rather a small effect compared to the other coefficients such as time_1 or $\ln\text{IMP}_{i,t-1}$. The amount of the duty ($\ln\text{Duty}_{i,t}$) instead makes no difference for the imports of non-named countries and neither does the fact whether China is one of the countries named in the investigation (China_i), as the results are both insignificant.

In the first period following an investigation, irrespective of the decision whether a measure is imposed or not (time_1), non-named countries benefit, i.e., the variables for time_1 are positive and significant in OLS, OLS robust, cluster analysis (value of the coefficient: 0.199, 22.02%), and fixed effects (value of the coefficient: 0.200, 22.14%). In the following periods (time_2 , time_3 and time_4) there is, however, no significant additional effect on imports apart from the ongoing effect from period t_1 . It also has no effect whether tariffs are raised during or following the AD investigation (dummy variable: $\text{time}_t \cdot \text{decision}_i$), and what kind of measure is levied ($\text{AVD}_{i,t}$, $\text{PU}_{i,t}$, $\text{SD}_{i,t}$). Therefore, the benefit for non-named countries is primarily in the first period after the initiation of the investigation, and there is no additional benefit in later periods.

Table 5.2: Estimations of the effect of AD actions on EU-15 imports from non-named countries (unit values)

	OLS	OLS robust	Cluster analysis	Fixed effects
Variable	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)
$\ln\text{IMP}_{i,t-1}$	0.994(0.012)***	0.994(0.016)***	0.994(0.012)***	0.436(0.068)***
$\ln\text{IMP}_{i,t-1} - \ln\text{IMP}_{i,t-2}$	-0.044(0.045)	-0.044(0.079)	-0.044(0.065)	0.152(0.060)**
$\ln\text{Duty}_{i,t}$	-0.056(0.195)	-0.056(0.149)	-0.056(0.137)	-0.005(0.337)
NumEUcty_i	0.088(0.038)**	0.088(0.037)**	0.088(0.035)**	
NumNamedcty_i	0.001(0.045)	0.001(0.053)	0.001(0.050)	
China_i	-0.030(0.039)	-0.030(0.036)	-0.030(0.040)	
time_1	0.199(0.081)**	0.199(0.072)***	0.199(0.083)**	0.200(0.083)**
time_2	0.059(0.076)	0.059(0.070)	0.059(0.076)	0.060(0.083)
time_3	0.069(0.076)	0.069(0.059)	0.069(0.047)	0.083(0.087)
time_4	0.060(0.079)	0.060(0.065)	0.060(0.051)	0.065(0.092)
$\text{time}_1 * \text{decision}_i$	-0.050(0.213)	-0.050(0.089)	-0.050(0.089)	-0.099(0.221)
$\text{time}_2 * \text{decision}_i$	0.124(0.212)	0.124(0.098)	0.124(0.096)	0.105(0.225)
$\text{time}_3 * \text{decision}_i$	-0.130(0.213)	-0.130(0.097)	-0.130(0.100)	-0.108(0.225)
$\text{time}_4 * \text{decision}_i$	0.025(0.213)	0.025(0.098)	0.025(0.077)	0.039(0.225)
$\text{AVD}_{i,t}$	0.004(0.205)	0.004(0.072)	0.004(0.066)	-0.020(0.225)
$\text{PU}_{i,t}$	0.004(0.218)	0.004(0.089)	0.004(0.098)	0.041(0.263)
$\text{SD}_{i,t}$	-0.266(0.226)	-0.266(0.260)	-0.266(0.233)	-0.121(0.283)
R^2	0.954	0.954	0.954	0.310

Standard errors are given in parentheses. Intercept and year controls (μ_t) are not recorded.

5.3.3 Impact of AD actions on EU-15 internal imports (unit values)

This section complements the two results from above. It has been shown that while EU-15 imports from countries named in the AD investigation decrease, imports from non-named countries in the world slightly increase and therefore benefit from the AD investigations. Again, like in the two sections before, the effect of the lagged endogenous variable ($\ln\text{IMP}_{i,t-1}$) on current imports ($\ln\text{IMP}_{i,t}$) is fairly large in all econometric estimations. Regarding the imports of the EU-15 countries from one another, almost no significant effect of the AD investigations can be shown, neither a positive nor a negative one. A small exception is that in the fixed effects estimation, time_2 is significant and has a negative coefficient (-0.052, see Table 5.3), indicating that in the second period after an AD investigation EU-15 internal imports decrease slightly (by an estimated -5.07%), a very small effect.

Table 5.3: Estimations of the effect of AD actions on EU-15 internal imports (unit values)

	OLS	OLS robust	Cluster analysis	Fixed effects
Variable	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)
$\ln\text{IMP}_{i,t-1}$	1.001(0.007)***	1.001(0.007)***	1.001(0.008)***	0.719(0.047)***
$\ln\text{IMP}_{i,t-1} - \ln\text{IMP}_{i,t-2}$	0.047(0.041)	0.047(0.044)	0.047(0.047)	-0.078(0.045)*
$\ln\text{Duty}_{i,t}$	0.008(0.090)	0.008(0.076)	0.008(0.096)	-0.071(0.144)
NumEUcty_i	0.033(0.017)*	0.033(0.019)*	0.033(0.022)	
NumNamedcty_i	-0.016(0.021)	-0.016(0.020)	-0.016(0.022)	
China_i	0.014(0.018)	0.014(0.019)	0.014(0.024)	
time_1	-0.042(0.038)	-0.042(0.031)	-0.042(0.032)	-0.036(0.035)
time_2	-0.016(0.035)	-0.016(0.044)	-0.015(0.043)	-0.052(0.036)*
time_3	-0.012(0.035)	-0.012(0.035)	-0.012(0.033)	-0.042(0.037)
time_4	0.003(0.036)	0.003(0.040)	0.003(0.037)	-0.032(0.039)
$\text{time}_1*\text{decision}_i$	0.021(0.089)	0.021(0.062)	0.021(0.062)	0.109(0.087)
$\text{time}_2*\text{decision}_i$	0.036(0.089)	0.036(0.076)	0.036(0.080)	0.168(0.090)
$\text{time}_3*\text{decision}_i$	-0.032(0.089)	-0.032(0.066)	-0.032(0.062)	0.114(0.090)
$\text{time}_4*\text{decision}_i$	-0.004(0.089)	-0.004(0.068)	-0.004(0.060)	0.130(0.090)
$\text{AVD}_{i,t}$	0.010(0.084)	0.010(0.057)	0.010(0.058)	-0.080(0.087)
$\text{PU}_{i,t}$	0.070(0.091)	0.070(0.063)	0.070(0.061)	-0.046(0.105)
$\text{SD}_{i,t}$	0.040(0.095)	0.040(0.078)	0.040(0.072)	0.005(0.114)
R^2	0.984	0.984	0.984	0.481

Standard errors are given in parentheses. Intercept and year controls (μ_t) are not recorded.

The amount of the duty ($\ln\text{Duty}_{i,t}$), the number of named countries (NumNamedcty_i) and if China is one of the named countries (China_i) do not significantly influence the imports. If there are three or more EU-15 countries concerned in the investigation (NumEUcty_i), EU-15 internal imports are about 3.36% higher, with a small coefficient of 0.033 (for OLS and OLS robust only, not for cluster analysis). This results in EU-15 internal imports being slightly higher if more than two EU countries are part of an investigation. It can be concluded that, for EU-15 internal trade, AD investigations do not have a major impact as most estimations are statistically not significant.

5.3.4 Impact of AD actions on EU-15 imports from named countries (unit volumes)

The same analysis which was pursued above with imports denominated in EUR can be done with quantities (measured in 100kg) for the same Eurostat database. This is done in order to control both for imports in terms of values, but also in terms of volumes. The intuition to use both unit values and unit volumes is to see how imports develop irrespective of monetary values

and whether the results obtained for unit values can be confirmed. This procedure has been commonly applied by Brenton (2001) and Prusa (1997) before.

The results in Table 5.4 largely confirm the findings for named countries from section 5.3.1 above (where imports are denominated in EUR), as the amount of the duty ($\ln\text{Duty}_{i,t}$) influences the imports negatively (coefficient: -0.812 (-55.60%) for OLS, OLS robust and cluster analysis; fixed effects: -0.885 (-58.73%)), while imports are higher if China is part of the investigation (coefficient of China: 0.216, 24.11%). Generally, the coefficients for $\ln\text{IMP}_{i,t-1}$, $\ln\text{Duty}_{i,t}$, China_i , time_t and $\text{time}_t^* \text{decision}_i$ in this section on unit volumes are very similar compared to section 5.3.1 with unit values.

Table 5.4: Estimations of the effect of AD actions on EU-15 imports from named countries (unit volumes)

	OLS	OLS robust	Cluster analysis	Fixed effects
Variable	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)
$\ln\text{IMP}_{i,t-1}$	1.002(0.014)***	1.002(0.019)***	1.002(0.016)***	0.545(0.054)***
$\ln\text{IMP}_{i,t-1} -$				
$\ln\text{IMP}_{i,t-2}$	-0.008(0.045)	-0.008(0.078)	-0.008(0.070)	0.074(0.053)
$\ln\text{Duty}_{i,t}$	-0.812(0.301)***	-0.812(0.334)**	-0.812(0.436)*	-0.885(0.521)*
NumEUcty_i	-0.026(0.059)	-0.026(0.060)	-0.026(0.051)	
NumNamedcty_i	-0.088(0.070)	-0.088(0.065)	-0.088(0.071)	
China_i	0.216(0.059)***	0.216(0.068)***	0.216(0.066)***	
time_1	-0.160(0.127)	-0.160(0.070)**	-0.160(0.078)**	-0.029(0.130)
time_2	-0.216(0.121)*	-0.216(0.114)*	-0.216(0.109)**	-0.107(0.133)
time_3	-0.115(0.123)	-0.115(0.082)	-0.115(0.090)	-0.057(0.139)
time_4	-0.155(0.124)	-0.155(0.084)*	-0.155(0.079)*	-0.107(0.145)
$\text{time}_1^* \text{decision}_i$	-0.295(0.300)	-0.295(0.135)**	-0.295(0.154)*	-0.362(0.316)
$\text{time}_2^* \text{decision}_i$	-0.234(0.300)	-0.234(0.204)	-0.234(0.216)	-0.389(0.325)
$\text{time}_3^* \text{decision}_i$	-0.196(0.300)	-0.196(0.167)	-0.196(0.177)	-0.430(0.324)
$\text{time}_4^* \text{decision}_i$	0.045(0.301)	0.045(0.164)	0.045(0.175)	-0.267(0.325)
$\text{AVD}_{i,t}$	0.148(0.284)	0.148(0.145)	0.148(0.172)	0.165(0.316)
$\text{PU}_{i,t}$	0.303(0.309)	0.303(0.177)*	0.303(0.193)	0.442(0.380)
$\text{SD}_{i,t}$	0.198(0.315)	0.198(0.191)	0.198(0.181)	0.260(0.416)
R^2	0.935	0.935	0.935	0.397

Standard errors are given in parentheses. Intercept and year controls (μ_t) are not recorded.

In the first (time_1 : -0.160, -14.79%), second (time_2 : -0.216, -19.43%), and fourth (time_4 : -0.155, -14.36%) period after the start of the AD investigation, imports from named countries decrease independently of the imposition of a measure, which is indicated by the variable time_t (for OLS, OLS robust and cluster analysis), see Table 5.4. In the fixed effects estimation, however, all

variables for $time_t$ and $time_t * decision_t$ are not significant, which nevertheless confirms the findings from section 5.3.1 where the fixed effects estimations for those variables are not significant either. With regard to the variable $time_t * decision_t$, only in the first period after the investigation was initiated ($time_1 * decision_1$; coefficient: -0.295, -25.55%) does the imposition of a measure significantly decrease imports from named countries.

5.3.5 Impact of AD actions on EU-15 imports from non-named countries (unit volumes)

For all non-named countries (which are not part of the EU-15 and not named in the investigation), the results are slightly different compared to the analysis where imports are measured in values (section 5.3.2), but it can be confirmed that non-named countries generally benefit from AD actions to a small extent. Some variables that were significant in Table 5.2 for imports with unit values are significant again in Table 5.5, but there are differences. The variable $time_1$, for example, is significant for OLS robust only and $NumEUcty_t$ is significant for OLS robust and cluster analysis, but not regular OLS. Most remarkably, $time_2 * decision_t$ is now significant with a positive effect of 39.24% in OLS robust and cluster analysis (coefficient: 0.331), see Table 5.5.

It follows that only for $time_1$ (OLS robust with a coefficient of 0.137; 14.68%) and in the OLS robust and cluster analysis with regard to the variable $time_2 * decision_t$ (coefficient: 0.331), do non-named countries seem to benefit from AD actions, whereas for other econometric methods and time periods results are insignificant. Nevertheless, the results show that there is in general a beneficial effect on imports from non-named countries.

The number of EU countries concerned does have a positive influence (coefficient: 0.066, 6.82%), as in section 5.3.2 (Table 5.2, coefficient: 0.088, 9.20%). In contrast, specific duties ($SD_{i,t}$) decrease imports from non-named countries. This is surprising, since specific duties are supposed to negatively influence imports from named countries, but not non-named countries. Specific duties are based on a fixed value for a specified amount of goods (defined by weight, volume or unit) and can of course only be levied for named countries accused of having dumped products. As the variable $SD_{i,t}$ is significant for OLS, OLS robust, and the cluster analysis, this presents evidence that specific duties have a negative effect on EU-15 imports from non-named countries.

Table 5.5: Estimations of the effect of AD actions on EU-15 imports from non-named countries (unit volumes)

	OLS	OLS robust	Cluster analysis	Fixed effects
Variable	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)
$\ln\text{IMP}_{i,t-1}$	0.984(0.010)***	0.984(0.012)***	0.984(0.011)***	0.443(0.071)***
$\ln\text{IMP}_{i,t-1} -$				
$\ln\text{IMP}_{i,t-2}$	-0.007(0.049)	-0.007(0.071)	-0.007(0.061)	0.195(0.068)***
$\ln\text{Duty}_{i,t}$	0.064(0.210)	0.064(0.182)	0.064(0.160)	0.177(0.370)
NumEUcty_i	0.066(0.041)	0.066(0.039)*	0.066(0.035)*	
NumNamedcty_i	0.046(0.048)	0.046(0.054)	0.046(0.050)	
China_i	-0.050(0.043)	-0.050(0.036)	-0.050(0.036)	
time_1	0.137(0.088)	0.137(0.072)*	0.137(0.083)	0.128(0.092)
time_2	-0.063(0.083)	-0.063(0.086)	-0.063(0.086)	-0.083(0.094)
time_3	-0.003(0.083)	-0.003(0.067)	-0.003(0.063)	-0.049(0.098)
time_4	0.072(0.086)	0.072(0.059)	0.072(0.055)	-0.017(0.103)
$\text{time}_1*\text{decision}_i$	0.088(0.209)	0.088(0.175)	0.088(0.186)	-0.006(0.225)
$\text{time}_2*\text{decision}_i$	0.331(0.209)	0.331(0.185)*	0.331(0.187)*	0.257(0.231)
$\text{time}_3*\text{decision}_i$	0.008(0.209)	0.008(0.180)	0.008(0.182)	-0.010(0.230)
$\text{time}_4*\text{decision}_i$	0.128(0.210)	0.128(0.172)	0.128(0.167)	0.111(0.232)
$\text{AVD}_{i,t}$	-0.147(0.198)	-0.147(0.162)	-0.147(0.163)	-0.121(0.225)
$\text{PU}_{i,t}$	-0.114(0.215)	-0.114(0.175)	-0.114(0.192)	-0.065(0.271)
$\text{SD}_{i,t}$	-0.541(0.219)**	-0.541(0.313)*	-0.541(0.301)*	-0.342(0.296)
R^2	0.969	0.969	0.969	0.317

Standard errors are given in parentheses. Intercept and year controls (μ_t) are not recorded.

5.3.6 Impact of AD actions on EU-15 internal imports (unit volumes)

This is the third section on imports with unit volumes and compares the results to those from import values in section 5.3.3, in order to find out whether the results confirm the findings. The previous two sections (5.3.4 and 5.3.5) already showed that EU-15 imports from named countries decrease and imports from non-named countries slightly increase as a result of an AD investigation and AD measure.

When drawing a comparison with section 5.3.3 (imports measured in unit values), the coefficients for $\ln\text{IMP}_{i,t-1}$ are very similar and highly significant (coefficient for unit volumes: 1.009, see Table 5.6 and unit values: 1.001, see Table 5.3), as is time_2 for the fixed effects estimator (unit volumes: -0.106 and unit values: -0.052). However, it could not be confirmed that the number of EU countries in an AD investigation (NumEUcty_i) plays a significant role, while instead $\text{time}_2*\text{decision}_i$, $\text{time}_4*\text{decision}_i$, time_3 , and time_4 are significant variables (in the fixed effects estimation only).

Additionally, current imports also depend on the lagged endogenous variables $\ln\text{IMP}_{i,t-1}$ - $\ln\text{IMP}_{i,t-2}$, which refer to the difference between the imports in $t-1$ and $t-2$. In Tables 5.1 to 5.5 this variable is mostly not significant or only weakly significant for the fixed effects estimator.

