



ISTITUTO DI STUDI E ANALISI ECONOMICA

# **The “deeper” and the “wider” EU strategies of trade integration**

An empirical evaluation of EU Common Commercial Policy effects

by

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## **ABSTRACT**

Since the post war period, the EU Common Commercial Policy (CCP) has moved in two directions mainly through Preferential Trade agreements (PTAs): a “deeper” (internal) trade integration process intended to reinforce trade relations among European countries (i.e. Custom Union, Single Market, European Monetary Union, Enlargement Process), and a “wider” (external) integration process intended to reinforce trade relations with third countries (i.e. bilateral and multilateral preferential trade agreements).

Surprisingly, there are very few empirical studies in the literature which specifically quantify the effects of “all” EU PTAs on the European countries’ trade flows. This paper seeks to fill this gap by conducting an empirical investigation on whether and how the CCP has had a significant impact on European countries’ imports. It adopts an extended version of the gravity model. In line with more recent studies, it also controls for heterogeneity and bilateral trends, and includes a set of variables to proxy for the “multilateral resistance index”.

According to our results, the EU “free trade area” has been a successful experiment in trade liberalisation. However, the positive and significant coefficient of PTAs signed by EU with third countries may somehow have limited the occurrence of trade diversion effects, which in our estimates are indeed very minor owing to the elimination of EU internal tariffs.

Keywords: trade flows, regional integration, gravity model, panel data.

JEL Classification: F13, F15; C13, C23.

## **NON-TECHNICAL SUMMARY**

The past decades have been characterised by progressive enlargement and regional integration in Europe and in the rest of the world. To be noted is that the EU, the world's largest single market, is the first exporting and the second importing integrated area in the world.

EU trade policy since the post war period has moved in two directions. On the one hand, it has sought to achieve "deeper" integration within the European Region through the creation of the Single Market (and the Monetary Union) . On the other hand, it has sought to reinforce trade relations with third countries ("wider" integration) by means of bilateral and multilateral preferential trade agreements (PTAs).

It should be stressed that the presence of PTAs may also have had the effect of reducing the occurrence of trade diversion owing to European trade integration. Therefore, by means of bilateral and multilateral agreements with the European Union, outside producers may have maintained trade opportunities in the EU market even after the reduction and elimination of EU internal tariffs.

For each European country, EU membership must be considered a competitive advantage in regard to commercial negotiations. According to art. 113 of the EC Treaty of Rome, all trade agreements with one or more countries or international organizations are negotiated by the Commission representing all EU Members and having, in this way, much greater "bargaining" power than an individual country.

The aim of this paper is to quantify the effect on the EU members' import flows of "deeper" and "wider" trade integration policies.

Our results confirm that the EU "free trade area" has been a successful experiment in trade liberalisation. On average, countries joining the EU internal market have more than doubled their imports. The size of this effect can be explained by the importance of the intra-area trade share for each European country: geographical, historical and social reasons are the main factors behind these trade relationships.

It should be stressed that the Common Commercial Policy has also been successful in its "external" dimension. In fact, the "deeper" process has not prevented continuing negotiations on PTAs with a number of external partners.

# LE STRATEGIE “DEEPER” E “WIDER” DI INTEGRAZIONE COMMERCIALE DELLA UE

Una valutazione empirica degli effetti della politica commerciale comune

## SINTESI

A partire dal dopoguerra, la politica commerciale comune europea ha intrapreso due direzioni. Attraverso accordi commerciali preferenziali, ha perseguito un'integrazione “*deeper*”, avente lo scopo di rafforzare i legami commerciali all'interno dell'Unione e una “*wider*” volta a creare relazioni con paesi terzi.

Sorprendentemente, in letteratura ci sono molti pochi lavori empirici che quantifichino specificatamente gli effetti sul commercio UE del complesso degli accordi preferenziali firmati dall'UE sui propri flussi commerciali. Questo lavoro cerca di colmare questa lacuna, valutando empiricamente se e con quale estensione la politica commerciale comune abbia avuto un impatto sui flussi di importazione degli Stati Membri.

Le stime sono effettuate su una versione estesa di modello gravitazionale; inoltre, in linea con i più recenti risultati econometrici sull'argomento, vengono inclusi in stima controlli per l'eterogeneità e per l'esistenza di *trend* bilaterali.

I risultati delle stime evidenziano come che il Mercato Unico europeo sia stato un “esperimento” di liberalizzazione commerciale di grande successo: gli Stati membri negli ultimi quarant'anni hanno più che raddoppiato le proprie importazioni intra area. Seppur di entità molto inferiore, anche il coefficiente della variabile rappresentativa degli accordi preferenziali con paesi terzi risulta positivo e significativo. Questo risultato suggerisce che avere accoppiato a una strategia di integrazione commerciale *deeper* una politica *wider* può aver limitato gli effetti di diversione commerciale dagli Stati esterni all'Unione. Quest'ultimo effetto, risulta peraltro di entità limitata nelle nostre stime.

Parole chiave: flussi commerciali, integrazione regionale, modelli gravitazionali, panel data

Classificazione JEL: F13, F15; C13, C23.



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*“...The common commercial policy shall be based on uniform principles, particularly in regard to changes in tariff rates, the conclusion of tariff and trade agreements, the achievement of uniformity in measures of liberalisation, export policy and measures to protect trade such as those to be taken in case of dumping or subsidies...”*

*(Art 113 of the EC Treaty of Rome 1957)*

## 1 INTRODUCTION <sup>1</sup>

The past decades has been characterised by progressive enlargement and regional integration in Europe and in the rest of the world. To be noted is that the EU, the world's largest single market, is the first exporting and the second importing integrated area in the world.

EU trade policy since the post war period has moved in two directions. On the one hand, it has sought to achieve “deeper” integration within the European Region through the creation of the Single Market (and then the Monetary Union). On the other hand, it has sought to reinforce trade relations with third countries (“wider” integration) by means of bilateral and multilateral preferential trade agreements (PTAs).

It should be stressed that the presence of PTAs may also have had the effect of reducing the occurrence of trade diversion owing to European trade integration. Therefore, by means of bilateral and multilateral agreements with the European Union, outside producers may have maintained trade opportunities in the EU market even after the reduction and elimination of EU internal tariffs.

For each European country, EU membership must be considered a competitive advantage in regard to commercial negotiations. According to art. 113 of the EC Treaty of Rome, all trade agreements with one or more countries or international organizations are negotiated by the Commission representing all

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EU Members<sup>2</sup> and having, in this way, much greater bargaining power than an individual country.

The aim of this paper is to quantify the effect on the EU members' import flows of "deeper" and "wider" trade integration policies. The paper is organised as follows: the first and the second sections describe the institutional framework, with a focus on PTAs, and a survey of the literature. The third and the fourth sections present the empirical strategy, the equations and the estimation results. Conclusions follow.

## **2 THE TRADE POLICY INSTRUMENTS: PREFERENTIAL TRADE AGREEMENTS (PTAs)**

Regional integration has been the most important feature of European economic development for several decades. Starting with the Coal and Steel Union and the Treaty of Rome in the 1950s, the integration process has gradually extended to include new member countries and new policy areas.

In this context, one of the main objectives of the Treaty of Rome was to create a customs union among Member States in which there would be no barriers to trade and common external tariff would be applied to imports from third countries.

Successive enlargements and the consolidation of the Single Market have gradually strengthened the Community/Union's position as a major player in trade negotiations internationally, both in bilateral negotiations with third countries and multilateral negotiations within the GATT/WTO<sup>3</sup>. Since the post war period the EC/EU has therefore progressively built up a solid network of trade relations worldwide.

It is worth noting that the scope of the CCP, as defined by Article 133, has been interpreted very broadly by the Court of Justice. Nevertheless, it does not cover international negotiations and agreements relating to agriculture, services

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<sup>2</sup> The EU has a common trade policy ("Common Commercial Policy" CCP); in other words, where trade, including WTO matters, are concerned, the EU acts as a single actor, with the European Commission negotiating trade agreements and representing European interests on behalf of the Union's 25 Member States.

<sup>3</sup> Founded on 1 January 1995 by the Marrakesh agreements resulting from the Uruguay Round negotiations, the World Trade Organisation (WTO) incorporates within one structure trade negotiations on goods (GATT), services (GATS) and intellectual property (TRIPS).

and intellectual property, areas currently under discussion within the WTO<sup>4</sup> and which caused the still recent failures of the Doha Agenda.

In the past decades a broad range of instruments have been developed within the CCP: the common external tariff; anti-dumping, anti-subsidy policy, regulations on trade barriers, protective measures, PTAs and multilateral negotiations. The purpose of these instruments is to eliminate obstacles to trade on international markets, so that trade agreements can be concluded which give partner countries special treatment. It should be noted that these preferential treatments are exceptions to the most-favoured nation clause<sup>5</sup> which has been authorised by the WTO.