The results for the analysis on EU-15 internal imports require explanation, as for time_2 , time_3 and time_4 AD investigations as such actually lower the imports irrespective of the decision to impose an AD measure or not, whereas if an AD measure is imposed ($\text{time}_t \cdot \text{decision}_i$), the imports rise in t_2 ($\text{time}_2 \cdot \text{decision}_i$) and t_4 ($\text{time}_4 \cdot \text{decision}_i$). As the variable ($\text{time}_t \cdot \text{decision}_i$) takes into account if a measure was levied and in which year, it can be concluded that an AD investigation as such does not help the EU-15 countries to increase their internal imports, while the imposition of an AD measure can make imports from named countries more expensive and EU-15 internal imports relatively less expensive. This result is, however, solely based on the fixed effects estimation for unit volumes and not on OLS, OLS robust, or the cluster analysis. It therefore lacks the depth of other results in the previous sections.

Table 5.6: Estimations of the effect of AD actions on EU-15 internal imports (unit volumes)

	OLS	OLS robust	Cluster analysis	Fixed effects
Variable	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)
$\ln\text{IMP}_{i,t-1}$	1.009(0.007)***	1.009(0.007)***	1.009(0.008)***	0.597(0.054)***
$\ln\text{IMP}_{i,t-1} -$ $\ln\text{IMP}_{i,t-2}$	-0.165(0.042)***	-0.165(0.077)**	-0.165(0.093)*	-0.151(0.048)***
$\ln\text{Duty}_{i,t}$	-0.054(0.140)	-0.054(0.178)	-0.054(0.227)	0.037(0.228)
NumEUcty_i	0.019(0.028)	0.019(0.029)	0.019(0.035)	
NumNamedcty_i	-0.024(0.032)	-0.024(0.030)	-0.024(0.034)	
China_i	0.024(0.029)	0.024(0.027)	0.024(0.029)	
time_1	0.009(0.059)	0.009(0.053)	0.009(0.049)	0.006(0.056)
time_2	-0.045(0.055)	-0.045(0.063)	-0.045(0.060)	-0.106(0.057)*
time_3	-0.020(0.056)	-0.020(0.051)	-0.020(0.046)	-0.010(0.059)*
time_4	-0.070(0.057)	-0.070(0.049)	-0.070(0.050)	-0.166(0.062)***
$\text{time}_1 \cdot \text{decision}_i$	0.025(0.139)	0.025(0.116)	0.025(0.112)	0.183(0.137)
$\text{time}_2 \cdot \text{decision}_i$	0.023(0.140)	0.023(0.133)	0.023(0.134)	0.263(0.142)*
$\text{time}_3 \cdot \text{decision}_i$	-0.060(0.139)	-0.060(0.123)	-0.060(0.123)	0.188(0.141)
$\text{time}_4 \cdot \text{decision}_i$	0.056(0.140)	0.056(0.118)	0.056(0.107)	0.295(0.142)**
$\text{AVD}_{i,t}$	0.019(0.132)	0.019(0.115)	0.019(0.114)	-0.200(0.138)
$\text{PU}_{i,t}$	0.103(0.143)	0.103(0.124)	0.103(0.121)	-0.129(0.165)
$\text{SD}_{i,t}$	0.076(0.146)	0.076(0.126)	0.076(0.128)	-0.095(0.182)
R^2	0.983	0.983	0.983	0.336

Standard errors are given in parentheses. Intercept and year controls (μ_t) are not recorded.

5.3.7 Arellano-Bond estimations of the model

Arellano and Bond (1991) propose a generalized method of moments (GMM) approach in order to estimate linear dynamic panel data models, where the endogenous variable appears also as a lagged explanatory variable.²⁰¹ The equation is estimated in first differences in order to cut out individual effects. Therefore, the dummy variables NumNamedcty_i, NumEUcty_i and China_i do not appear. While the basic equation is given in section 5.2, the equation used for Arellano-Bond estimations looks slightly different:

$$\Delta \ln \text{IMP}_{i,t} = \beta_{\text{IMP}_{t-1}} \Delta \ln \text{IMP}_{i,t-1} + \beta_{\text{IMP}_{t-2}} \Delta \ln \text{IMP}_{i,t-2} + \beta_{\text{Duty}} \Delta \ln \text{Duty}_{i,t} + \beta_{\text{time}(t)} \Delta \text{time}_t + \beta_{\text{time}(t)*\text{decision}} \Delta \text{time}_t * \text{decision}_i + \Delta \text{AVD}_{i,t} + \Delta \text{PU}_{i,t} + \Delta \text{SD}_{i,t} + \Delta \mu_t + \Delta \varepsilon_{i,t}$$

The AR(1)-test of Arellano and Bond (1991) at the bottom of each table tests whether there is an autocorrelation of the error terms in the periods t and $t-1$ ($H_0: E[\Delta \varepsilon_{i,t} * \Delta \varepsilon_{i,t-1}] = 0$). This test is supposed to be significant (probability < 0.05), because if it was not significant, $\varepsilon_{i,t}$ could be a random-walk process. While the estimation would not be efficient if the test is not significant, it would still be consistent. Therefore, an AR(1)-test that is not significant is acceptable nevertheless. An AR(2)-test of Arellano and Bond (1991) is also reported, which tests the autocorrelation of the error terms for period t and $t-2$ ($H_0: E[\Delta \varepsilon_{i,t} * \Delta \varepsilon_{i,t-2}] = 0$). This test must be insignificant (probability > 0.05).

The basic idea is that the instruments only function if the restrictions above (the second more than the first) are fulfilled. The Sargan test is also reported. This test must be insignificant (probability > 0.05), as the null hypothesis states that all instruments are exogenous. If it is significant, this means that at least one instrument is correlated with the error term, which would not be valid for the analysis. The estimation of the following sample is always conducted with two lags and as a two-step estimator.

This section gives the results for named countries, non-named countries, and EU-15 internal imports for unit values and using Arellano-Bond (and further below for unit volumes). While previous sections displayed four econometric methods (OLS, OLS robust, cluster analysis, and fixed effects) in one table for each of the three country aggregates, with results in three different tables, Table 5.7 only shows Arellano-Bond estimations and can therefore present the results for the three country aggregates within one table.

When looking at the results of the analysis, the dynamic panel data shows similarities and differences from the regular analysis (OLS, OLS robust, cluster analysis, and fixed effects) above. Not surprisingly, the dummy variables NumEUcty_i, NumNamedcty_i and China_i are dropped, because individual, time-invariant effects are left out when applying Arellano-Bond (as described in the first paragraph of this section). The size of the duty imposed ($\ln \text{Duty}_{i,t}$) has a

²⁰¹ Park (2009) uses this method to estimate the impact of Chinese AD measures on Chinese imports.

large, negative and significant effect on imports from named (-0.897) and non-named countries (-0.248), but no effect for EU-15 internal imports. It follows that a higher duty lowers EU-15 imports from named countries most, but surprisingly EU-15 imports from non-named countries as well. Less intuitive is the result for the time dummies (time_t). Here it is shown that, irrespective of the imposition of a measure, named countries actually benefit in time₁ (0.049) and in time₃ (0.052), as do non-named countries (time₁: 0.131 and time₃: 0.053), whereas EU-15 countries experience decreasing imports in time₁ (-0.027) and time₂ (-0.041). If time₁ and time₂ are significant this does not mean that the effect disappears in the third or fourth period. Instead, there is simply no additional effect, while the original effect from earlier periods remains. Hence, non-named countries benefit from AD investigations in time₁ and time₃, while named countries benefit and EU-15 internal imports decrease. However, the coefficients and therefore the effects are very small.

Table 5.7: Arellano-Bond estimations of the effect of AD actions on EU-15 imports from named, non-named countries, and EU-15 internal imports (unit values)

Sample	Named countries	Non-named countries	EU-15 internal imports
Variable	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)
lnIMP _{i,t-1}	0.194(0.036)***	0.293(0.030)***	0.452(0.027)***
lnIMP _{i,t-2}	-0.076(0.014)***	-0.122(0.020)***	0.102(0.024)***
lnDuty _{i,t}	-0.897(0.242)***	-0.248(0.147)*	-0.080(0.077)
time ₁	0.049(0.027)*	0.131(0.023)***	-0.027(0.016)*
time ₂	0.015(0.035)	0.032(0.026)	-0.041(0.017)**
time ₃	0.052(0.027)*	0.053(0.023)**	0.000(0.014)
time ₄			
time ₁ *decision _i	-0.678(0.175)***	-0.191(0.117)	0.119(0.043)***
time ₂ *decision _i	-0.789(0.170)***	-0.041(0.125)	0.156(0.042)***
time ₃ *decision _i	-0.851(0.173)***	-0.193(0.125)	0.097(0.048)**
time ₄ *decision _i	-0.758(0.182)***	-0.133(0.124)	0.105(0.052)**
AVD _{i,t}	0.666(0.156)***	0.194(0.130)	-0.080(0.040)**
PU _{i,t}	0.758(0.236)***	0.081(0.164)	-0.037(0.059)
SD _{i,t}	0.361(0.181)**	0.233(0.142)	0.010(0.070)
Sargan test (p)	0.241	0.185	0.326
AR(1) (p-value)	0.029	0.164	0.000
AR(2) (p-value)	0.867	0.163	0.352

Standard errors are given in parentheses. Intercept and year controls (μ_t) are not recorded.

The result is different once time dummies (time_t) and the decision about AD measures (time_t*decision_i) are combined. This clearly shows a trade depressing effect for the named countries (coefficients between -0.678 and -0.851), no significant effect for the non-named countries, and positive effects on EU-15 internal imports (coefficients between 0.097 and

0.156). The results for $\text{time}_t * \text{decision}_i$ therefore show the most remarkable difference between regular and dynamic panel data analysis. While for OLS, OLS robust, cluster analysis, and fixed effects the interaction between time_t and decision_i is mostly not significant, the results for the Arellano-Bond estimation show highly significant results for two out of three country aggregates (named countries and EU-15 internal imports). In contrast to the trade depressing effect for named countries, EU-15 countries largely benefit from the tariffs being imposed. The type of AD measure imposed (AVD, SD, PU) yields contradictory results.

The Sargan test and the AR(2) test cannot be rejected for all equations (named countries, non-named countries and the EU-15), while the AR(1) test is only rejected for non-named countries. According to the model specifications described in section 5.3.7, this fulfils all requirements for the correct application of the model.

The Arellano-Bond estimation for unit values is also conducted for unit volumes, as in the previous sections. When looking at the estimations for the dataset measured in volumes (kg) below (see Table 5.8), the results are slightly different compared to the estimations for the dataset measured in values (EUR), but still (partially) confirm the findings from above and are therefore contradictory for a few variables only. Only the variable $\ln \text{Duty}_{i,t}$ has a positive effect on EU-15 internal imports (coefficient: 0.181), hence EU-15 internal imports increase with higher duties. In addition, only for non-named countries in the year after the investigation was initiated is there a positive effect on trade (coefficient of time_t : 0.101). The $\text{time}_t * \text{decision}_i$ variables show similar results as for unit values above, which means a significant trade depressing effect for named countries (coefficients between -0.557 to -0.695) and a positive effect for EU-15 countries' internal imports (coefficients between 0.280 and 0.357). The difference is that for the variable $\text{time}_t * \text{decision}_i$ (unit volumes, Table 5.8) there is a trade depressing effect for non-named countries in t_1 ($\text{time}_1 * \text{decision}_i$: -0.311) and t_3 ($\text{time}_3 * \text{decision}_i$: -0.331), while there was no effect when imports from non-named countries are measured in unit values (see Table 5.7). The type of measure imposed is not significant for named countries, yet for non-named countries AVD and SD duties have a positive effect, while for EU-15 countries AVD, PU and SD duties have a negative effect.

The Sargan test cannot be rejected for all three datasets, which proves that all instruments employed are exogenous. The AR(2) tests cannot be rejected either, which is positive. The AR(1) test, however, is rejected for the regression of named countries. It follows that this single equation on non-named countries is consistent, even though it is not efficient.

Table 5.8: Arellano-Bond estimations of the effect of AD actions on EU-15 imports from named, non-named countries and EU-15 internal imports (unit volumes)

Sample	Named countries	Non-named countries	EU-15 internal imports
Variable	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)
$\ln\text{IMP}_{i,t-1}$	-0.058(0.031)*	0.406(0.060)***	0.155(0.037)***
$\ln\text{IMP}_{i,t-2}$	-0.001(0.016)	-0.127(0.028)***	0.133(0.018)***
$\ln\text{Duty}_{i,t}$	-0.314(0.264)	-0.102(0.143)	0.181(0.101)*
time_1	0.003(0.027)	0.101(0.029)***	0.001(0.021)
time_2	-0.029(0.029)	-0.033(0.032)	-0.027(0.021)
time_3	-0.020(0.024)	0.007(0.024)	0.017(0.026)
time_4			
$\text{time}_1*\text{decision}_i$	-0.374(0.250)	-0.311(0.175)*	0.280(0.056)***
$\text{time}_2*\text{decision}_i$	-0.557(0.245)**	-0.159(0.180)	0.340(0.059)***
$\text{time}_3*\text{decision}_i$	-0.659(0.242)***	-0.331(0.178)*	0.285(0.060)***
$\text{time}_4*\text{decision}_i$	-0.695(0.238)***	-0.264(0.164)	0.357(0.067)***
$\text{AVD}_{i,t}$	0.283(0.240)	0.292(0.175)*	-0.288(0.062)***
$\text{PU}_{i,t}$	0.195(0.305)	0.171(0.201)	-0.251(0.063)***
$\text{SD}_{i,t}$	0.030(0.262)	0.475(0.196)**	-0.264(0.082)***
Sargan test (p)	0.191	0.334	0.217
AR(1) (p-value)	0.901	0.032	0.030
AR(2) (p-value)	0.994	0.656	0.131

Standard errors are given in parentheses. Intercept and year controls (μ_t) are not recorded.

5.3.8 Preliminary summary for the complete dataset

Summing up, applying Arellano-Bond yields the result that EU-15 internal imports benefit from an imposed measure in AD investigations, while named countries and non-named countries experience decreasing trade. Without imposition of an AD measure, imports from named and non-named countries increase to a small extent, while EU-15 internal imports decrease. When using OLS, OLS robust, cluster analysis, and fixed effects the results are in general less significant than the results obtained when using Arellano-Bond. OLS, OLS robust, and cluster analysis show that in the periods after the investigation, imports from named countries decrease, those from non-named countries increase slightly, while there is almost no change for EU-15 internal imports (except for in the fixed effects estimation). The imposition of AD measures is generally negative for imports from named countries, while only when looking at unit volumes is there a weakly and partial positive effect on imports from non-named countries and EU-15 internal imports.

It can be concluded that AD measures (variable $\text{time}_t*\text{decision}_i$) have a negative impact on imports from named countries, whereas for non-named countries dynamic estimations show a

negative effect and regular (OLS, etc.) estimations show a small increase. EU-15 countries seem to benefit from AD measures as the dynamic analysis shows increasing internal imports, while the regular analysis is mostly not significant.

5.4 Future NMS-12 countries – did they benefit in particular?

Section 5.3 addressed the question how EU-15 imports from named, non-named countries, and EU-15 internal imports developed during the course of AD actions. This section (5.4) essentially separates the 12 new (at that time: future) EU member states (NMS-12) from the other non-named countries (called rest of the world: row)²⁰², i.e., the aggregate of non-named countries is split up, whereas the EU-15 internal imports aggregate and aggregate of named countries is left unchanged. In the special case that NMS-12 countries are part of named countries, those particular countries are of course not counted among the NMS-12 countries, but can be found under named countries. The basic idea is to find out, whether the NMS-12 countries - which were at that time only applicants to the EU, not yet members - benefited disproportionately from AD measures in the scope that trade deviated from other countries to them. The sample (with regard to data on imports) of this section begins in 1999 and ends in 2008, while the first AD investigation is from 2001 and the last one from 2004, because of the necessity of lagged variables for imports and data on imports for the four years following the initiation of an AD investigation. In contrast, the import data for the complete sample in section 5.3 is from 1995-2008, while the underlying AD investigations started between 1997 and 2004. The shorter time frame was selected because of the missing availability of data at Eurostat for the years before 1999 for the NMS-12 countries. This shorter data set for section 5.4 consists of 45 AD investigations.

As the last AD investigation against an NMS-12 country considered in this sample is an AD dispute with Poland in 2002, it is not a problem that the complete sample for this section actually includes the year 2004, the year when 10 of the 12 NMS-12 countries joined the European Union. For clarification, this is also no problem for the complete sample in section 5.3, starting in 1997 and ending in 2004. It has to be kept in mind that imports of the EU-15 countries from named, non-named countries, and internal EU-15 imports are considered and the enlargement of the European Union from 15 to 25 (in 2004) or 27 (in 2007) does not influence the country aggregates at any point, as the EU-15 aggregate is not designed evolutionary, as Eurostat would label and describe it.