From the late 1950s to the mid-1990s, the European trade integration process mainly involved the abolition of internal tariffs, and the EU PTAs were oriented, with few exceptions<sup>6</sup>, towards the completion and widening of the Single European Market (SEM).

The aim of the SEM was to eliminate the tariff and non-tariff barriers that had been created over the preceding decades and that prevented the completion of a truly integrated internal market. The ultimate objective was to achieve the four goals set out in the Treaty of Rome: free movement of goods, labour, capital and services.

The 1990s saw a significant extension of EU regionalism, and in that period the EU was among the major subscribers of PTAs. The phenomenon spread quickly to other countries and mostly to the US. At present, however the European network of PTAs is still the broadest in the world. Recently it has also been increasingly designed to cover more than formal trade policies (see Tab 1 and 2 in the Appendix).

Since 1995, the CCP has been mainly centred on a process of "wider" integration, the purpose being to get new strategic markets especially in emerging countries. In particular, in 1996, the EU introduced a "Market Access

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<sup>4</sup> The Council can nevertheless extend the scope of Article 133 to include these areas by unanimous agreement following consultation of the European Parliament.

<sup>5</sup> A most favoured nation clause (MFN) is a clause in a trade agreement between two nations providing that each will extend to the other any trading privileges it extends to third nations.

<sup>6</sup> "The first EU PTAs were established in connection with the Treaty of Rome in 1957, and involved "countries and territories" associated to the member States (colonies in Frenchspeaking Africa that were granted preferential access to the EU market). The Yaoundé Conventions (1963 and 1969) extended these preferences to some 20 newly independent African states. After the accession of the UK, the agreement was expanded to cover Commonwealth countries in the ACP (Africa, Caribbean, and Pacific) region. This agreement, signed in 1975 and known as Lomé I, provided development aid, non-reciprocal preferences, and a system to stabilize fluctuating export earnings to 46 ACP countries. During the following 20 years, the Lomé convention was extended four times, with membership increasing to 70 ACP countries" (Kokko 2005).

Strategy" policy aimed at achieving better access to third-country markets through a more focused, systematic and coordinated use of available trade instruments.

This second wave of PTAs signed by the EU differs from the previous one in terms of geographical destination, degree of development of the partners, and the thematic areas of the agreements. The "new" PTAs are not restricted only to the abolition and reduction of tariffs; they also include more sophisticated forms of commercial integration.

This has also been due to the fact that new kinds of non-tariff barriers to trade have emerged during the past decades. National and regional product standards, government procurement practices favouring national or regional producers, rules of origin<sup>7</sup> may also limit the possibility for outsiders to take advantage of trade preferences.

In this context, preferential trade agreements have been signed with Turkey (customs union), the Western Balkans (stabilization and association agreements, with extensive free trade) and Mediterranean countries (free-trade area to be completed 2010).

### **3 A SURVEY OF THE LITERATURE**

The literature on FTAs has been mainly centred on the theoretical implications of the Vinerian concepts of trade creation and trade diversion, and on empirical measurement - mainly by means of gravity equations - of the same. Surprisingly, we could not find empirical studies which specifically quantify the effects of "all" EU PTAs on EU countries' trade flows, which is the subject of this paper. However, there are several studies which analyse the effects of EU FTAs on specific regions or countries<sup>8</sup>.

One of the earliest of these studies is by Aitken (1973), who used a gravity model to analyze bilateral trade flows for both the EC and EFTA. He showed that both the EC and EFTA resulted in gross trade creation, the effect being much larger for the EC than for EFTA. Bayoumi and Eichengreen (1995) report that the EC and the EFTA were trade creating among its members. They show that trade between the EC and EFTA fell by a cumulated 17% between 1959

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<sup>7</sup> The rules of origins specify what share of a product's value added must originate in the exporting country in order to qualify for preferential treatment.

<sup>8</sup> For a complete survey see Kokko et al. (2005).

and 1964, attributing this decline to the formation of the EC. They also estimate that trade between the EC and the rest of the world was 1.7% per annum lower than predicted by the gravity model, which suggests that the EC was trade diverting with respect to the rest of the world.

**Tab. 1 EU PTAs with Central and Eastern Countries**

Authors	Empirical Strategy and Main findings
Laaser and Schrader (2002)	Gravity model estimates suggest in the case of Estonia, Latvia and Lithuania that regional integration is more intense than normally observed. According to the authors the role of distance for the Baltic countries is more important in shaping regional trade pattern than the EU FTAs.
Damijan and Masten (2002)	They explore the time-dependent efficiency of FTAs in a panel framework using static and dynamic model specifications. Using an illustrative case of rapid expansion of Slovenian imports from other CEECs belonging to CEFTA in the period 1993-98, the paper demonstrates that tariff reductions become effective in the second to third year after enforcement of the FTA.
Paas (2003)	Estimates from a gravity model and bilateral trade data support the view that there are statistically significant spatial biases caused by trade relationships among the Baltic countries, the border countries and the EU member candidate countries. East-West trade relationships are still rather weakly developed and there is a statistically significant difference in international trade patterns between the two groups: Bilateral trade relations between the EU member and the CEECs are still less developed than trade relations among the former EU members, in spite of FTAs.
Adam, Kosma and McHugh (2003)	Estimates from a gravity model and bilateral trade data support the view that both CEFTA and BFTA helped expand regional trade and limit the emergence of a “hub-and-spoke” relationship between CEECs and the EU. In the regression all the FTAs variables are positive and statistically significant. The authors conclude that all the agreements were trade creators for their members. The BFTA was more effective than the CEFTA and interestingly, the parameter estimate for EAs is smaller than that for either CEFTA and BFTA.
De Benedictis, De Santis, Vicarelli (2005)	This paper analyses bilateral trade flows between eight CEECs and EU-23. The authors estimate a gravity equation using a system GMM dynamic panel data approach. Their results support the assumption that gravity forces and “persistence effects” matter. With respect to the effect of FTAs, evidence is found that FTAs CEECs matter: There is evidence that the presence of intra-periphery FTAs helped expand intra-periphery trade and limited the emergence of a “hub-and-spoke” relationship between CEECs and EU.

More recently, the trade effect of previous enlargements of the EU has been analysed in a gravity setting by, among others, Carrère (2002), who found that the entry of Spain and Portugal into the EU caused a significant trade diversion with respect to extra-EU countries. Soloaga and Winters (2001) also found evidence of trade diversion when they compared EU trade in the period 1980–1982 with 1995–1996. Egger and Pfaffermayr (2002) conclude that intra-

EU15 trade increased significantly as a result of the 1995 enlargement (they do not analyse extra-EU trade) and that intra-core (EU founding countries) trade decreased relatively as a result of Greece and later Portugal and Spain joining the EU. Egger and Pfaffermayr (2002) came to the conclusion that previous enlargements of the EU caused Core-Periphery trade and Intra-Periphery trade to grow faster than Intra-Core trade<sup>9</sup>.

Special attention has been paid to estimation of potential trade flows among EFTA, EU, CEECs and the Baltic countries<sup>10</sup> (see Tab.1). Most of this literature, by applying different econometric techniques to gravity models, finds that FTAs signed to prepare transition countries for accession to EU have promoted substantial growth in EU-CEECs trade flows (i.e. regional dummies have positive and significant coefficients). Therefore, most adjustment on trade flows has already occurred and the further effects of the completion of EU enlargement are expected to be modest.

**Tab. 2 EU PTAs with not European Countries**

Authors	Empirical Strategy and Main findings
Martinez - Zarzoso, et al (2003)	The gravity model is tested for 20 countries, members of Mercosur plus Chile and the EU members. A panel data analysis is conducted to disentangle the time invariant country-specific effects. A number of variables, namely, infrastructure, income differences and exchange rates added to the standard gravity equation, are found to be important determinants of bilateral trade flows.
Montanari (2005)	This paper evaluates the potential for growth in trade between the EU and the Western Balkans. Application of a gravity model shows that EU trade with the Western Balkans has considerable room for growth in both imports and exports; by contrast, EU trade with two Balkan countries, Bulgaria and Romania, is close to, or in some cases exceeds, the values predicted by the model.
Peridy (2005)	Using recent theoretical developments in gravity models, this paper derives an estimable equation. This equation is then used to investigate the export potential of the 'new neighbors' (i.e. Russia, Ukraine, Belarus, Moldova, Southern Mediterranean and Caucasus countries) to the EU market. The results show that the NNCs' export potential is generally significant, especially for the new Eastern neighbors. However, it seems that this potential is limited for Mediterranean countries, because they have already enjoyed preferential market access with regard to the EU. An extension of the analysis to Middle-East and Gulf countries also highlights significant trade potentials with the EU.