In order to allow for an appropriate comparison, the sample for non-named countries has been additionally carried out for the time frame 1999-2008 (with AD investigations from 2001 to 2004) as well. The results are shown in Tables 5.10 to 5.12 in the appendix and are quite similar to those for the regular dataset in section 5.3.2 with regard to imports measured in unit values,

²⁰² This term was selected in order to avoid confusion between non-named countries in section 5.3, and row-countries in section 5.4. Row-countries & NMS-12 countries form the non-named countries together.

but only to a limited extent for imports measured in unit volumes (section 5.3.5) and Arellano-Bond (section 5.3.7).

5.4.1 Impact of AD actions on EU-15 imports from NMS-12 countries (unit values)

The results are not as clear-cut and less significant compared to previous sections. When looking at the crucial dummy variables $time_t$ and $time_t * decision_i$, only the fixed effects estimator shows strongly significant and positive results (see Table 5.9). In case of an imposed measure on named countries ($time_t * decision_i$), imports from NMS-12 countries rise substantially in all periods from the first (1.564) to the fourth (1.468), that is, they largely benefit from AD measures taken against other countries by almost quadrupling their trade. However, imports of the EU-15 from NMS-12 countries are influenced negatively in case an ad-valorem duty is levied on imports from named countries, which is the case for OLS robust (-0.664), cluster analysis (-0.664), and fixed effects (-1.661).

Table 5.9: Estimations of the effect of AD actions on EU-15 imports from NMS-12 countries (unit values)

	OLS	OLS robust	Cluster analysis	Fixed effects
Variable	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)
$\ln IMP_{i,t-1}$	0.913(0.027)***	0.913(0.032)***	0.913(0.028)***	0.596(0.080)***
$\ln IMP_{i,t-1} -$				
$\ln IMP_{i,t-2}$	0.184(0.078)**	0.184(0.093)**	0.184(0.116)	0.128(0.097)
$\ln Duty_{i,t}$	0.187(0.656)	0.187(0.572)	0.187(0.650)	-0.835(1.004)
$NumEUcty_i$	0.130(0.123)	0.130(0.128)	0.130(0.142)	
$NumNamedcty_i$	0.223(0.166)	0.223(0.139)	0.223(0.181)	
$China_i$	-0.165(0.158)	-0.165(0.145)	-0.165(0.175)	
$time_1$	0.059(0.267)	0.059(0.164)	0.059(0.180)	0.180(0.244)
$time_2$	-0.131(0.346)	-0.131(0.498)	-0.131(0.498)	0.148(0.332)
$time_3$	-0.221(0.331)	-0.221(0.410)	-0.221(0.365)	0.085(0.311)
$time_4$	0.191(0.376)	0.191(0.308)	0.191(0.277)	0.478(0.314)
$time_1 * decision_i$	0.454(0.871)	0.454(0.318)	0.454(0.334)	1.564(0.846)*
$time_2 * decision_i$	0.739(0.897)	0.739(0.610)	0.739(0.692)	1.765(0.869)**
$time_3 * decision_i$	0.464(0.888)	0.464(0.455)	0.464(0.330)	1.491(0.858)*
$time_4 * decision_i$	0.478(0.891)	0.478(0.395)	0.478(0.437)	1.468(0.863)*
$AVD_{i,t}$	-0.664(0.857)	-0.664(0.326)**	-0.664(0.324)**	-1.661(0.829)**
$PU_{i,t}$	-0.395(0.906)	-0.395(0.372)	-0.395(0.353)	-1.304(0.928)
$SD_{i,t}$	-0.269(0.917)	-0.269(0.633)	-0.269(0.498)	-1.331(1.165)
R^2	0.909	0.909	0.909	0.480

Standard errors are given in parentheses. Intercept and year controls (μ_t) are not recorded.

5.4.2 Impact of AD actions on EU-15 imports from the rest of the world (non-NMS-12 and non-EU; unit values)

This section complements the previous analysis and considers the EU-15 imports from the rest of the world (non-named countries from outside the EU-15 and outside the NMS-12). Irrespective of whether an AD measure is imposed on named countries or not, these countries benefit after the start of AD investigations (coefficient of $time_1$: 0.192 for OLS robust and cluster analysis, equal to 21.17%; see Table 5.13), which is perfectly in line with the previous findings in Table 5.2, or in Table 5.10 (in the appendix). Nevertheless, they only benefit in the first period and there is no additional effect in the later periods. Most other variables are not significant. As the F-test for the individual fixed effects is not significant (p-value: 0.242), the fixed effects results have to be used with caution and the respective column is shown in italics only.

Table 5.13: Estimations of the effect of AD actions on EU-15 imports from the rest of the world (unit values)

	OLS	OLS robust	Cluster analysis	<i>Fixed effects</i>
Variable	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)	<i>Coefficient (Standard error)</i>
$\ln IMP_{i,t-1}$	0.994(0.022)***	0.994(0.021)***	0.994(0.022)***	<i>0.595(0.133)***</i>
$\ln IMP_{i,t-1} -$				
$\ln IMP_{i,t-2}$	-0.072(0.079)	-0.072(0.118)	-0.072(0.110)	<i>0.044(0.128)</i>
$\ln Duty_{i,t}$	-0.143(0.332)	-0.143(0.288)	-0.143(0.264)	<i>-0.644(0.550)</i>
$NumEU_{cty_i}$	0.094(0.061)	0.094(0.058)	0.094(0.057)	
$NumNamed_{cty_i}$	-0.006(0.082)	-0.006(0.076)	-0.006(0.069)	
$China_i$	-0.052(0.079)	-0.052(0.063)	-0.052(0.053)	
$time_1$	0.192(0.132)	0.192(0.090)**	0.192(0.105)*	<i>0.227(0.134)*</i>
$time_2$	-0.016(0.172)	-0.016(0.182)	-0.016(0.185)	<i>-0.004(0.182)</i>
$time_3$	-0.038(0.164)	-0.038(0.139)	-0.038(0.124)	<i>-0.036(0.171)</i>
$time_4$	0.189(0.186)	0.189(0.161)	0.189(0.156)	<i>0.157(0.172)</i>
$time_1 * decision_i$	-0.029(0.432)	-0.029(0.130)	-0.029(0.127)	<i>0.744(0.470)</i>
$time_2 * decision_i$	0.179(0.440)	0.179(0.194)	0.179(0.178)	<i>1.008(0.481)**</i>
$time_3 * decision_i$	-0.231(0.438)	-0.231(0.179)	-0.231(0.193)	<i>0.603(0.477)</i>
$time_4 * decision_i$	-0.258(0.438)	-0.258(0.156)	-0.258(0.155)	<i>0.538(0.477)</i>
$AVD_{i,t}$	0.093(0.422)	0.093(0.141)	0.093(0.131)	<i>-0.596(0.460)</i>
$PU_{i,t}$	0.144(0.449)	0.144(0.178)	0.144(0.232)	<i>-0.461(0.515)</i>
$SD_{i,t}$	-0.393(0.439)	-0.393(0.254)	-0.393(0.228)	<i>-1.063(0.537)*</i>
R^2	0.954	0.954	0.954	<i>0.406</i>

Standard errors are given in parentheses. Intercept and year controls (μ_t) are not recorded.

5.4.3 Impact of AD actions on EU-15 imports from NMS-12 countries (unit volumes)

When the analysis on NMS-12 countries of section 5.4.1 is replicated for unit volumes, the results are mostly not significant, except for the lagged endogenous variable ($\ln\text{IMP}_{i,t-1}$). In basically all specifications, current imports highly depend on past imports (coefficient: 0.924 for OLS, OLS robust, and cluster analysis and 0.542 for fixed effects). See Table 5.14 for results.

Table 5.14: Estimations of the effect of AD actions on EU-15 imports from NMS-12 countries (unit volumes)

	OLS	OLS robust	Cluster analysis	Fixed effects
Variable	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)
$\ln\text{IMP}_{i,t-1}$	0.924(0.024)***	0.924(0.030)***	0.924(0.021)***	0.542(0.874)***
$\ln\text{IMP}_{i,t-1} -$				
$\ln\text{IMP}_{i,t-2}$	0.094(0.074)	0.094(0.095)	0.094(0.094)	0.150(0.094)
$\ln\text{Duty}_{i,t}$	0.195(0.693)	0.195(0.556)	0.195(0.612)	-0.316(1.096)
NumEUcty_i	0.077(0.130)	0.077(0.126)	0.077(0.132)	
NumNamedcty_i	0.235(0.176)	0.235(0.166)	0.235(0.175)	
China_i	-0.223(0.168)	-0.223(0.166)	-0.223(0.182)	
time_1	0.095(0.284)	0.095(0.252)	0.095(0.247)	0.234(0.267)
time_2	-0.378(0.371)	-0.378(0.498)	-0.378(0.501)	-0.011(0.365)
time_3	-0.334(0.354)	-0.334(0.331)	-0.334(0.268)	0.044(0.341)
time_4	0.086(0.400)	0.086(0.360)	0.086(0.356)	0.456(0.345)
$\text{time}_1*\text{decision}_i$	-0.082(0.934)	-0.082(0.466)	-0.082(0.563)	0.738(0.934)
$\text{time}_2*\text{decision}_i$	0.561(0.967)	0.561(0.715)	0.561(0.745)	1.215(0.959)
$\text{time}_3*\text{decision}_i$	0.089(0.954)	0.089(0.521)	0.089(0.344)	0.766(0.944)
$\text{time}_4*\text{decision}_i$	0.048(0.959)	0.048(0.517)	0.048(0.577)	0.699(0.951)
$\text{AVD}_{i,t}$	-0.250(0.918)	-0.250(0.428)	-0.250(0.413)	-1.080(0.913)
$\text{PU}_{i,t}$	0.216(0.964)	0.216(0.443)	0.216(0.484)	-0.668(1.018)
$\text{SD}_{i,t}$	0.333(0.980)	0.333(0.715)	0.333(0.623)	-0.610(1.251)
R^2	0.930	0.930	0.930	0.411

Standard errors are given in parentheses. Intercept and year controls (μ_t) are not recorded.

5.4.4 Impact of AD actions on EU-15 imports from the rest of the world (non-NMS-12 and non-EU; unit volumes)

With regard to EU-15 imports from the rest of the world measured in volumes (kg), there is more evidence of an effect of AD measures on imports. In the first period after the investigation is initiated imports increase, irrespective of the decision whether a measure is imposed or not (coefficient of time_1 for OLS robust and cluster analysis: 0.168, 18.29%, see Table 5.15). Furthermore, if the decision is taken into account whether a measure is imposed or

not, the row (rest of the world) countries benefit largely from AD measures. For OLS robust and cluster analysis the variables $\text{time}_1 * \text{decision}_i$, $\text{time}_2 * \text{decision}_i$, $\text{time}_3 * \text{decision}_i$, and $\text{time}_4 * \text{decision}_i$ all have a positive coefficient, while OLS does for $\text{time}_2 * \text{decision}_i$. This differs from the previous findings that comprise the entire non-named countries (Table 5.2), but is in line with Table 5.11 (shown in the appendix) where the non-named country sample starts in 1999. A comparison between NMS-12 and row countries, however, is difficult, as the NMS-12 unit volumes results are largely not significant. The intuition could nevertheless be that the more recent years (from 1999 onwards, instead of from 1995 as in the complete sample) were more beneficial for row countries and non-named countries (see Table 5.11 and Table 5.15). Furthermore, if China is a named country imports are slightly lower by -11.75% (coefficient: -0.125). The finding that the different tariffs $\text{AVD}_{i,t}$, $\text{PU}_{i,t}$ and $\text{SD}_{i,t}$ lower the imports from non-named row (rest of the world) countries, however, is contradictory, as tariffs are not assumed to decrease non-named row imports. The F-test for the individual fixed effects is not significant (p -value 0.797) and therefore the fixed effects results have to be used with caution, which is why the column is shown in italics.

Table 5.15: Estimations of the effect of AD actions on EU-15 imports from the rest of the world (unit volumes)

	OLS	OLS robust	Cluster analysis	<i>Fixed effects</i>
Variable	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)	<i>Coefficient (Standard error)</i>
$\ln \text{IMP}_{i,t-1}$	0.954(0.020)***	0.954(0.025)***	0.954(0.023)***	<i>0.624(0.136)***</i>
$\ln \text{IMP}_{i,t-1} -$				
$\ln \text{IMP}_{i,t-2}$	-0.013(0.082)	-0.013(0.106)	-0.013(0.101)	<i>0.109(0.137)</i>
$\ln \text{Duty}_{i,t}$	0.108(0.373)	0.108(0.279)	0.108(0.249)	<i>-0.409(0.651)</i>
NumEUcty_i	0.085(0.070)	0.085(0.061)	0.085(0.060)	
NumNamedcty_i	0.024(0.094)	0.024(0.083)	0.024(0.071)	
China_i	-0.125(0.093)	-0.125(0.054)**	-0.125(0.057)**	
time_1	0.168(0.151)	0.168(0.082)**	0.168(0.088)*	<i>0.209(0.159)</i>
time_2	-0.306(0.197)	-0.306(0.277)	-0.306(0.278)	<i>-0.267(0.218)</i>
time_3	-0.071(0.189)	-0.071(0.145)	-0.071(0.134)	<i>-0.103(0.205)</i>
time_4	0.163(0.213)	0.163(0.178)	0.163(0.173)	<i>0.076(0.205)</i>
$\text{time}_1 * \text{decision}_i$	0.657(0.495)	0.657(0.134)***	0.657(0.159)***	<i>1.244(0.562)**</i>
$\text{time}_2 * \text{decision}_i$	1.173(0.509)**	1.173(0.305)***	1.173(0.300)***	<i>1.774(0.577)***</i>
$\text{time}_3 * \text{decision}_i$	0.452(0.502)	0.452(0.176)**	0.452(0.183)**	<i>1.085(0.566)*</i>
$\text{time}_4 * \text{decision}_i$	0.454(0.511)	0.454(0.155)***	0.454(0.147)***	<i>1.056(0.579)*</i>
$\text{AVD}_{i,t}$	-0.668(0.487)	-0.668(0.132)***	-0.668(0.123)***	<i>-1.198(0.551)**</i>
$\text{PU}_{i,t}$	-0.501(0.516)	-0.501(0.177)***	-0.501(0.238)**	<i>-0.977(0.621)</i>
$\text{SD}_{i,t}$	-1.448(0.500)***	-1.448(0.355)***	-1.448(0.220)***	<i>-1.836(0.635)***</i>
R^2	0.956	0.956	0.956	<i>0.430</i>

Standard errors are given in parentheses. Intercept and year controls (μ_i) are not recorded.

5.4.5 Arellano-Bond estimations of EU-15 imports from NMS-12 countries and the rest of the world (unit values and unit volumes)

According to the results when applying Arellano-Bond (see Table 5.16), the NMS-12 countries and therefore Eastern Europe benefited largely and more than the rest of the world from the imposition of AD measures, but lose imports as a result of AD investigations which do not result in imposition of a measure. If a measure is imposed (variable $time_t * decision_i$), there is strong evidence that this positively influences EU-15 imports from NMS-12 countries, with coefficients between 0.410 and 0.960, while for row (rest of the world) countries results are mixed.

Table 5.16: Arellano-Bond estimations of the effect of AD actions on EU-15 imports from NMS-12 countries and the rest of the world (row; unit values and unit volumes)

Sample	NMS-12, unit values	Row, unit values	NMS-12, unit volumes	Row, unit volumes
Variable	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)
$\ln IMP_{i,t-1}$	0.627(0.046)***	0.201(0.033)	0.334(0.057)***	0.247(0.039)***
$\ln IMP_{i,t-2}$	-0.099(0.021)***	0.020(0.021)	-0.066(0.025)***	0.049(0.028)*
$\ln Duty_{i,t}$	-1.319(0.469)***	-0.573(0.182)	-0.254(0.554)	-0.430(0.190)**
$time_1$	-0.018(0.055)	0.153(0.029)	0.057(0.102)	0.184(0.031)***
$time_2$	-0.458(0.232)**	-0.002(0.065)	-0.344(0.119)***	-0.109(0.077)
$time_3$	-0.305(0.107)***	-0.049(0.062)	-0.138(0.136)	-0.128(0.063)**
$time_4$				
$time_1 * decision_i$	0.639(0.180)***	0.130(0.081)	0.527(0.188)***	0.032(0.072)
$time_2 * decision_i$	0.960(0.239)***	0.355(0.086)	0.936(0.215)***	0.409(0.062)***
$time_3 * decision_i$	0.410(0.150)***	0.111(0.062)	0.278(0.166)*	
$time_4 * decision_i$				-0.134(0.077)*
$AVD_{i,t}$	-0.566(0.203)***	0.053(0.092)	-0.815(0.217)***	-0.002(0.086)
$PU_{i,t}$	-0.457(0.271)*	-0.133(0.128)	-0.563(0.230)**	-0.002(0.109)
$SD_{i,t}$	0.033(0.348)	-0.239(0.104)	-0.567(0.514)	-0.198(0.069)***
Sargan test (p)	0.567	0.419	0.751	0.330
AR(1) (p-value)	0.013	0.598	0.030	0.726
AR(2) (p-value)	0.812	0.049	0.539	0.623

Standard errors are given in parentheses. Intercept and year controls (μ_t) are not recorded.

Specifically, for NMS-12 countries the variables for $time_t * decision_i$ are strongly significant with a positive coefficient for the first three periods following an AD investigation, while for row countries (in unit volumes) $time_2 * decision_i$ has a positive (0.409) and $time_4 * decision_i$ has a negative coefficient (-0.134). However, irrespective of imposing a measure ($time_t$), NMS-12 countries lose in the second period (coefficient for unit values $time_2$: -0.458; unit volumes $time_2$:

-0.344) and additionally in the third period (only unit values time_3 : -0.305), while row countries gain in the first period (time_1 : 0.184; only unit volumes), but lose in the third period (time_3 : -0.128; only unit volumes).²⁰³

The row results for import values are shown in italics, as the p-value for AR(2) is below five percent and therefore significant, which rejects the use of Arellano-Bond in this column. Additionally, for both row samples the AR(1) test is rejected. The type of duties levied ($\text{AVD}_{i,t}$, $\text{PU}_{i,t}$, $\text{SD}_{i,t}$) shows mixed results. There is also evidence that the amount of the duty ($\ln\text{Duty}_{i,t}$) negatively influences imports.

5.5 Impact of AD actions in cases involving China

China is particularly exciting for research as it is one of the largest trading partners of the EU (especially with regard to EU imports from China) and at the same time part of many AD investigations. Therefore, China merits a special section in this chapter.²⁰⁴ This section analyses only AD investigations between 1997 and 2004 where China is one of the named countries, i.e., this is a partial sample of the complete sample on named countries in section 5.3.1. This implies that the timeframe as such remains unchanged, but all investigations where China is not a named country are excluded, which reduces the sample size to 41 investigations from formerly 106 in the complete sample.

In case a measure is imposed ($\text{time}_i * \text{decision}_i$), there is a large, negative impact on imports in the first period (OLS, OLS robust, and cluster analysis: -0.702, -50.44%) and additionally in the third period (OLS and OLS robust: -0.529, -41.08%), see Table 5.17. Compared to the complete sample of named countries in section 5.3.1, EU-15 imports from named countries involving China do not depend on the variable time_i at all, but rather on the decision whether a measure has been imposed or not. Hence, the sheer AD investigation as such does not have an impact on imports, while the imposition of an AD measure affects imports, if China is named in a case, much more than if China is not a named country. The coefficient for $\text{time}_1 * \text{decision}_1$ (-0.702, -50.44%) in Table 5.17 is almost three times as large as in Table 5.1 (of section 5.3.1) for all named countries (-0.268, -23.51%). However, the size of the duty ($\ln\text{Duty}_{i,t}$), the number of named (NumNamedcty_i) or number of EU countries (NumEUcty_i) do not play a role.

²⁰³ Table 5.12 in the appendix gives the complete Arellano-Bond results for non-named countries starting in 1999 as a comparison, which serves as an “average” of NMS-12 and Row countries combined.

²⁰⁴ For brevity, this analysis is only done in unit values (EUR) and not in unit volumes (kg).

Table 5.17: Estimations of the effect of AD actions on EU-15 imports from named countries, only AD actions involving China (unit values)

	OLS	OLS robust	Cluster analysis	Fixed effects
Variable	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)
$\ln\text{IMP}_{i,t-1}$	0.873(0.037)***	0.873(0.052)***	0.873(0.070)***	0.236(0.080)***
$\ln\text{IMP}_{i,t-1} -$				
$\ln\text{IMP}_{i,t-2}$	0.118(0.070)*	0.118(0.093)	0.118(0.067)*	0.319(0.077)***
$\ln\text{Duty}_{i,t}$	0.026(0.477)	0.026(0.482)	0.026(0.515)	-0.723(0.753)
NumEUcty_i	-0.026(0.091)	-0.026(0.090)	-0.026(0.088)	
NumNamedcty_i	0.001(0.109)	0.001(0.113)	0.001(0.116)	
time_1	-0.021(0.217)	-0.021(0.105)	-0.021(0.098)	0.114(0.213)
time_2	0.057(0.196)	0.057(0.127)	0.057(0.143)	0.154(0.209)
time_3	0.074(0.202)	0.074(0.163)	0.074(0.225)	0.187(0.228)
time_4	-0.013(0.204)	-0.013(0.140)	-0.013(0.156)	0.177(0.251)
$\text{time}_1*\text{decision}_i$	-0.702(0.294)**	-0.702(0.238)***	-0.702(0.192)***	-0.336(0.421)
$\text{time}_2*\text{decision}_i$	-0.362(0.281)	-0.362(0.314)	-0.362(0.336)	-0.094(0.418)
$\text{time}_3*\text{decision}_i$	-0.529(0.280)*	-0.529(0.304)*	-0.529(0.394)	-0.369(0.415)
$\text{time}_4*\text{decision}_i$				-0.022(0.428)
$\text{AVD}_{i,t}$	0.187(0.251)	0.187(0.271)	0.187(0.205)	0.039(0.352)
$\text{PU}_{i,t}$	0.339(0.288)	0.339(0.248)	0.339(0.235)	
$\text{SD}_{i,t}$	0.030(0.292)	0.030(0.247)	0.030(0.197)	-0.016(0.428)
R^2	0.860	0.860	0.860	0.389

Standard errors are given in parentheses. Intercept and year controls (μ_i) are not recorded.

When conducting the analysis with Arellano-Bond (Table 5.18) the findings from Table 5.17 are confirmed with regard to the fact that the size of the duty does not play a role. In contrast, if a measure is imposed, there is no significant effect to be found in subsequent periods. There is, however, a slightly positive effect in the first period after the start of the AD investigation, as the coefficient of the variable time_1 is 0.093. The overall picture that can be drawn from the analysis on China is therefore mixed.

Table 5.18: Arellano-Bond estimations of the effect of AD actions on EU-15 imports from named countries, only AD actions involving China (unit values)

Sample	China only	Complete set from section 5.3.7, Table 5.7
Variable	Coefficient (Standard error)	Coefficient (Standard error)
$\ln \text{IMP}_{i,t-1}$	0.299(0.068)***	0.194(0.036)***
$\ln \text{IMP}_{i,t-2}$	-0.218(0.054)***	-0.076(0.014)***
$\ln \text{Duty}_{i,t}$	-0.538(0.743)	-0.897(0.242)***
time_1	0.093(0.040)**	0.049(0.027)*
time_2	0.068(0.044)	0.015(0.035)
time_3	-0.011(0.056)	0.052(0.027)*
time_4		
$\text{time}_1 * \text{decision}_i$	-0.147(0.157)	-0.678(0.175)***
$\text{time}_2 * \text{decision}_i$	0.044(0.091)	-0.789(0.170)***
$\text{time}_3 * \text{decision}_i$	-0.038(0.124)	-0.851(0.173)***
$\text{time}_4 * \text{decision}_i$		-0.758(0.182)***
$\text{AVD}_{i,t}$	-0.049(0.276)	0.666(0.156)***
$\text{PU}_{i,t}$	-0.412(0.270)	0.758(0.236)***
$\text{SD}_{i,t}$	-0.366(0.269)	0.361(0.181)**
Sargan test (p)	1.000	0.241
AR(1) (p-value)	0.210	0.029
AR(2) (p-value)	0.294	0.867

Standard errors are given in parentheses. Intercept and year controls (μ_i) are not recorded.

5.6 Summary

EU-15 internal imports benefit from a measure being imposed after AD investigations, while named countries and non-named countries see a decreasing trade volume. Without imposition of an AD measure imports from named and non-named countries increase to a small extent while EU-15 internal imports decrease. This is the result for dynamic panel estimations (Arellano-Bond). When looking at OLS, OLS robust, cluster analysis, and fixed effects results, these are in general less significant than the results using Arellano-Bond. They show that in the periods after the investigation, imports from named countries decrease, those of non-named countries slightly increase, while there is almost no change for EU-15 countries (except for the fixed effects estimator in unit volumes, which sees a decreasing trade). The imposition of AD measures is generally negative for imports from named countries, while only when looking at imports measured in unit volumes is there a weakly and partially positive effect on imports from non-named countries and EU-15 internal imports.

The analysis of imports (unit values) from the (at that time) future 12 new EU member states (NMS-12) gives results which are – when using OLS, OLS robust, cluster analysis, and fixed effects – less clear-cut and significant than those for the entire sample. Only the fixed effects estimator for unit values shows strongly significant results. In case of an imposed measure, NMS-12 countries benefit greatly from AD measures taken against other countries. When using Arellano-Bond instead, if a measure is imposed, there is again strong evidence that this positively influences imports from NMS-12 countries. If no measure is imposed, however, NMS-12 countries do not benefit in terms of increased trading volumes. The NMS-12 countries and therefore Eastern Europe benefited greatly and more than other non-named countries from the imposition of AD measures, but not from AD investigations without imposition of a measure.

An additional section is dedicated to all investigations in which China is one of the named countries. In case an AD measure is imposed this has a large, negative impact on imports, while the sheer investigation as such does not have an impact on imports. This is remarkable, because imports in case China is one of the named countries are affected to a much greater extent by the imposition of a measure than other countries. One could conclude that AD measures are very effective towards China. When conducting the analysis with Arellano-Bond the findings are different, because in case a measure is imposed there is no significant effect found in the subsequent periods, whereas there is a slightly positive effect in the first period after the start of the AD investigation (irrespective of a measure being imposed). The overall picture that can be drawn from the analysis on AD actions involving China is therefore mixed.

6 Which factors influence the outcome of EU anti-dumping decisions?

6.1 Introduction

The European Union is the third most important actor in anti-dumping procedures in the world.²⁰⁵ Thus, the following questions, to be addressed in this chapter, arise: Which factors actually influence the outcome of EU anti-dumping decisions and why are duties levied in one case and why not in another case even if two cases have similar preconditions? A variety of factors may be relevant such as the level of trade volumes between the EU and the respective countries, differences in treatment of developing and industrial countries, or the existence of preferential trade agreements. Especially the possibility of differences in the treatment of poorer (developing or emerging) and richer (industrial) countries and differences between countries with and without preferential trade agreements are interesting questions.

As described in chapter 5, an anti-dumping (AD) investigation²⁰⁶ in the European Union (EU) begins after a complaint has been lodged with the EU Commission by an EU producer²⁰⁷, an EU country or by the EU Commission itself.²⁰⁸ The EU Commission is then responsible for the administration of the entire process. In order for an anti-dumping measure to be imposed, certain conditions, such as that dumping of a product and an injury of the respective industry have to have occurred, are investigated and must be fulfilled. Then, finally, there is a preliminary and final decision whether to impose a duty or not. For this chapter, the final decision and therefore the final imposition of AD measures is important.

Busch and Reinhardt (“Developing Countries and General Agreement on Tariffs and Trade/World Trade Organization Dispute Settlement“, 2003) ask, whether “developing countries secured more concessions, by which [they] mean favourable trade policy outcomes, in WTO versus GATT dispute settlement? And second, what explains any differences in the outcomes realized by developing, as opposed to developed countries?”²⁰⁹ They find that outcomes of dispute settlement between trading partner countries under the WTO (World Trade Organization) have not been more favourable to developing countries compared to developed countries than under GATT (General Agreement on Tariffs and Trade, predecessor of WTO). This is, among other reasons, the case because of insufficient legal capacities in developing countries to accompany all aspects and processes of a complaint. Busch and Reinhardt also examined other factors that could possibly influence rulings in favour of a

²⁰⁵ See Bown (2007), p. 8. Only India and the United States use anti-dumping measures more often.

²⁰⁶ The terms case and investigation are used simultaneously in this study.

²⁰⁷ If the complaint is lodged by EU producers, the producers have to account for at least 25% of total EU production of the product and not be opposed by EU companies which account for a production volume that is larger than that of the complainants.

²⁰⁸ The source of this paragraph is: European Commission, DG Trade (2010a).

²⁰⁹ Busch, Reinhardt (2003), p. 1.

complainant or against him, including the complainant and defendant's GDP, per capita income or whether it is a multilateral case. Examined are cases between the years 1980 and 2000 and only those which have been concluded.

Although the relationship between the WTO and the European Union is not a subject of this chapter, for clarification and completion it is important to know that a dispute settlement (DS) carried out by the WTO is only initiated if one WTO member country (for example the EU) imposes a measure that another WTO member (for example China) does not agree with. For example, China could then lodge a complaint with the WTO thus initiating the DS procedure. Therefore, in general, WTO dispute settlements begin after the imposition of an (EU) AD measure. The Uruguay Round agreement in the mid 1990s changed the procedures of dispute settlement: the resulting procedures' structure is more stringent with stricter timetables.²¹⁰ Furthermore, for any ruling to be rejected unanimous agreement by all WTO members on the matter is required.²¹¹ The aim of the WTO is nevertheless to reach a conclusion through negotiations and not through judgement and indeed, from 1995 until January 2008 only 136 out of 369 cases went through a complete panel process, while the remaining cases were "settled out of court".²¹²

Dispute settlement may apply to trade subjects other than anti-dumping cases and cover more WTO rules such as for example subsidies, safeguards, or intellectual property rights. This is why the number of cases (369) between 1995 and 2008 is relatively high. When only counting anti-dumping cases (based on article VI, WTO) for the years 1995 to 2011, 22 cases are listed by the WTO concerning the EU, with the EU being a complainant 14 times (USA: 9 times, China: 2 times, Argentina: 2 times, India: 1 time) and facing a complaint from other countries 8 times: India (4 times), China (2 times), Norway (1 time), and Brazil (1 time).²¹³ In the 8 cases in which the EU faced a complaint and when it came to a ruling, the WTO usually found some allegations to be justified, while other allegations were deemed to be unjustified. Or there is a third option: In case DS 313, for example, India and the EU mutually agreed to terminate the EU AD measure.²¹⁴ Where allegations were justified, the EU was required to bring its AD measures into conformity. Consequently, rulings are usually not to one hundred percent in favour of one party or the other.

Previous work on EU anti-dumping policy has been carried out by Schuknecht and Stephan (1994), who find that the anticipation of AD protection can initially lead to increasing exports by named countries, and Eymann and Schuknecht (1996), who (for the period 1980-1990) empirically examine EU anti-dumping decisions and the relevant underlying political and technical factors, for example changes in the market share, the number of countries and products affected, or a decrease in the EU industry's profits.

²¹⁰ See WTO (2011a).

²¹¹ See WTO (2011a).

²¹² See WTO (2011a).

²¹³ See WTO (2011b).

²¹⁴ For a chronology of WTO dispute settlement (DS) cases see WTO (2011b).

The idea of this chapter is to ask a related, but very different question compared to Busch and Reinhardt (2003) and Eymann and Schuknecht (1996) for the European Union, and also to examine more recent years (1995-2009) and a different set of variables: Which factors impact the outcome of EU anti-dumping decisions? Is it important for the outcome of the decision whether a country or group of countries is wealthy and has a high trade volume with the European Union? And is the result different when China or one of the (at that time prospective) new European Union member states (NMS-12) is one of the named countries in the AD investigation? This chapter proceeds as follows: Section 6.2 describes the model, the data and the applied econometric techniques. Section 6.3 gives the empirical results for the complete data set and varying timeframes and geographic specifications. Section 6.4 finally summarises.

6.2 Empirical approach

This section describes the model and gives a brief description of the choice of variables and the data sources. It also describes the econometric concept and gives an overview of the values of the underlying variables (such as mean, standard deviation, minima and maxima).

The idea of the empirical model is to test whether anti-dumping decisions depend on, for example, the amount (size) of imports from different countries, or on the GDP or GDP per capita of the countries named in the investigation. The model also examines whether an industrial country, a future European Union country, a country with a preferential trade agreement with the European Union or whether China is one of the named countries and if this has an impact on the AD decision.

$$\text{AD-Decision}_{i,t} = \alpha + \beta_{\text{importsrow}} \ln \text{importsrow}_{i,t} + \beta_{\text{importsnamed}} \ln \text{importsnamed}_{i,t} + \beta_{\text{importsEUintra}} \ln \text{importsEUintra}_{i,t} + \beta_{\text{GDPnamed}} \ln \text{GDP}_{\text{named},i,t} + \beta_{\text{GDPcap,named}} \ln \text{GDPcap}_{\text{named},i,t} + \beta_{\text{IC}} \text{IC}_i + \beta_{\text{NumNamedcty}} \text{NumNamedcty}_{i,t} + \beta_{\text{NMS-12}} \text{NMS-12}_i + \beta_{\text{PTA}} \text{PTA}_{i,t} + \beta_{\text{China}} \text{China}_i + \epsilon_{i,t}$$

where subscript i denotes a specific case (anti-dumping investigation) and t denotes time.

The dependent variable $\text{AD-Decision}_{i,t}$ is a binary variable that takes the value one if it was decided to impose an AD measure on the named country or countries for case i in year t .²¹⁵ This means that both the final dumping decision and the final injury decision were affirmative and a concrete anti-dumping measure (like an ad-valorem duty, price undertaking or specific duty) was imposed. There is no differentiation between the three different anti-dumping measures such as ad-valorem duties, price undertakings or specific duties. It is only important whether a duty was finally levied or not, since this chapter seeks to answer the question which factors influence the

²¹⁵ Sources: Bown (2009, 2010).

decision whether a duty is levied, but is not concerned with the kind of duty levied, which would be a separate question.