As for the effects of EU PTAs with other countries/regions a selection of some recent papers is presented in table 2.

<sup>9</sup> On this issue see also De Santis (2004).

<sup>10</sup> For a survey see e.g. Brenton and Manzocchi (2002).

## 4 EMPIRICAL STRATEGY, EQUATION AND DATASET

The aim of our empirical analysis is to estimate whether and how PTAs signed by the EU Commission have exerted a significant impact on EU15 trade. In particular, we examine the effects on imports of the EU trade strategy of “wider” integration compared to the effects of the strategy of “deeper” integration.

The dependent variables in the estimates are the EU15 bilateral imports flows. The dataset is partly taken from Subramanian and Wei (2003). The equation was estimated for the UE15 countries as importing countries and 174 countries as trading partners; the time span is 1960-2000 with one observation every 5 years. The dataset contains about 15.000 observations.

We adopt an extended version of the gravity model. The gravity model has been widely used in studies on integration processes in order to explore the main changes in geographic trade patterns and to analyse the effects of regional PTAs and currency unions on trade flows. In line with more recent works, we also control for heterogeneity and include a set of variables to proxy for “multilateral resistance index” (Anderson and Van Wincoop (2003)). Indeed, we apply controls for bilateral time trend, a very recent finding in the empirical gravity model literature.

We introduce four sets of variables into the gravity equation: i) standard gravity variables, ii) controls for heterogeneity, iii) dummy variables for different tariff regimes, linked to the presence of WTO membership or free trade area, iv) dummy variable to test the effects of PTAs with third countries on EU15 bilateral import flows.

- i) Standard gravity variables. Bilateral distance, as a proxy of transport costs, and the sum of the importer’s and exporter’s GDP as proxies of the “mass”. We add to this standard specification a list of variables to control for various bilateral features (i.e. land area of importer and exporter, dummies for common language and colonial links, shared borders and currency, a dummy for landlocked and island countries ).
- ii) Controls for heterogeneity and bias. Following Baltagi, Egger and Pfaffermayr (2003) we introduce fixed effects for importing and exporting countries. Differently from these authors, we do not control for country-pair effects (i.e. the interaction effect between the exporting and importing country picking up unobserved characteristics of country-pairs) because this kind of variable would include the impact of bilateral trade agreements, which we want to control with specific dummies. Controlling

for exporter and importer effects, we are able to proxy the multilateral “trade resistance index” (see Anderson and van Wincoop (2003)) to obtain a specification of a gravity equation that can be interpreted as a reduced form of a model of trade with micro foundations.

Again, with respect to Baltagi et al. (2003), we do not introduce interaction terms between exporting and importing countries and time (*it* and *jt*) . Following Bun and Klaassen (2006), we instead introduce a set of country-pair specific time trends, the reason being that trade flows tend to grow over time. These authors show that country-pair specific time trends can be relevant in panel gravity model applications to reduce bias in dummies coefficient estimates.

iii) Tariff regimes. We want to control for all the tariff regimes applied to extra-EU partner countries which did not have bilateral agreements with EU but enjoyed some preferential treatment. Furthermore, in our dataset, EU15 countries are also partner countries: we thus control for the “internal market factor” in order to “isolate” the effect on imports of external trade agreements.

Following Subramanian and Wei (2003), our specification of WTO and EU internal market relies on the fact that they involve different degrees of liberalisation; for this reason, we build our dummies in a mutually exclusively way, in order to isolate the impact of each one of them on imports. Therefore, the WTO dummy is coded to exclude country pair belonging to the EU market.

iv) External trade agreements dummy. We include in our dummies all the trade agreements signed by EU with third countries since the 1960s.

The empirical strategy is based on Hausman-Taylor’s (1981) estimator. This framework provides consistent and unbiased parameter estimates when: i) countries face some additional unobserved heterogeneity; ii) some of the explanatory variables are correlated with the error term. Indeed, in contrast with the fixed effect approach, it allows the estimation of coefficients of time-invariant regressors, like bilateral distance, that are part of the model (Egger (2002)).