The following variables describe the natural logarithm of imports of the EU-15 countries at time t from a precisely defined aggregate of countries: $\ln\text{importsrow}_{i,t}$ are the imports of the EU-15 countries from the rest of the world, which excludes EU-15 internal imports and imports from named countries. This variable can also be designated imports from non-named countries. $\ln\text{importsnamed}_{i,t}$ are the imports of the EU-15 countries from named countries, which means countries which are accused of dumping. $\ln\text{importsEUintra}_{i,t}$ are the internal EU-15 countries' imports, which is EU-15 "domestic" trade (imports only!). We use the same relevant product class codes of imported goods as listed in Bown (2009, 2010) "Global Antidumping Database". With these codes, the data is then extracted from the Eurostat external trade database. If the anti-dumping investigation refers to several, that is more than one, eight-digit codes of the so-called "Combined Nomenclature" (CN)²¹⁶, the individual values are summed up in order to cover the entire relevant market. The import figures are extracted in Euro (called unit values) and then deflated.^{217 218}

The idea of the variables is to control whether relatively high or low trade volumes influence the outcome of the AD decision. One could, for example, claim that high trade volumes with the named countries for certain products could make the imposition of an AD duty more likely, which is tested by the variable.²¹⁹

The variable $\ln\text{GDP}_{\text{named},i,t}$ is the natural logarithm of the sum of constant gross domestic products (GDP) of named countries in the anti-dumping investigation i . Figures are converted using the USD/EUR exchange rate in the year 2000. The sum of GDP of named countries serves as a proxy for market size or market power. For example, it could make a difference whether China, the USA, Russia, Turkey, and Ukraine (a case in 2007) with relatively large GDPs or Belarus, South Korea, and Taiwan (a case in 2005) are concerned.²²⁰

The variable $\ln\text{GDPcap}_{\text{named},i,t}$ is the natural logarithm of the constant gross domestic product (GDP) per capita of the named countries in the anti-dumping investigation i . Each country's

²¹⁶ The Combined Nomenclature is an 8 digit numerical coding system composed of the more common 6 digit HS (Harmonized Commodity Description and Coding System) + 2 additional digits.

²¹⁷ Imports (in Euro) were deflated by a common deflator of the EU-15 countries, base year 2000. Source: Eurostat.

²¹⁸ Sources: Bown (2009, 2010) and Eurostat. The base year of the deflator is 2000.

²¹⁹ When analysing EU-15 imports from named countries ($\ln\text{importsnamed}_{i,t}$), non-named countries in the rest of the world ($\ln\text{importsrow}_{i,t}$) or EU-15 internal imports ($\ln\text{importsEUintra}_{i,t}$) it is important to note that only a small share of imports, both in terms of GDP and in terms of total imports are concerned by the possible imposition of an anti-dumping duty. For example in one case, only the data for the respective imports of fax machines (CN code: 85172100) from Japan, China, Korea, Malaysia, Singapore, Thailand, Taiwan is extracted from Eurostat compared to imports of fax machines from other EU-15 countries and from the rest of the world, but not total imports from the different country aggregates. Generally, a lot of products are in the categories iron and steel, textile and footwear, electrical machinery and to some extent chemical/plastic products.

²²⁰ Sources: Bown (2009, 2010), World Bank, IMF, and Deutsche Bundesbank (2001), p. 10. The sources for the variable $\ln\text{GDPcap}_{\text{named},i,t}$ are the same ones. The base year of both GDP variables is 2000.

GDP per capita is weighted by using the country's share in the EU-15 total import trade volume, considering only imports of the relevant product class from named countries. This is a variable measuring the average wealth of the countries named in the investigation. Figures are converted with the USD/EUR exchange rate of the year 2000.

IC_i is a binary variable that takes the value one if there is at least one country among the named countries which has a GDP per capita of 8000 USD or more. The variable thus controls for an industrial or advanced emerging market country being among the named countries and whether this makes a difference for the outcome of the AD decision. In general, definitions for countries being advanced or emerging are varied and differ largely. 8000 USD was selected as a threshold as, firstly, most countries stay constantly sharply over or definitely below this value over time, secondly, it is a clear way to distinguish them from one another and, thirdly, because it is close to the upper bound used by the World Bank to classify upper middle income countries (2010 gross national income (GNI): 3,976 USD - 12,275 USD). The source for the underlying GDP figures is the World Bank. In the dataset considered, an industrial country is part of an AD investigation in 68 of 195 cases (34.87%).

$NumNamedcty_i$ is a binary variable that takes the value one if there are three or more named countries in the anti-dumping investigation (31.28% of cases = 61 cases) and zero if not. The idea is to test whether cases with a large number of named countries are treated differently than cases with just one or two named countries. The case with the greatest number of named countries in this sample had 10 countries named (on imports of urea in 2002), while quite a large number of cases only named a single country (51.28% = 100 cases) or two (17.44% = 34 cases).²²¹

$NMS-12_i$ is a binary variable that takes the value one if at least one (until the year 2004/2007 maybe prospective) new EU-27 member state is part of the case/investigation. In 1996, for example, there was a case against the Czech Republic, Slovakia and Poland while in 2006 there were two last cases where Romania was concerned. New member states were only concerned in 29 of 195 cases (14.87%).

$PTA_{i,t}$ is a binary variable that takes the value one if there is a preferential trade agreement²²² between at least one country named in the investigation and the European Union at the time of the anti-dumping decision. Potential trade agreements between the NMS-12 and the EU-15 are covered by the variable $NMS-12_i$ in order to avoid correlations between the respective variables. In only 24 of 195 cases (12.31%) at least one of the countries named had a PTA with the EU.²²³

²²¹ The sources are Bown (2009, 2010).

²²² A PTA is a free trade agreement (for example, between the EU and Chile) or a customs union (for example, between the EU and Turkey).

²²³ The source is the WTO RTA (regional trade agreement) database, www.wto.org.

China_{*i*} is a binary variable that takes the value one if China is part of the anti-dumping investigation and zero if not. China is very frequently named in an AD investigation (91 of 195 cases). This constitutes almost half of the cases.²²⁴ $\epsilon_{i,t}$ is the error term.

There is no time variation within one case *i*, as the case is decided in one particular year and all variables are based on that year. However, the different cases occurred between 1995 and 2009. Therefore, for clarity purposes the index *t* is valuable for this pooled cross section data set. The time index *t* is based on the date (year) of the final anti-dumping decision, when the decision was made on whether to impose AD measures or not. This is important, as in Bown's (2009, 2010) dataset there is a differentiation between the date of the final dumping decision, the date of the final injury decision, and the date of imposition or non-imposition of (final) anti-dumping measures. This was controlled for when composing the dataset and there was essentially no relevant difference between the different dates, which is why the analysis here always refers to the final dumping decision. As annual data is used throughout the dataset, the question is also less important in general, as small differences would not show up in the data (i.e., if decisions were made at the beginning of the year in February and the end of the year in December).

As mentioned before, the timeframe of this chapter includes cases upon which a final decision was reached between (and including) 1995 and 2009. This comprises the timeframe which was used in chapter 5 (see chapter 6.3.2), but is extended in order to include more cases (see section 6.3.1 for the complete sample). Unlike in chapter 5, the data in this chapter for one case/investigation are always based on one single year, the year of the final decision, whether a duty is levied or not. This is based on the idea that only the factors influencing the decision in this particular year are of importance. If one were to consider factors from the years before (lagged variables), these are at risk of influencing the so-called preliminary dumping decisions instead of the final dumping decisions. The final dumping decisions are, however, more important in the context of this study. Furthermore, in contrast to chapter 5, this chapter is merely concerned with the magnitude of trade volumes, not the development over time. This implies that if a case was decided in the year 2000, trade data and respective GDPs of EU countries or named countries are also from 2000.

If several countries are concerned in one investigation, this is counted as one case with one decision on whether to impose AD measures or not.²²⁵ This is done in order not to bias the dataset towards cases with several countries, as these cases would count more than once otherwise. Additionally, even though the final AD decisions are listed separately for each country named in Bown (2009, 2010), the final AD decision is the same within one investigation in almost all cases. The decisions differ only in rare cases and almost only for countries with a marginal weight in the trade volume of the case. It is important to mention that not all

²²⁴ The sources are Bown (2009, 2010).

²²⁵ For example, in 1999 there was an AD decision on a case concerning South Africa, India, Ukraine, China, and South Korea about Steel Wire Rope where a price undertaking was finally imposed; or in 2006, there was an AD decision on a case concerning China, Hong Kong, and Taiwan about DVDs that was terminated in an early stage.

investigations result in a duty being imposed. In our sample of 195 cases, 63% of decisions resulted in the imposition of a duty.

While a case may contain several countries and products (which are, however, mostly within the same product category, such as different steel products or chemical products), it could also be that only one product and one country is concerned (for example a 2009 case concerning sodium metal in the United States). A case is defined by its unique same case code in Bown's (2009, 2010) dataset, which clearly denotes the countries and products concerned in each case.

Reviews of AD cases are generally excluded from the analysis, which will only consider the AD decisions of "freshly" started cases, as reviews could bias the analysis. For example, up to 1998 there were four review cases that could not be included in the analysis. A few cases (for example, two cases up to 1998) were also excluded if there was no trade data available, because of the missing relevant product codes in Bown's (2009, 2010) dataset. All in all, in the complete sample, there are 195 AD cases between the years 1995 and 2009.

In case of a duty being levied, duties may be relatively high or low. The size of the duty, however, is not a variable in this model, because it is only relevant regarding whether a duty was levied as such or not, and not its size. Additionally, the size of a duty would be highly correlated with the decisive dependent dummy variable $AD-Decision_{i,t}$ which could result in a misleading interpretation.

In this chapter, three different econometric methods are used. The probit model, the logit model, and ordinary least squares (OLS). In case of a binary dependent variable the OLS model, which is in this case called limited probability model (LPM), has important limitations. "The two most important disadvantages are that the fitted probabilities can be less than zero or greater than one and the partial effect of any explanatory variable (...) is constant."²²⁶ This implies that if a variable increases this would always have a constant and not for example a diminishing influence on the dependent (binary) variable, which is not appropriate for a binary response model. Holding other variables constant, it makes a difference on the predicted probability of an AD measure whether EU imports from named countries for example increase from € 1 million to € 1.5 million or from € 10 million to € 15 million. Even though in both cases imports increase by 50%, the increases are from very different levels. This problem can be overcome by the probit and the logit model, as the dependent variable is not the probability, but a mathematical conversion of it and the partial effects of a variable on the probability are potentially decreasing or increasing and not constant.

One reason why the probit model is generally preferred to the logit model, and is therefore always named first, is the normality assumption for $\epsilon_{i,t}$, i.e., the properties of the normal

²²⁶ Wooldridge (2002), p. 575.

distribution.²²⁷ In this chapter all three models will be applied to allow for sufficient comparisons. It is important to note that the significance and the sign of the coefficients can be directly compared between the models, while the size of the coefficients cannot be directly compared, but has to be converted due to the different underlying mathematical rules of the methods.

Table 6.11 in the appendix reports the number of observations for the respective variables, their mean, their standard deviation and the minima and maxima. This is particularly important for the probit and logit analysis below and the specific calculations of changes in dummy variables from zero to one.

6.3 Empirical results

In the following sections different timeframes of the underlying dataset are examined. Section 6.3.1 shows the complete sample with all 195 cases from 1995 to 2009, followed by a shortened sample in section 6.3.2, which describes the selection of cases in chapter 5 (1997-2004), where effects of AD investigations on EU imports during the two periods before and four periods after the start of the investigation were examined. In section 6.3.3 all 91 cases where China was involved are analysed and it is shown whether this makes a difference for the outcome, i.e., the underlying variables. Section 6.3.4 explicitly examines if the trade volumes between the EU-15 and the 12 new (at that time prospective) EU member states (NMS-12) versus the rest of the world make a difference for the results. Finally, section 6.3.5 includes two new variables on the different EU-15 countries involved in the investigation and therefore examines some particularities of the respective EU-15 countries. A separate small section is dedicated to this question, as data for the two additional variables is not available for every case, which reduces the sample size by almost a quarter.

6.3.1 Empirical results of the complete sample for all AD cases between 1995 and 2009

In this section, the entire available sample with 195 cases is considered. The first and most important model in this chapter is the probit model.²²⁸ With regard to the different variables under investigation in the probit model, the variable $\ln\text{imports}_{\text{named},t}$ is significant with a negative coefficient. This means that if the trade volume between the EU-15 and named countries increases by one unit, this decreases the z-value by -0.122 (see Table 6.1). Thus, a one unit change for any variable in the probit model changes the z-value by the size of the coefficient in the table, which can then be converted into probabilities. Therefore, the dependent variable is only influenced by an independent variable indirectly, unlike in the LPM model. Hence, the higher the trade of the EU-15 with the named countries is, the lower is the

²²⁷ See Wooldridge (2002), p. 577.

²²⁸ The probit model has a p-value of 0.022 for the Chi² test meaning that the model as a whole is significant.

probability that an AD measure is imposed. In contrast, the trade volume between the EU-15 countries and the rest of the world or the EU-15 internal trade is not significant, and thus does not influence the decision to impose an AD measure.²²⁹

Table 6.1: Estimations for the complete sample, all AD cases between 1995 and 2009

	Probit model	Logit model	LPM (OLS)
Variable	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)
$\ln\text{importsrow}_{i,t}$	0.100(0.102)	0.163(0.170)	0.035(0.037)
$\ln\text{importsnamed}_{i,t}$	-0.122(0.071)*	-0.207(0.124)*	-0.043(0.025)*
$\ln\text{importsEUintra}_{i,t}$	0.031(0.112)	0.059(0.187)	0.011(0.040)
$\ln\text{GDP}_{\text{named},i,t}$	0.064(0.107)	0.121(0.180)	0.025(0.039)
$\ln\text{GDPcap}_{\text{named},i,t}$	0.087(0.152)	0.136(0.260)	0.027(0.055)
IC_i	-0.837(0.383)**	-1.369(0.647)**	-0.294(0.137)**
NumNamedcty_i	0.405(0.263)	0.658(0.439)	0.136(0.090)
NMS-12_i	0.065(0.313)	0.143(0.534)	0.029(0.112)
$\text{PTA}_{i,t}$	-0.834(0.320)***	-1.400(0.552)**	-0.303(0.115)***
China_i	0.127(0.280)	0.193(0.467)	0.046(0.100)
Intercept	-2.214(2.756)	-4.041(4.605)	-0.309(0.998)
Number of obs.	195	195	195

Standard errors are given in parentheses. The intercept is not recorded.

*** denotes significance at the 1% level, ** denotes significance at the 5% level,

* denotes significance at the 10% level.

The results also show that the two dummy variables IC_i and $\text{PTA}_{i,t}$ are significant and have a negative sign. Both of them decrease the probability of an AD measure by a greater extent than the variable $\ln\text{importsnamed}_{i,t}$ as their coefficient is higher. The purpose of including the dummy variable IC_i is to find out whether decisions on anti-dumping investigations are influenced by whether or not at least one industrial country or advanced emerging market is part of the investigation or whether only developing countries or poorer emerging markets are concerned. In order to qualify for being an industrial country the GDP per capita of a named country has to be higher than USD 8000. Basically, the question is raised whether decisions in EU anti-dumping procedures vary if only poor or at least one rich country is concerned, which is precisely captured by the dummy variable IC_i . In fact they do, as decisions strongly depend on this variable: if IC_i takes the value one, this decreases the z-value by -0.837 (this is the coefficient of IC_i in Table 6.1). The z-value is -0.182 when taking the means for all other variables (from Table 6.11) and setting IC_i equal to one. Converting the -0.182 into probabilities by consulting

²²⁹ For completion it was tested whether AD decisions could depend on imports from the previous year ($t-1$: ($\ln\text{importsrow}_{i,t-1} + \ln\text{importsnamed}_{i,t-1} + \ln\text{importsEUintra}_{i,t-1} + \dots$)) instead of the present year t , while all other variables were left unchanged. Because of data unavailability this reduces the sample size to 180 observations. Significance levels and results were however largely unchanged and confirmed. Only $\ln\text{importsnamed}_{i,t-1}$ is now insignificant compared to $\ln\text{importsnamed}_{i,t}$ in Table 6.1, where it is significant at the 10% level.

the z-table means that there is roughly a 42.9% chance of an AD measure being imposed if an industrial or advanced country is part of the case.

The other important and significant variable is the dummy variable $PTA_{i,t}$. This variable measures whether or not there is an existing preferential trade agreement between one of the countries named in the AD investigation and the European Union in the year of the AD decision. For example, the EU has a PTA with Turkey since 1996, with South Africa and Mexico since 2000 and with Egypt since 2004.²³⁰ Trade agreements with the twelve new EU member states prior to them joining the EU are not captured by this variable, as this is part of the variable $NMS-12_i$, which denotes cases where at least one prospective new member state is part of the investigation (i.e., is one of the named countries). The results for the dummy variable $PTA_{i,t}$ imply that if one of the countries named has a preferential trade agreement with the European Union this decreases the z-value by -0.834. The z-value is then -0.368 when taking the means for all other variables (from Table 6.11) and setting $PTA_{i,t}$ equal to one. Converting the -0.368 into a probability implies that there is roughly a 35.6% chance that an AD measure is imposed if there is a preferential trade agreement. In other words: The existence of a preferential trade agreement lowers the probability of a punishment through AD measures quite significantly.

Other variables taken into account in this model turn out to be less important in influencing the results, as none of them are significant. The variable $\ln GDP_{named,i,t}$, for example, controls for the fact that cases with economically important (large) named countries may be treated differently, as $\ln GDP_{named,i,t}$ refers to the market size of the respective named country. The idea is to take into consideration the absolute size and not the average size of markets. As mentioned above, it could make a difference whether China, the USA, Russia, Turkey, and Ukraine (a case in 2007) with relatively large GDPs are concerned or Belarus, South Korea, and Taiwan (a case in 2005). Furthermore, the variable $\ln GDPcap_{named,i,t}$ examines whether named countries with a relatively high average GDP per capita may be treated differently in the AD decision. As both variables are not significant, these factors do not seem to be important for the decision to impose an AD measure or not. The European Union's decision whether or not to impose AD measures is thus not affected by the presence of economically large and therefore powerful countries amongst the countries named. Other dummy variables, such as the number of countries named in the investigation ($NumNamedcty_i$), whether a country named is a prospective new member state of the European Union ($NMS-12_i$), and whether China is part of the investigation ($China_i$) or not are not significant either. One may have assumed that NMS-12 countries would receive a more favourable treatment; however, there is no evidence to support this hypothesis.

Even though economists tend to prefer the probit model over the logit model, it is worth considering the results of the logit model for comparison.²³¹ The coefficient of the variable

²³⁰ For detailed information see WTO Regional Trade Agreement (RTA) database: WTO (2012a) or Table 4.1.

²³¹ With a p-value of 0.022 for the χ^2 test the model has the same p-value like in the χ^2 test of the probit model and is significant.

PTA_{i,t} is -1.4 and it is again, as in the probit model, highly significant. To determine the effect of preferential trade agreements (i.e., with the dummy being equal to 1) on the probability of an anti-dumping measure being imposed, one has to convert the coefficient by taking $e^{-1.4} = 0.247$. Thus, the odds of AD measures being imposed decrease by -75.3% ($=(0.247-1)*100$) if a preferential trade agreement is in place. Similarly, the variable IC_i (the presence of an industrial country or advanced emerging market as a named country in the investigation), with a coefficient of -1.369, decreases the odds of an imposition of AD measures by -74.6%, while the trade volume between the EU-15 and named countries has a smaller influence with -18.7%.²³² All other variables are not significant. As in the probit model, a preferential trade agreement, an industrial country in the case, and higher trade volumes between named countries and the EU-15 decrease the probability that an AD measure is imposed. Thus, if named countries and the EU engage in trade extensively, this “prevents” named countries from receiving an AD duty to some extent.

As stated before, the signs of the coefficients of the probit model, the logit model, and the LPM can be directly compared, while the magnitude of the coefficients cannot be compared easily. According to Wooldridge (2002) the rule of thumb to compare probit and logit estimates is multiplying the probit coefficient estimates by 1.6.^{233 234}

Just as coefficients of the same variable in the probit and logit models cannot be compared directly, this is also true for the “percentage values” given above, as probit and logit refer to different econometric concepts. In the estimations for the probit model above, for example, it was noted that there is a 35.6% chance (out of 100%) that an AD measure is imposed if there is a preferential trade agreement in place with at least one of the named countries. This differs from the concept of odds used in the logit model. In the logit model, the odds of an imposition of AD measures decrease by -75.3% if a preferential trade agreement is in place. The term “odds” can be explained by the following example: If the probability p of an AD measure to be imposed is 0.4 and the complementary probability is 0.6, then the odds that the AD measure is going to be imposed is 0.66 ($\text{odds} = p/(1-p) = 0.4/0.6 = 0.66$). When using the logit model, if there is a preferential trade agreement in place, these odds (0.66) decrease by -75.3 % compared to the case in which there is no PTA in place. This obviously differs from the probit model, where the results are much more intuitive.

²³² Calculation of the effect of the variable IC_i: When taking $e^{-1.369} = 0.254$ this implies that the odds of an imposition of AD measures decrease by -74.6% ($=(0.254-1)*100$) if an industrial country is part of the investigation. Calculation for $\ln\text{imports}_{i,t}$: Taking $e^{-0.207} = 0.813$ results in a decrease of the odds by -18.7%, if imports increase by one unit.

²³³ See Wooldridge (2002), p. 584.

²³⁴ Indeed, if the means of the independent variables from Table 6.11 are multiplied with the probit coefficient estimates from Table 6.1, the result is 0.363 (probit). For the logit model the formula is slightly different ($e^{0.581}/[1+e^{0.581}]^2 = 0.230$) as it is not possible to take 0.581 (which would result from multiplying the means with the logit coefficient estimates). The final results are therefore 0.230 (logit) and 0.363 (probit). When dividing the probit by the logit value, the ratio 1.578 is received, which is almost exactly what Wooldridge (2002) proposes.

Finally, the LPM model yields very similar results as the probit and logit model, both in terms of coefficients and significance levels.²³⁵ The most important variable is once again $PTA_{i,t}$, as it is highly significant and has a large coefficient, similar to IC_i , while the trade volume of named countries only has a very small, negative effect on the decision whether to impose an anti-dumping measure or not.

In conclusion, the probit, logit, and LPM model show that the existence of preferential trade agreements, an industrial country as one of the countries named in the investigation, and high trade volumes between the EU-15 and named countries decrease the probability of imposing an AD measure.

Table 6.2 shows the estimation results for the same sample as Table 6.1, but with robust standard errors. The results roughly confirm the findings from Table 6.1, except for $\ln\text{imports}_{\text{named},i,t}$, which was weakly significant at the 10% level before and is now not significant. All coefficients are the same as in Table 6.1 and the standard errors are close to those from Table 6.1. Both the dummy variables IC_i and $PTA_{i,t}$ are again statistically significant, even though the p-values are slightly lower than when applying regular standard errors.²³⁶

Table 6.2: Estimations for the complete sample, all AD cases between 1995 and 2009 (using robust standard errors)

Variable	Probit model Coefficient (Standard error)	Logit model Coefficient (Standard error)	LPM (OLS) Coefficient (Standard error)
$\ln\text{imports}_{\text{row},i,t}$	0.100(0.107)	<i>0.163(0.181)</i>	0.035(0.039)
$\ln\text{imports}_{\text{named},i,t}$	-0.122(0.078)	<i>-0.207(0.145)</i>	-0.043(0.027)
$\ln\text{imports}_{\text{EUintra},i,t}$	0.031(0.118)	<i>0.059(0.201)</i>	0.011(0.043)
$\ln\text{GDP}_{\text{named},i,t}$	0.064(0.112)	<i>0.121(0.193)</i>	0.025(0.041)
$\ln\text{GDP}_{\text{cap},\text{named},i,t}$	0.087(0.166)	<i>0.136(0.290)</i>	0.027(0.061)
IC_i	-0.837(0.399)**	<i>-1.369(0.693)</i>	-0.294(0.144)**
$\text{NumNamed}_{\text{cty}_i}$	0.405(0.256)	<i>0.658(0.433)</i>	0.136(0.085)
NMS-12_i	0.065(0.339)	<i>0.143(0.606)</i>	0.029(0.124)
$PTA_{i,t}$	-0.834(0.353)**	<i>-1.400(0.627)</i>	-0.303(0.129)**
China_i	0.127(0.285)	<i>0.193(0.480)</i>	0.046(0.102)
Intercept	-2.214(2.890)	<i>-4.041(4.983)</i>	-0.309(1.074)
Number of obs.	195	195	195

Standard errors are given in parentheses. The intercept is not recorded.

²³⁵ The p-value for the F-test is 0.023, which means that the LPM model is significant.

²³⁶ The χ^2 test for the logit estimation, however, is insignificant, which is why this column is shown in italics. The p-value of the χ^2 test for the probit estimation is equal to 0.078 and therefore slightly above the 5% threshold, which is why it has to be interpreted with caution.

6.3.2 Shortened sample on AD cases between 1997 and 2004

Chapter 5 examined the question which countries benefit from or are harmed by EU anti-dumping measures (in terms of increasing or decreasing trade volumes respectively), although it is always difficult to judge which countries actually benefit and which countries lose. Benefitting is defined as having an advantage over other directly competing countries, while indirect negative effects for the entire economy of a country are in general much more difficult to assess. For completion and as an addendum to chapter 5, it is worth examining, for this smaller number of cases, which factors actually impacted the decisions within this timeframe. This reduces the sample to 103 cases, which were all decided on between the years 1997 to 2004, from the 195 cases in the complete sample. The following Table 6.3 gives the results.

Table 6.3: Estimations for AD cases between 1997 and 2004

Variable	Probit model Coefficient (Standard error)	Logit model Coefficient (Standard error)	LPM (OLS) Coefficient (Standard error)
$\ln\text{importsrow}_{i,t}$	0.119(0.144)	0.198(0.237)	0.042(0.055)
$\ln\text{importsnamed}_{i,t}$	-0.094(0.106)	-0.160(0.183)	-0.036(0.041)
$\ln\text{importsEUintra}_{i,t}$	0.045(0.175)	0.073(0.285)	0.016(0.067)
$\ln\text{GDP}_{\text{named},i,t}$	-0.054(0.149)	-0.070(0.243)	-0.015(0.056)
$\ln\text{GDPcap}_{\text{named},i,t}$	0.125(0.207)	0.199(0.342)	0.037(0.078)
IC_i	-0.635(0.527)	-1.026(0.869)	-0.206(0.191)
NumNamedcty_i	0.624(0.445)	1.010(0.752)	0.210(0.164)
NMS-12_i	0.278(0.473)	0.475(0.804)	0.086(0.177)
$\text{PTA}_{i,t}$	-0.940(0.497)	-1.517(0.830)	-0.318(0.179)
China_i	0.209(0.408)	0.342(0.676)	0.082(0.155)
Intercept	-0.540(4.334)	-1.331(7.049)	0.278(1.646)
Number of obs.	103	103	103

Standard errors are given in parentheses. The intercept is not recorded.

Unfortunately, the estimations for the probit and logit model (Chi² tests) and the LPM (F-test) are all largely not significant, which is why the values in Table 6.3 and also in Table 6.4 in the appendix (being similar to Table 6.3, but with robust standard errors for each econometric method) have to be interpreted with caution, even though the variable $\text{PTA}_{i,t}$ would otherwise be significant in all three models. Because of the overall insignificance it is not possible to make a judgement about the most influential factors on the AD decision for this sample.

6.3.3 Particularities of AD cases involving China

Trade between the European Union and China increased, particularly during the past two decades. China, ahead of the United States, is now the biggest trading partner of the EU-27 with

regard to imports in 2010. While not only trade increased, the number of anti-dumping investigations in which China is part of the investigation also increased significantly. As China was part of an AD investigation in 91 out of the 195 investigations and China is the most important trading partner in imports, this justifies a separate examination to find out which particularities influenced the investigations there. This means that when considering the complete data sample as a basis, only cases in which the dummy variable $China_i$ is equal to one are selected.

When analysing the equation for the probit model most findings are similar compared to the entire sample, however, some are different. One of the similarities is that a higher trade volume between the EU-15 and the named countries ($\ln imports_{named,i,t}$) decreases the probability of an AD duty being imposed (see Table 6.5). The same accounts for existing preferential trade agreements ($PTA_{i,t}$). Hence, China greatly benefits if another country, which has a preferential trade agreement with the EU, is part of the case.

Table 6.5: Estimations for AD cases involving China between 1995 and 2009

	Probit model	Logit model	LPM (OLS)
Variable	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)
$\ln imports_{row,i,t}$	0.096(0.150)	0.151(0.264)	0.022(0.049)
$\ln imports_{named,i,t}$	-0.372(0.140)***	-0.682(0.259)***	-0.111(0.040)***
$\ln imports_{EU,intra,i,t}$	0.208(0.169)	0.424(0.312)	0.071(0.055)
$\ln GDP_{named,i,t}$	0.751(0.447)*	1.325(0.768)*	0.246(0.147)*
$\ln GDP_{cap,named,i,t}$	-0.269(0.428)	-0.415(0.705)	-0.084(0.141)
IC_i	-0.568(0.691)	-1.097(1.173)	-0.191(0.227)
$NumNamedcty_i$	0.295(0.553)	0.511(0.944)	0.079(0.165)
$NMS-12_i$	-0.725(0.795)	-1.266(1.287)	-0.227(0.253)
$PTA_{i,t}$	-1.528(0.645)**	-2.687(1.180)**	-0.506(0.200)**
Intercept	-17.868(10.671)*	-32.252(18.622)*	-5.441(3.468)
Number of obs.	91	91	91

Standard errors are given in parentheses. The intercept is not recorded.

If $PTA_{i,t}$ is equal to one this changes the z-value by -1.528 standard deviation units in the probit model, which is remarkably high. For comparison, in the complete sample this coefficient is equal to -0.834, which means that if one considers only the cases involving China, the existence of a preferential trade agreement is much more important than before. A difference compared to the full sample is that the higher the GDP of named countries ($\ln GDP_{named,i,t}$, that is the GDP of countries accused of dumping products), the higher is the probability of imposing an AD measure, with a coefficient of 0.751. As the GDP of named countries is a proxy for market size and therefore market power, this implies that countries with large market power or size are more likely to receive punishment through AD measures.

There is another difference with regard to the dummy variable IC_i , which measures whether at least one industrial country is one of the named countries. In the complete sample (Table 6.1) this variable is significant at the 5% level and has a coefficient with a negative sign, while in the China sample (Table 6.5) it is not significant. An intuitive explanation could be that in the 91 cases concerning China, in 69 out of 91 cases (75.82%) no industrial country is named, while for the complete sample (including cases where both China is a named country and where China is not a named country) this relation is 127 out of 195 (65.13%) and therefore the ratios and of course AD cases are different from each other, which may lead to different results.

In the logit model, the results and significance levels are close to those of the probit model.²³⁷ First, the odds of levying an AD duty decrease by -49.4% if the trade volume with named countries (variable: $\ln\text{imports}_{i,t}$) increases. Second, if one of the named countries has a preferential trade agreement this lowers the odds by -93.2%. In other words, China benefits greatly if another country with a preferential trade agreement is part of the investigation. Another important result is that the presence of countries with high GDP among the named countries increases the odds almost threefold, which is remarkably high. Thus, when countries with high GDP are among the countries named, this increases the probability that an AD measure is imposed. Theoretically it would therefore be beneficial for China if it was not named with other economically large countries.

Finally, the LPM model confirms the findings of the probit model and the logit model. Thus, in all three models the influence of the variables is very similar.

Examining the China sample with robust standard errors (see Table 6.6) yields less significant results for the probit and logit model, as in both cases the χ^2 test is not significant, but coefficients are again identical and standard errors are similar.

In contrast, the LPM model confirms the results from above for the variables $\ln\text{imports}_{i,t}$ and $\text{PTA}_{i,t}$ which both decrease the probability of the imposition of an AD duty. The GDP of the named countries ($\ln\text{GDP}_{\text{named},i,t}$), however, does not influence the outcome as the variable is not significant, with a p-value of 0.144.

²³⁷ The χ^2 test of the logit model is significant and the same coefficients have similar signs. If the trade volume with named countries increases this changes the odds by $e^{(-0.682)}=0.506 \Rightarrow -49.4\%$. For $\text{PTA}_{i,t}$ the formula is: $e^{(-2.687)}=0.068$ and for $\ln\text{GDP}_{\text{named},i,t}$: $e^{(1.325)}=3.762$.

**Table 6.6: Estimations for AD cases involving China between 1995 and 2009
(using robust standard errors)**

	Probit model	Logit model	LPM (OLS)
Variable	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)
$\ln\text{importsrow}_{i,t}$	0.096(0.164)	0.151(0.309)	0.022(0.057)
$\ln\text{importsnamed}_{i,t}$	-0.372(0.156)	-0.682(0.291)	-0.111(0.041)***
$\ln\text{importsEUintra}_{i,t}$	0.208(0.210)	0.424(0.408)	0.071(0.067)
$\ln\text{GDP}_{\text{named},i,t}$	0.751(0.483)	1.325(0.848)	0.246(0.166)
$\ln\text{GDPcap}_{\text{named},i,t}$	-0.269(0.412)	-0.415(0.689)	-0.084(0.153)
IC_i	-0.568(0.713)	-1.097(1.258)	-0.191(0.249)
NumNamedcty_i	0.295(0.507)	0.511(0.904)	0.079(0.151)
NMS-12_i	-0.725(0.656)	-1.266(1.034)	-0.227(0.227)
$\text{PTA}_{i,t}$	-1.528(0.726)	-2.687(1.433)	-0.506(0.228)**
Intercept	-17.868(11.855)	-32.252(21.114)	-5.441(3.951)
Number of obs.	91	91	91

Standard errors are given in parentheses. The intercept is not recorded.