The estimated equation form is the following:

$$\ln IMP_{ijt} = b1(\ln SumGDP_{ijt}) + b2 \ln Dist_{ij} + b3 \ln Simil_{ijt} + b4 \ln Fact_{ijt} + b5 Z_{ij} + b6 \alpha_j + b7 Bi + b8 \tau_{ij} + b9 duDeeper_{ijt} + b10 duWider_{ijt} + b11 duXWTO_{ijt}$$



where:

- i)  $\ln$  is the natural logarithm,  $i$  is the exporting country,  $j$  is the importing country and  $t$  is the year;
- ii)  $Imp_{ijt}$  = is imports in volume from country  $i$  to country  $j$ ;
- iii)  $SumGDP_{ijt}$  = is the sum of the gross domestic product of the exporting and importing countries, a proxy of the “mass”, i.e. the size of the countries involved in bilateral trade;
- iv)  $\ln Dist_{ijt}$  is the bilateral distance between capital cities;
- v)  $\ln Siml_{ijt}$  is the similarity index of the two trading partners’ GDP as a measure of relative country size; it is built as:

$$\ln \left[ 1 - \left( \frac{GDP_{it}}{GDP_{it} + GDP_{jt}} \right)^2 - \left( \frac{GDP_{jt}}{GDP_{it} + GDP_{jt}} \right)^2 \right]$$

- vi)  $\ln Fact_{ijt}$ : it is the absolute difference in relative factor endowments between country-pairs; it is built as:

$$\left| \ln \left( \frac{GDP_{it}}{POP_{it}} \right) - \ln \left( \frac{GDP_{jt}}{POP_{jt}} \right) \right|$$

where POP is the population.

- vii)  $Z$  is a vector of time-invariant dummy variables capturing bilateral characteristics like common language and colonial links, shared borders and currency, landlocked and island countries;
- viii)  $\alpha_j$  is a set of exporting country dummies: they assume value 1 if export flows come from exporter country  $i$  to each one of the importing countries  $j$ , 0 otherwise;
- ix)  $\beta_j$  is a set of importing country dummies: they assume value 1 if export flows come from each one of the exporter countries  $i$  to the importing country  $j$ , 0 otherwise;
- x)  $\tau_{ij}$  = bilateral trend variables.
- xi)  $duDeeper_{ijt}$  is a dummy that proxies the EU internal market integration process. Because EU membership has been a dynamic process, with European countries joining the EU in different years, this dummy assumes value 1 when both EU countries were members .

- xii)  $duWider_{ijt}$  It includes all the trade agreements signed by EU with extra-EU countries;
- xiii)  $duXWTO_{ijt}$  is a *dummy* that assumes value 1 if the importing country  $j$  liberalizes its imports under the GATT/WTO and at the same time the exporting country  $i$  is a GATT/WTO member, where  $i$  and  $j$  are not in a free trade area or custom union and where  $j$  does not grant GSP preferences to  $i$  at the year  $t$ .

## 5 ESTIMATES RESULTS

The estimates results are summarised in Table 3. As regards “gravity standard” variables, a positive export relationship with the mass and a negative one with distance is confirmed, in line with the empirical literature’s findings. The control variables are statistically significant and with the expected signs.

**Tab. 3 The impact of trade agreements on EU15 import flows (1960-2000)**

	Coeff.	P> z
$\text{Ln } SumGDP_{ijt}$	1.79	0.00
$\text{Ln}(DIST_{ij})$	-1.26	0.00
$\text{Ln}Simil_{ijt}$	0.22	0.00
$\text{Ln}Fact_{ijt}$	-0.55	0.00
$DuDeeper_{ijt}$	1.18	0.00
$DuWider_{ijt}$	0.57	0.00
$DuXWTO$	0.18	0.00
$\alpha_j$	yes	
$\beta_j$	yes	
$\tau_{ij}$	yes	
$Z$	yes	

As in Baltagi, Egger and Pfaffermeier (2003), the signs and statistical significance of  $\text{Ln}Simil_{ijt}$  and  $\text{Ln}Fact_{ijt}$  seem to support the Linder hypothesis: bilateral trade is higher the more similar two countries are in terms of factor endowments and country size.

As we expected, the EU internal market process had a huge impact on imports flows. Countries belonging to EU imported on average 225% more among themselves with respect to outsiders. This result confirms the success of this unique “experiment” in trade liberalisation. However, the EU PTAs policy towards third countries also exerted an important impact on EU imports flows (about 77% on average)<sup>11</sup>.

As in Subramanian and Wei (2003), our results show that the WTO membership dummy is positive and statistically significant. EU countries imported 20% more from countries that shared the international rules on trade under the GATT/WTO than from other countries.

**Tab. 4 The impact of trade agreements on EU15 import flows: 1960-1980 and 1985-2000**

	1960-80		1985-2000	
	Coeff.	P> z	Coeff.	P> z
$\ln \text{SumGDP}_{ijt}$	1.00	0.00	1.08	0.00
$\ln(\text{DIST}_{ij})$	-0.80	0.000	-1.89	-0.00
$\text{DuDeeper}_{ijt}$	0.65	0.00	0.24	0.01
$\text{DuWider}_{ijt}$	0.33	0.00	0.15	0.03
$\alpha_t$	yes		yes	
$\beta_j$	yes		yes	
$z$	yes		yes	

To deepen our analysis, we perform the estimate for two sub-periods: 1960-1980 and 1985-2000. The results are summarised in Table 4. We find that the magnitude of the coefficient of the dummy “wider” in the 1985-2000 period was lower than that in 1960-80 estimate. This result is probably due to the fact that in the first sub-period the extra-EU PTAs were signed with larger and richer countries (EFTA) than in the second sub-period. It is also to be noted that the coefficient of the Deeper dummy was considerably higher in 1950-80 than it was after 1985. In the first 30 years, the impact on imports of trade liberalisation was more marked than during the Single Market Programme’s final implementation or the EMU launch.

In order to assess the robustness of our results we performed an alternative specification. We test whether the effects of “mass” and distance were influenced by EU trade policies. We include in our regression interaction

<sup>11</sup> Since the coefficient of the dummy Wider is 0.57, the variation of imports induced by signing these trade agreement (Wider=1) with respect to the case of not signing (wider=0), is given, other things being equal, by  $[(\exp 0.57 \cdot 1 / \exp 0.57 \cdot 0) - 1] \cdot 100 = 77\%$

terms between our trade dummies and the two gravity variables. With inclusion of these terms the estimated coefficients indicate the difference in effects of the regressors (Mass and distance) on the dependent variable (EU imports) between countries that had signed PTAs or had not.

We find a positive and significant coefficient of interaction terms between the mass and “wider” and “deeper” dummies. This shows that, for countries that signed trade agreements, the effect of the “mass” on bilateral trade was higher (by the amount of the estimated coefficient).

**Tab. 5 Regression with interaction effects**

	Coeff.	P> z
DuXWTO		
DuDeeper*ln(DIST)	0.11	0.345
DuDeeper*Ln SumGDP	0.15	0.04
DuWider* ln(DIST)	-0.27	0.02
DuWider* Ln SumGDP	0.25	0.00

As for the impact of distance, we find that in the case of interaction terms between the “wider” dummy and distance, the sign of coefficient is negative and significant, showing a greater impact on trade by distance for non-EU countries. In other words, signing a preferential trade agreement with not EU countries boosts trade and reduces the negative impact of transport costs.

**Tab. 6 Estimate of trade diversion effect**

	Coeff.	P> z
Ln SumGDP <sub>ijt</sub>	1.83	0.00
Ln(DIST <sub>ij</sub> )	-1.18	0.00
LnSimil <sub>ijt</sub>	0.62	0.00
LnFact <sub>ijt</sub>	-0.58	0.00
DuDeeper <sub>ijt</sub>	1.16	0.00
Du TD	-0.08	0.00
DuWider <sub>ijt</sub>	0.58	0.00
DuXWTO	0.22	0.00
$\alpha_j$	yes	
$\beta_j$	yes	
$\tau_{ij}$	yes	
Z	yes	

However, the interaction term between the “deeper” dummy and distance is not statistically significant. This result can be explained by the fact that trade costs among EU countries are not large because of geographical proximity; indeed, trade integration reduced these costs over time.

We also investigated whether the progressive deepening of bilateral trade relations among EU countries generated trade diversion effects with respect to non-PTAs countries. Following Micco et al. (2003), we built a dummy (TD) that assumes value 1 when only one of the EU countries involved in bilateral trade signed preferential trade agreements, 0 otherwise.

Introducing this dummy into our regression with the “deeper” dummy, we are able to investigate whether the deepening of EU trade integration had led to a supply switching away from non EU countries.

Table 6 reports our results. Our dummy TD is negative and statistically significant. The deepening of EU trade relationship decreased bilateral trade with other countries by around 8.3%. The magnitude (and the sign) of this impact seems reasonable, considering the importance and the depth of the EU trade integration process, the long time span, and the number of trade partners considered<sup>12</sup>.