6.3.4 Are AD decisions different if trade with Central and Eastern European countries is high?

For cases during the period 2002 - 2009, data are available from the Eurostat external trade database that capture the imports of EU-15 countries from the entire twelve new member states (called NMS-12 with the relevant variable: $\ln\text{importsNMS-12}_{i,t}$). This is compared to trade with the rest of the world outside the (prospective) EU-27 countries ($\ln\text{importsrowexteu}_{i,t}$) and of course compared to imports from named countries ($\ln\text{importsnamed}_{i,t}$) and EU-15 internal trade ($\ln\text{importsEUintra}_{i,t}$). The idea of introducing the two new variables is to control whether a high trade volume with the prospective new European Union member states results in different AD decisions, perhaps in order to protect imports from (primarily) Eastern Europe compared to imports from the rest of the world. Of course it is not recommendable to introduce the two variables in the other samples, as one would lose all observations prior to 2002. While the last two variables on EU-15 and named countries' imports remain unchanged as such, the two new variables require further description. The two new variables of the dataset are only important for this chapter 6.3.4 on trade with the NMS-12:

The variable $\ln\text{importsNMS-12}_{i,t}$ describes the imports of EU-15 countries from the prospective 12 new member states (NMS-12²³⁸, which are part of the future EU-27). As the timeframe of the model in chapter 6 begins in 1995 and ends in 2009 (whereas in this section 6.3.4 the

²³⁸ NMS-12 countries: Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia, Slovenia.

timeframe is: 2002-2009), the 12 countries are not members of the EU at the beginning of the sample, but have joined for the last six or three (concerning Romania and Bulgaria) years of the sample.

The variable $\ln\text{importsexteu}_{i,t}$ describes the imports of the EU-15 countries from the rest of the world (i.e., from outside the boundaries of the (future) EU-27 countries), but of course this does not include imports from named countries, as these are captured by $\ln\text{importsnamed}_{i,t}$ in all specifications. This separate variable $\ln\text{importsexteu}_{i,t}$ is necessary as $\ln\text{importsrow}_{i,t}$ considered above would include both the variables $\ln\text{importsNMS-12}_{i,t}$ and $\ln\text{importsexteu}_{i,t}$.

The empirical model now looks slightly different with the two additional variables replacing the variable $\ln\text{importsrow}_{i,t}$:

$$\begin{aligned} \text{AD-Decision}_{i,t} = & \alpha + \beta_{\text{importsexteu}} \ln\text{importsexteu}_{i,t} + \beta_{\text{importsnamed}} \ln\text{importsnamed}_{i,t} + \\ & \beta_{\text{importsEUintra}} \ln\text{importsEUintra}_{i,t} + \beta_{\text{importsNMS-12}} \ln\text{importsNMS-12}_{i,t} + \beta_{\text{GDPnamed}} \ln\text{GDP}_{\text{named},i,t} + \\ & \beta_{\text{GDPcap,named}} \ln\text{GDPcap}_{\text{named},i,t} + \beta_{\text{IC}} \text{IC}_i + \beta_{\text{NumNamedcty}} \text{NumNamedcty}_{i,t} + \beta_{\text{NMS-12}} \text{NMS-12}_i + \\ & \beta_{\text{PTA}} \text{PTA}_{i,t} + \beta_{\text{China}} \text{China}_i + \varepsilon_{i,t} \end{aligned}$$

Even though the χ^2 tests (logit and probit model) and the F-test (LPM) are highly significant, none of the individual variables are significant, as shown in Table 6.7.

**Table 6.7: Estimations focusing on imports from NMS-12 countries,
AD cases between 2002 and 2009**

	Probit model	Logit model	LPM (OLS)
Variable	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)
$\ln\text{importsrowexteu}_{i,t}$	0.204(0.207)	0.325(0.352)	0.064(0.059)
$\ln\text{importsnamed}_{i,t}$	0.214(0.156)	0.409(0.287)	0.063(0.044)
$\ln\text{importsEUintra}_{i,t}$	-0.306(0.232)	-0.534(0.409)	-0.095(0.068)
$\ln\text{importsNMS-12}_{i,t}$	-0.057(0.066)	-0.092(0.112)	-0.015(0.017)
$\ln\text{GDP}_{\text{named},i,t}$	0.130(0.174)	0.232(0.291)	0.045(0.057)
$\ln\text{GDPcap}_{\text{named},i,t}$	-0.073(0.270)	-0.124(0.454)	-0.031(0.085)
IC_i	-0.871(0.690)	-1.511(1.163)	-0.280(0.216)
NumNamedcty_i	-0.464(0.479)	-0.776(0.827)	-0.134(0.146)
NMS-12_i	0.259(0.619)	0.333(1.132)	0.064(0.208)
$\text{PTA}_{i,t}$	-0.165(0.557)	-0.287(0.932)	-0.056(0.177)
China_i	0.671(0.479)	1.086(0.820)	0.180(0.147)
Intercept	-3.021(4.514)	-5.602(7.450)	-0.474(1.491)
Number of obs.	88	88	88

Standard errors are given in parentheses. The intercept is not recorded.

The same applies to the three econometric models with robust standard errors (see Table 6.8 in the appendix), apart from the fact that the Chi²-test p-value for the logit model is slightly above the threshold with p=0.055 and therefore has to be interpreted with some caution. It follows that it cannot be proven that the new variables $\ln\text{importsNMS-12}_{i,t}$ and $\ln\text{importsrowexteu}_{i,t}$ for the new timeframe starting in 2002 have a significant impact.

6.3.5 Does the number of EU countries or their size of GDP make a difference in AD decisions?

This final sample is very similar to the complete sample from chapter 6.3.1, but it contains two new variables called $\ln\text{GDP}_{\text{EU},i,t}$ and NumEUcty_i . Therefore, the empirical model changes slightly into the following form:

$$\begin{aligned} \text{AD-Decision}_{i,t} = & \alpha + \beta_{\text{importsrow}} \ln\text{importsrow}_{i,t} + \beta_{\text{importsnamed}} \ln\text{importsnamed}_{i,t} \\ & + \beta_{\text{importsEUintra}} \ln\text{importsEUintra}_{i,t} + \beta_{\text{GDP,EU}} \ln\text{GDP}_{\text{EU},i,t} + \beta_{\text{GDPnamed}} \ln\text{GDP}_{\text{named},i,t} \\ & + \beta_{\text{GDPcap,named}} \ln\text{GDPcap}_{\text{named},i,t} + \beta_{\text{IC}} \text{IC}_i + \beta_{\text{NumEUcty}} \text{NumEUcty}_{i,t} + \beta_{\text{NumNamedcty}} \text{NumNamedcty}_{i,t} \\ & + \beta_{\text{NMS-12}} \text{NMS-12}_i + \beta_{\text{PTA}} \text{PTA}_{i,t} + \beta_{\text{China}} \text{China}_i + \varepsilon_{i,t} \end{aligned}$$

The two new variables could not be introduced earlier, as the information which European Union countries (out of the EU-15) are concerned in an AD investigation as complainants is not available in all cases. This reduces the sample size from 195 to 153 cases, because it is, of course, neither possible to obtain the data on the number of EU countries (NumEUcty_i) nor the sum of EU GDPs ($\ln\text{GDP}_{\text{EU},i,t}$) when the name of the EU countries is missing. This is why the two variables were not included in the previous chapters and are only used in chapter 6.3.5. The sum of EU country GDPs ($\ln\text{GDP}_{\text{EU},i,t}$) is designed as an indicator of the size of market share and therefore market power of the respective EU countries, while NumEUcty_i is a binary variable to test whether it makes a difference if three or more EU countries (or only one or two countries) are part of the investigation.²³⁹

The variable $\ln\text{GDP}_{\text{EU},i,t}$ ²⁴⁰ is the natural logarithm of the constant gross domestic product (GDP) of one concerned EU country or the aggregate of several concerned EU countries which accuse the named countries of anti-dumping in case i. USD data were converted into EUR using the 2000 exchange rate (yearly average).

The variable NumEUcty_i ²⁴¹ is a binary variable that is equal to one if three or more EU-15 countries are part of the anti-dumping investigation and is equal to zero otherwise. If an EU

²³⁹ Remark: There is no variable that takes into account the weighted average of the different GDP per capita of the respective EU countries, which are concerned in the investigation, similar to $\ln\text{GDPcap}_{\text{named},i,t}$ for the named countries. This is because the GDP per capita of the EU-15 countries is very similar compared to one another and it would probably not make sense to include such a variable that has very little variation.

²⁴⁰ Sources: Bown (2009, 2010), World Bank, and Deutsche Bundesbank. The base year of GDP is 2000.

²⁴¹ Sources: Bown (2009, 2010).

country is counted for this variable, this can possibly mean that only a producer from this particular EU country lodged the complaint and not the country itself.

In the probit model, the logit model, and the LPM the same variables are significant with identical signs (see Table 6.9). Again, the results confirm that the probability of an AD duty being imposed decreases if an industrial country is one of the named countries. The same applies to preferential trade agreements, as these are even slightly more influential than the IC_i -variable with regard to the probable outcome of an AD investigation. However, the two new variables are not significant in any of the three econometric models and therefore not relevant for the further analysis.²⁴² It can be concluded that even though the number of AD investigations is reduced from 195 to 153 and two new variables were added, the overall results remain unchanged. Therefore, this sample confirms the previous findings that if at least one country named is an industrial country or has a preferential trade agreement with the European Union, this provides the countries with some protection from the imposition of AD measures.

Table 6.9: Estimations based on dataset with two additional EU variables, AD cases between 1995 and 2009

	Probit model	Logit model	LPM (OLS)
Variable	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)
$\ln \text{importsrow}_{i,t}$	0.039(0.128)	0.074(0.224)	0.010(0.040)
$\ln \text{importsnamed}_{i,t}$	0.051(0.084)	0.082(0.146)	0.014(0.026)
$\ln \text{importsEUintra}_{i,t}$	-0.074(0.151)	-0.125(0.263)	-0.018(0.046)
$\ln \text{GDP}_{\text{EU},i,t}$	0.198(0.181)	0.333(0.306)	0.052(0.055)
$\ln \text{GDP}_{\text{named},i,t}$	-0.088(0.135)	-0.149(0.227)	-0.023(0.040)
$\ln \text{GDPcap}_{\text{named},i,t}$	0.123(0.188)	0.191(0.331)	0.023(0.056)
IC_i	-1.019(0.463)**	-1.642(0.810)**	-0.269(0.135)**
NumEUcty_i	-0.366(0.356)	-0.623(0.612)	-0.097(0.103)
NumNamedcty_i	0.432(0.350)	0.709(0.596)	0.114(0.097)
NMS-12_i	0.236(0.408)	0.410(0.718)	0.051(0.117)
$\text{PTA}_{i,t}$	-1.256(0.384)***	-2.079(0.670)***	-0.377(0.115)***
China_i	0.153(0.336)	0.265(0.583)	0.056(0.100)
Intercept	-3.092(5.905)	-5.195(9.855)	-0.220(1.852)
Number of obs.	153	153	153

Standard errors are given in parentheses. The intercept is not recorded.

²⁴² For completion it was tested whether AD decisions could depend on imports from the previous year ($t-1$: ($\ln \text{importsrow}_{i,t-1} + \ln \text{importsnamed}_{i,t-1} + \ln \text{importsEUintra}_{i,t-1} + \dots$)) instead of the present year t , while all other variables were left unchanged. Because of data unavailability this reduces the sample size to 138 observations. While results are largely unchanged for IC_i and $\text{PTA}_{i,t}$, $\ln \text{importsnamed}_{i,t-1}$ instead is significant and positive and $\ln \text{importsEUintra}_{i,t}$ is significant and negative (both at the 10% level). As these results are based on slightly different observations (originally there were 153 observations), the results, however, cannot be directly compared.

As in the previous chapters, the probit, the logit model, and the LPM can also be applied with robust standard errors (see Table 6.10).

Table 6.10: Estimations based on dataset with two additional EU variables, AD cases between 1995 and 2009 (using robust standard errors)

	Probit model	Logit model	LPM (OLS)
Variable	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)
$\ln\text{importsrow}_{i,t}$	0.039(0.141)	<i>0.074(0.257)</i>	0.010(0.046)
$\ln\text{importsnamed}_{i,t}$	0.051(0.090)	<i>0.082(0.165)</i>	0.014(0.029)
$\ln\text{importsEUintra}_{i,t}$	-0.074(0.162)	<i>-0.125(0.291)</i>	-0.018(0.050)
$\ln\text{GDP}_{\text{EU},i,t}$	0.198(0.179)	<i>0.333(0.310)</i>	0.052(0.059)
$\ln\text{GDP}_{\text{named},i,t}$	-0.088(0.125)	<i>-0.149(0.217)</i>	-0.023(0.039)
$\ln\text{GDPcap}_{\text{named},i,t}$	0.123(0.198)	<i>0.191(0.367)</i>	0.023(0.061)
IC_i	-1.019(0.473)**	<i>-1.642(0.870)</i>	-0.269(0.148)*
NumEUcty_i	-0.366(0.344)	<i>-0.623(0.601)</i>	-0.097(0.099)
NumNamedcty_i	0.432(0.317)	<i>0.709(0.553)</i>	0.114(0.085)
NMS-12_i	0.236(0.426)	<i>0.410(0.790)</i>	0.051(0.120)
$\text{PTA}_{i,t}$	-1.256(0.396)***	<i>-2.079(0.724)</i>	-0.377(0.133)***
China_i	0.153(0.344)	<i>0.265(0.622)</i>	0.056(0.107)
Intercept	-3.092(5.853)	<i>-5.195(10.056)</i>	-0.220(2.041)
Number of obs.	153	<i>153</i>	153

Standard errors are given in parentheses. The intercept is not recorded.

The results confirm the findings from Table 6.9 without robust standard errors, as coefficients are identical and standard errors are very similar.²⁴³ This shows that the variables on whether an industrial country is one of the named countries or has a preferential trade agreement with the EU are important for the outcome of the anti-dumping decision and the imposition of an anti-dumping measure.

6.4 Summary

Throughout the different variations of the sample, the results show that the probability that an AD measure (for example, an ad-valorem duty) will be imposed on the named countries decreases if an industrial country is one of the countries named in the AD investigation or if one of them has a preferential trade agreement with the European Union. There are three implications of the findings. First, there seems to be a difference between the treatment of

²⁴³ The Chi² test is insignificant in the logit model, which is why the LPM yields the more important results. The p-value of the Chi² test for the probit model is equal to 0.0538 and therefore slightly above the 5% threshold, which is why it has to be interpreted with caution.

developing and industrial countries. Second, if countries with a preferential trade agreement are part of the investigation this also provides them with protection from AD measures. Third, for the complete sample, a higher trade volume between the EU-15 and the named countries decreases the probability of imposition of an AD measure.

This chapter also examines different timeframes and geographical variations. One question concerns the timeframe of chapter 5, which is for a reduced number of cases (all decided on between the years 1997 to 2004). The aim was to determine which factors influenced the AD decisions in the investigations considered in chapter 5. However, as the variables lack significance, few conclusions can be drawn from this part.

As China is part of an AD investigation in 91 out of the total 195 cases, there is a separate examination of the 91 cases in which China is part of the investigation. This separate examination confirms the findings from the complete sample that higher import trade volumes with named countries and the existence of a preferential trade agreement with one of the named countries make the imposition of AD measures less likely. It also states that the presence of countries with larger GDP among the countries named increases the likelihood of AD measures being imposed. In contrast with the findings for the complete sample, if an industrial country is also one of the named countries along with China, this does not make a difference as the variable on industrial countries is not significant.

One further section explicitly examines whether the size of the trade volumes between the EU-15 and the 12 new (at that time maybe prospective) EU member states (NMS-12) compared to EU-15 trade volumes with the rest of the world make a difference for the outcome of the decision. However, the results are largely insignificant.

Finally, in the last section, it was analysed whether the number of EU countries concerned in a case and their total GDP could make a difference in the outcome of the AD decision. The sample size is slightly reduced, because the information on which EU countries are involved is not available for every investigation. Even though both the two new variables are not significant and the estimations are only possible for a reduced number cases, this sample confirms the previous results from the complete dataset, with preferential trade agreements and industrial countries among the named countries being the two most important variables as both of them consistently lower the probability that an AD measure is imposed. This proves that even in a varied sample the previously obtained results are robust.

7 Conclusion

The aim of this study is to provide economic insights on the EU's trade policy, focusing on two empirical issues: the EU's preferential trade agreements and its anti-dumping actions. This study concludes that EU external trade policy has had an impact on trade flows and the effect has been substantial, both in terms of free trade agreements and other preferential trade agreements, as well as with regard to the use of anti-dumping actions.

Empirical research has shown that European Union free trade agreements and the customs union with Turkey increased trade with the contractual partners in the years 1994 to 2007. Different econometric techniques using a gravity model deliver the conclusion that preferential trade agreements mostly had a strongly positive effect on trade. It is also shown that the majority of EU countries benefited from the agreements. For Austria, Belgium, Finland, France, Germany, Ireland, Luxemburg, Sweden, and the United Kingdom the preferential trade agreements were beneficial. The analysis for Denmark, Italy, the Netherlands, Portugal and Spain yields results that are not significant. It follows that for the majority of EU-15 countries, that is for 9 out of 15, the preferential trade agreements clearly show a positive effect on trade. For five countries there is no clear outcome, whereas only for one country, namely Greece, the effects on trade appear detrimental. It is safe to say that EU preferential trade agreements were a success for the EU.

Another issue considered is whether the preferential trade agreements were favourable to the individual partner countries outside the EU. This analysis indeed shows a more mixed picture. Chile, Croatia, FYROM, Mexico, South Africa, and Turkey benefited from the trade agreements. For Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, and Tunisia the results are not significant, with the exception of Lebanon, where the results are partially negative.

The most important EU trade preferences for developing countries are those for the ACP countries and the GSP system. The question is whether the existing trade preferences support certain developing countries in improving their competitiveness and fostering mutual trade. On the one hand, special trade relations with the European Union of course provide the countries with privileged access to European markets. On the other hand, granting preferences to developing countries also implies some sort of protection vis-à-vis perhaps more competitive third countries. Thus, the incentive of the protected, developing countries to increase domestic competitiveness is lowered, which might not be beneficial for the overall economic development of the country. Some Asian countries seemed to fare better even without such preferential treatment. Overall, unilateral trade preferences can be judged as a very mixed blessing. As both ACP countries' preferences and the EU GSP system are undergoing a reform since 2010/2011, the situation may change and require reassessment in the decade to come. Maybe the recent conclusion of Economic Partnership Agreements (EPA) can change the trend in the future.

While the first major component of European Union trade policy concerns free trade agreements and the customs union with Turkey, the second major part is anti-dumping actions. The European Union is among the top-3 most frequent users of anti-dumping actions worldwide. When applying dynamic panel data analysis (Arellano-Bond), EU-15 countries' internal imports benefit from an imposed measure in AD investigations, while named countries and non-named countries see a decreasing trade volume. Without imposition of an AD measure, imports from named and non-named countries increase to a small extent while EU-15 internal imports decrease. When employing OLS, OLS robust, cluster analysis, and fixed effects estimations, the analyses show that imports from named countries decrease in the periods after the investigation, those of non-named countries increase, while there is almost no change for EU-15 countries. The imposition of AD measures is generally negative for imports from named countries. Even though “[u]ncertainty is a fact of life in international economic relations”²⁴⁴ the use of anti-dumping measures can severely restrict trade.

An additional section examines trade deviation to the NMS-12 countries and therefore Eastern Europe, which benefited greatly and more than other non-named countries from the imposition of AD measures, but not from AD investigations in which no AD measures were imposed. However, the results are less clear-cut with regard to significance levels. Finally, analysing the imposition of AD measures on EU imports, where China is one of the named countries, yields mixed results. In case a measure is imposed the AD investigations have a large, negative impact on imports (when employing OLS, OLS robust, and cluster analysis), while the sheer investigation as such does not have an impact on imports. This is remarkable, because imports where China is one of the named countries are affected to a much greater extent by the imposition of a measure than other countries. When conducting the analysis with Arellano-Bond the findings are different: in case a measure is imposed there is no significant effect found in the subsequent periods, whereas there is a slightly positive effect in the first period after the start of the AD investigation (irrespective of a measure being imposed). The overall picture that can be drawn from the analysis on China is therefore mixed.

Consequently, it can be empirically shown that AD investigations as such, but also the imposition of measures, strongly impact EU imports in the concerned product sections.

As anti-dumping actions do not only influence import flows, the question can be raised which factors particularly influence the outcome of EU anti-dumping decisions. Empirical analysis suggests that the most important factors are whether an industrial country is one of the countries named in the AD investigation, if one of the named countries has a preferential trade agreement with the EU-15, and if there is a high trade volume between the EU-15 and the named countries. All of these factors considerably lower the probability that an AD measure will be imposed on the named countries. Throughout the different variations of the sample it has been shown very clearly that if an industrial country is one of the countries named in the

²⁴⁴ Bergeijk (2009), p. 47.

AD investigation or if one of them has a preferential trade agreement with the European Union, this greatly decreases the probability that an AD measure will be imposed on the named countries. This implies that, firstly, the treatment experienced by developing countries appears to differ from that of emerging countries and richer industrial countries. Second, if countries with a preferential trade agreement are part of the investigation, this also provides them with protection from AD measures. Third, for the complete sample it could also be found that a higher trade volume between the EU-15 and the named countries decreases the probability of an AD measure being imposed.

One further section particularly examined if the trade volumes between the EU-15 and the 12 new EU member states (NMS-12) versus trade with the rest of the world make a difference for the outcome of the decision. This was tested for, as it could be assumed that the EU indirectly modifies AD decisions in order to protect its future members in Central and Eastern Europe. High trade volumes with Eastern Europe, however, do not influence the decision on whether or not to impose an AD measure.

As China is part of an AD investigation in 91 out of the total 195 cases, there is a separate examination of the 91 cases in which China is part of the investigation (a subsample of the full sample). This separate examination confirms the findings from the complete sample that higher import trade volumes with named countries and the existence of a preferential trade agreement with one of the named countries make the imposition of AD measures less likely. Unlike in the case of the complete sample, however, if an industrial country is also one of the named countries along with China, this does not make a difference to the likelihood of an AD measure being imposed.

It is of course difficult to predict what will drive EU trade policy in the future, but the trade policy of other big players, such as the United States and China, will be important, as will be the question whether the rise of new players in Asia changes the position of the EU, particularly with regard to the rise of regional trade agreements in Asia and the implied dynamics. The EU has continuously signed new free trade agreements, such as recently with South Korea. The creation of an Asian customs union beyond the ASEAN free trade area, or simply the strengthening of regional integration in this or another region in the world, could strongly impact the EU's external trade and trade policy.

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Appendix to chapter 5

Table 5.10: Estimations of the effect of AD actions on EU-15 imports from non-named countries (starting in 1999, unit values)

	OLS	OLS robust	Cluster analysis	<i>Fixed effects</i>
Variable	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)	<i>Coefficient (Standard error)</i>
$\ln\text{IMP}_{i,t-1}$	0.994(0.022)***	0.994(0.022)***	0.994(0.025)***	<i>0.736(0.130)***</i>
$\ln\text{IMP}_{i,t-1} -$				
$\ln\text{IMP}_{i,t-2}$	-0.029(0.079)	-0.029(0.114)	-0.029(0.109)	<i>-0.033(0.134)</i>
$\ln\text{Duty}_{i,t}$	-0.088(0.332)	-0.088(0.286)	-0.088(0.277)	<i>-0.511(0.553)</i>
NumEUcty_i	0.084(0.061)	0.084(0.058)	0.084(0.061)	
NumNamedcty_i	0.014(0.082)	0.014(0.082)	0.014(0.073)	
China_i	-0.059(0.080)	-0.059(0.061)	-0.059(0.056)	
time_1	0.193(0.133)	0.193(0.086)**	0.193(0.104)*	<i>0.236(0.134)*</i>
time_2	-0.075(0.172)	-0.075(0.196)	-0.075(0.196)	<i>-0.039(0.183)</i>
time_3	-0.020(0.164)	-0.020(0.122)	-0.020(0.104)	<i>-0.036(0.173)</i>
time_4	0.181(0.186)	0.181(0.160)	0.181(0.155)	<i>0.153(0.173)</i>
$\text{time}_1*\text{decision}_i$	-0.015(0.432)	-0.015(0.124)	-0.015(0.115)	<i>0.678(0.470)</i>
$\text{time}_2*\text{decision}_i$	0.207(0.441)	0.207(0.208)	0.207(0.196)	<i>0.958(0.481)**</i>
$\text{time}_3*\text{decision}_i$	-0.235(0.439)	-0.235(0.171)	-0.235(0.182)	<i>0.552(0.478)</i>
$\text{time}_4*\text{decision}_i$	-0.238(0.439)	-0.238(0.154)	-0.238(0.154)	<i>0.480(0.478)</i>
$\text{AVD}_{i,t}$	0.060(0.424)	0.060(0.134)	0.060(0.125)	<i>-0.589(0.461)</i>
$\text{PU}_{i,t}$	0.194(0.450)	0.194(0.176)	0.194(0.243)	<i>-0.379(0.515)</i>
$\text{SD}_{i,t}$	-0.395(0.441)	-0.395(0.248)	-0.395(0.241)	<i>-0.999(0.538)</i>
R^2	0.954	0.954	0.954	<i>0.457</i>

Standard errors are given in parentheses. The fixed effects estimator is shown in italics because of the insignificance of the F-test for individual effects. Intercept and year controls (μ_i) are not recorded.

Table 5.11: Estimations of the effect of AD actions on EU-15 imports from non-named countries (starting in 1999, unit volumes)

	OLS	OLS robust	Cluster analysis	<i>Fixed effects</i>
Variable	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)	<i>Coefficient (Standard error)</i>
lnIMP _{i,t-1}	0.967(0.020)***	0.967(0.025)***	0.967(0.025)***	<i>0.726(0.134)***</i>
lnIMP _{i,t-1} -				
lnIMP _{i,t-2}	0.009(0.081)	0.009(0.104)	0.009(0.100)	<i>0.038(0.142)</i>
lnDuty _{i,t}	0.100(0.371)	0.100(0.286)	0.100(0.275)	<i>-0.401(0.642)</i>
NumEUcty _i	0.067(0.069)	0.067(0.063)	0.067(0.065)	
NumNamedcty _i	0.042(0.093)	0.042(0.091)	0.042(0.078)	
China _i	-0.117(0.093)	-0.117(0.059)*	-0.117(0.063)*	
time ₁	0.154(0.150)	0.154(0.079)	0.154(0.093)	<i>0.190(0.157)</i>
time ₂	-0.352(0.196)*	-0.352(0.295)	-0.352(0.293)	<i>-0.331(0.214)</i>
time ₃	-0.062(0.189)	-0.062(0.136)	-0.062(0.131)	<i>-0.149(0.203)</i>
time ₄	0.160(0.212)	0.160(0.172)	0.160(0.167)	<i>0.032(0.202)</i>
time ₁ *decision _i	0.689(0.494)	0.689(0.135)***	0.689(0.155)***	<i>1.201(0.557)**</i>
time ₂ *decision _i	1.192(0.507)**	1.192(0.326)***	1.192(0.324)***	<i>1.737(0.569)***</i>
time ₃ *decision _i	0.477(0.500)	0.477(0.168)***	0.477(0.183)**	<i>1.082(0.558)*</i>
time ₄ *decision _i	0.471(0.509)	0.471(0.144)***	0.471(0.137)***	<i>1.015(0.573)*</i>
AVD _{i,t}	-0.692(0.486)	-0.692(0.130)***	-0.692(0.125)***	<i>-1.165(0.544)**</i>
PU _{i,t}	-0.459(0.514)	-0.459(0.189)**	-0.459(0.272)*	<i>-0.854(0.609)</i>
SD _{i,t}	-1.367(0.500)***	-1.367(0.330)***	-1.367(0.239)***	<i>-1.685(0.622)***</i>
R ²	0.960	0.960	0.960	<i>0.463</i>

Standard errors are given in parentheses. The fixed effects estimator is shown in italics because of the insignificance of the F-test for individual effects. Intercept and year controls (μ_i) are not recorded.

Table 5.12: Arellano-Bond estimations of the effect of AD actions on EU-15 imports from non-named countries (starting in 1999)

Sample	Unit values	Unit volumes
Variable	Coefficient (Standard error)	Coefficient (Standard error)
$\ln\text{IMP}_{i,t-1}$	0.250(0.025)***	0.327(0.043)***
$\ln\text{IMP}_{i,t-2}$	0.029(0.017)*	0.027(0.023)
$\ln\text{Duty}_{i,t}$	-0.221(0.176)	-0.166(0.207)
time_1	0.150(0.031)***	0.173(0.032)***
time_2	0.014(0.031)	-0.114(0.040)***
time_3	-0.036(0.023)	-0.112(0.029)***
time_4		
$\text{time}_1*\text{decision}_i$	0.307(0.101)***	0.873(0.045)***
$\text{time}_2*\text{decision}_i$	0.493(0.109)***	1.237(0.076)***
$\text{time}_3*\text{decision}_i$	0.341(0.100)***	1.010(0.089)***
$\text{time}_4*\text{decision}_i$	0.293(0.100)***	0.916(0.087)***
$\text{AVD}_{i,t}$	-0.301(0.088)***	-0.931(0.082)***
$\text{PU}_{i,t}$	-0.280(0.141)**	-0.859(0.104)***
$\text{SD}_{i,t}$	-0.470(0.100)***	-1.145(0.067)***
Sargan test (p)	0.341	0.459
AR(1) (p-value)	0.782	0.350
AR(2) (p-value)	0.399	0.582

Standard errors are given in parentheses. Intercept and year controls (μ_t) are not recorded.

Appendix to chapter 6

Table 6.4: Estimations for AD cases between 1997 and 2004
(using robust standard errors)

	Probit model	Logit model	LPM (OLS)
Variable	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)
$\ln \text{importsrow}_{i,t}$	0.119(0.147)	0.198(0.249)	0.042(0.058)
$\ln \text{importsnamed}_{i,t}$	-0.094(0.119)	-0.160(0.223)	-0.036(0.047)
$\ln \text{importsEUintra}_{i,t}$	0.045(0.174)	0.073(0.283)	0.016(0.067)
$\ln \text{GDP}_{\text{named},i,t}$	-0.054(0.147)	-0.070(0.245)	-0.015(0.057)
$\ln \text{GDPcap}_{\text{named},i,t}$	0.125(0.209)	0.199(0.348)	0.037(0.079)
IC_i	-0.635(0.509)	-1.026(0.846)	-0.206(0.181)
NumNamedcty_i	0.624(0.461)	1.010(0.803)	0.210(0.167)
NMS-12_i	0.278(0.502)	0.475(0.899)	0.086(0.187)
$\text{PTA}_{i,t}$	-0.940(0.482)	-1.517(0.815)	-0.318(0.173)
China_i	0.209(0.423)	0.342(0.714)	0.082(0.162)
Intercept	-0.540(4.284)	-1.331(7.066)	0.278(1.662)
Number of obs.	103	103	103

Standard errors are given in parentheses. The intercept is not recorded.

Table 6.8: Estimations focusing on imports from NMS-12 countries,
AD cases between 2002 and 2009 (using robust standard errors)

	Probit model	Logit model	LPM (OLS)
Variable	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)
$\ln \text{importsrowexteu}_{i,t}$	0.204(0.173)	0.325(0.299)	0.064(0.050)
$\ln \text{importsnamed}_{i,t}$	0.214(0.158)	0.409(0.315)	0.063(0.042)
$\ln \text{importsEUintra}_{i,t}$	-0.306(0.225)	-0.534(0.414)	-0.095(0.066)
$\ln \text{importsNMS-12}_{i,t}$	-0.057(0.051)	-0.092(0.088)	-0.015(0.013)
$\ln \text{GDP}_{\text{named},i,t}$	0.130(0.175)	0.232(0.293)	0.045(0.064)
$\ln \text{GDPcap}_{\text{named},i,t}$	-0.073(0.259)	-0.124(0.444)	-0.031(0.091)
IC_i	-0.871(0.650)	-1.511(1.129)	-0.280(0.222)
NumNamedcty_i	-0.464(0.472)	-0.776(0.821)	-0.134(0.151)
NMS-12_i	0.259(0.750)	0.333(1.532)	0.064(0.285)
$\text{PTA}_{i,t}$	-0.165(0.528)	-0.287(0.909)	-0.056(0.183)
China_i	0.671(0.463)	1.086(0.798)	0.180(0.156)
Intercept	-3.021(4.522)	-5.602(7.481)	0.474(1.714)
Number of obs.	88	88	88

Standard errors are given in parentheses. The intercept is not recorded.

Table 6.11: Overview table on the data of chapter 6

Variable	Observations	Mean	Standard Deviation	Min	Max
lnimportsEUintra _{i,t}	195	17.141	2.635	10.467	22.071
lnimportsNMS-12 _{i,t}	88	13.605	4.179	0	19.878
lnimportrowexteu _{i,t}	88	15.916	2.978	7.765	20.740
lnimportrow _{i,t}	195	16.217	2.724	7.765	21.202
lnimportsnamed _{i,t}	195	15.250	2.868	6.465	21.075
lnGDP _{named,i,t}	195	27.747	1.269	23.070	30.420
lnGDPcap _{named,i,t}	195	8.108	1.251	6.080	10.690
IC _i	195	0.349	0.478	0	1
lnGDP _{EU,i,t}	153	28.602	0.909	25.940	29.720
NumEUcty _i	153	0.634	0.483	0	1
NumNamedcty _i	195	0.313	0.465	0	1
NMS-12 _i	195	0.149	0.357	0	1
PTA _{i,t}	195	0.123	0.329	0	1
China _i	195	0.467	0.500	0	1
AD-Decision _{i,t} (y-variable)	195	0.631	0.484	0	1