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<sup>12</sup> The effect exerted on bilateral trade flows by the “deeper” dummy is lower in comparison with our previous estimate. In fact, the “deeper” dummy effect compares the trade effect of the EU between intra-EU flows (value 1 in the dummy) and all other trade flows (value 0 in the dummy). If the latter has been reduced by a trade diversion effect and we do not take account of this (as in Table 3), the standard of comparison will be higher, and also higher will be the estimated effect of the “deeper” dummy itself.

## 6 CONCLUSIONS

Estimates show that trade within the EU expanded in the period 1960-2000 relative to overall trade by European countries with the rest of the world. This phenomenon seems to be due to a highly effective strategy of “deeper” integration within the European Region conducted by the European Commission. It seems that, since the 1960s, the EU has been moving towards a European Free trade area embracing Western and Eastern Europe, the intention being also to include Mediterranean countries and sub-Saharan Africa in the near future.

Our results confirm that the EU “free trade area” has been a successful experiment in trade liberalisation. On average, countries joining the EU internal market have more than doubled their imports. The size of this effect can be explained by the importance of the intra-area trade share for each European country: geographical, historical and social reasons are the main factors behind these trade relationships.

It should be stressed that the Common Commercial Policy has also been successful in its “external” dimension. In fact, the “deeper” process has not prevented continuing negotiations on PTAs with a number of external partners. Therefore, according to our estimates, also the “wider PTAs” have had positive impacts on EU imports flows. Countries stipulating PTAs with the EU have increased their exports to the European countries by around 77% on average.

The reason for the presence of a wider strategy alongside the deeper one is partly the fact that the EU’s commercial policy since the end of the 1990s has been increasingly shaped by EU obligations under the WTO, which came into being in 1995. The positive and significant coefficient of PTAs agreements signed by EU with third countries may have somehow restricted the occurrence of trade diversion effects, which in our estimates are indeed very limited, due to the elimination of EU internal tariffs.

## APPENDIX

**Tab. 1** **EU PTAs**

Agreement	Date of entry into force	Type of agreement
EC (Treaty of Rome)	1-Jan-58	Customs union
EC — OCTs	1-Jan-71	Free trade agreement
EC — Switzerland and Liechtenstein	1-Jan-73	Free trade agreement
EC accession of Denmark, Ireland and UK	1-Jan-73	Accession to customs union
EC — Iceland	1-Jan-73	Free trade agreement
EC — Norway	1-Jul-73	Free trade agreement
EC — Algeria	1-Jul-76	Free trade agreement
EC — Syria	1-Jul-77	Free trade agreement
EC accession of Greece	1-Jan-81	Accession to customs union
EC accession of Portugal and Spain	1-Jan-86	Accession to customs union
EC — Andorra	1-Jul-91	Customs union
EC — Bulgaria	31-Dec-93	Free trade agreement
EC accession Austria, Finland and Sweden	1-Jan-95	Accession to customs union
EC — Bulgaria	1-Feb-95	Services agreement
EC — Romania	1-Feb-95	Services agreement

Source [http://www.wto.org/english/thewto\\_e/whatis\\_e/tif\\_e/agrm1\\_e.htm](http://www.wto.org/english/thewto_e/whatis_e/tif_e/agrm1_e.htm)

**Tab. 2** **EU PTAs after 1995**

Agreement	Date of entry into force	Type of agreement
EC — Turkey	1-Jan-96	Customs union
EC — Faroe Islands	1-Jan-97	Free trade agreement
EC — Palestinian Authority	1-Jul-97	Free trade agreement
EC — Tunisia	1-Mar-98	Free trade agreement
EC — South Africa	1-Jan-00	Free trade agreement
EC — Morocco	1-Mar-00	Free trade agreement
EC — Israel	1-Jun-00	Free trade agreement
EC — Mexico	1-Jul-00	Free trade agreement
EC — Mexico	1-Mar-01	Services agreement
EC — FYROM	1-Jun-01	Free trade agreement
EC — Croatia	1-Mar-02	Free trade agreement
EC — Jordan	1-May-02	Free trade agreement
EC - Chile	1-Feb-03	Free trade agreement
EC - Lebanon	1-Mar-03	Free trade agreement
EU Enlargement	1-May-04	Accession to customs union
EU Enlargement	1-May-04	Accession to services agreement
EC - Egypt	1-Jun-04	Free trade agreement
EC-Chile	1-Mar-05	Services agreement

Source: [http://www.wto.org/english/thewto\\_e/whatis\\_e/tif\\_e/agrm1\\_e.htm](http://www.wto.org/english/thewto_e/whatis_e/tif_e/agrm1_e.htm)

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