The Relationship between Spatial Interdependencies in the European Union and the Trade-I

Cătălin Angelo Ioan[1], Gina Ioan[2]

Abstract. The article treats the links between imports of EU countries and relative distances between them. Mostly there are linear regressions equations that modeling the import relative to the spatial relations between states.

Keywords: graph; European Union; Bellman; trade; export; import

1. The Development of Trade in the Context of Globalization

Although there is no universally accepted definition, the term globalization is often used in economic literature, the purpose of internationalization of trade in goods and services, capital and labor.

In conditions of globalization, of growing interdependence of the world's countries and the complexity of the global economy, we are seeing a diversification of increasingly sharp trade. Factors that influenced the development of trade relations, the global economic circuit are mainly economic, and we refer to scientific and technical progress, deepening international division of labor and, sometimes, these factors putting on a political form.

Economic flows occurring in the global economy reveals changes in the economic development of states, changes which stay at the underlying economic structure and dynamics of the circuit.

In this context, foreign trade (import and export) is an important component of analysis and assessment of an economic structure that aim for, among other components, macrostabilization and building an efficient economy.

[1] Associate Professor PhD, Danubius University of Galati, Department of Economics, Romania, Address: 3 Galati Blvd., Galati 800654, Romania, Tel.: +40372361102, Corresponding author: catalin_angelo_ioan@univ-danubius.ro.
[2] Senior Lecturer, PhD, Danubius University of Galati, Department of Economics, Romania, Address: 3 Galati Blvd., Galati 800654, Romania, Tel.: +40372361102, E-mail: ginaioan@univ-danubius.ro.

With the advent in 1776 of the work of Adam Smith, The Wealth of Nations and waiver of mercantilist doctrine, free trade has become a way of enhancing mutual income of the countries that were involved in this kind of activity.

Following the Great Depression of 1929-1933, foreign trade experienced a sharp decrease due to the establishment and protectionism and trade barriers.

Between the end of the Second World War and the mid-1970s, trade has experienced significant growth when its volume recorded an annual growth rate of 5.8%, while production registered an annual growth rate 3.9%. After 1975 until the late 1980s, both production volumes and trade volumes have declined growth rates of around 4.1% per year, i.e. 3.3% per year ([1]).

An important role in the development of international trade theory have had after 1980 neoliberal theorists, Milton Friedman and Friedrich von Hayek August, who believed that the state should have a role traditionally supervisor of order.

Until the 1980s, the trend of openness to foreign markets was higher for industrial countries to emerging countries. After this period, however, there have been major changes in the structure of trade in terms of emerging countries.

The rapid growth of domestic production in the emerging countries, which led to the economic expansion of the early 2000s, increased the share of these countries in all international trade from 19% in the early 1970s to over 30% in 2002.

Progress in recent years is based on the competitiveness of the countries of the world which is due mainly financial and trade interdependence. As globalization is in full swing, international trade, the premise of sustainable development of all parts of the world economy, constitute the main vector of its manifestation.

The increase of the level and dynamics of trade flows, capital flows, information flows and the degree of labor mobility are influenced by globalization.

2. The Determination of Minimum Length of Roads Between EU Countries

In this section we shall determine the minimum lengths of the roads between EU countries for the purposes of considering only the existence arcs (actually the edges, since this is an undirected graph) between them, and not the actual distance.

First, let consider the graph of European Union in terms of links that is, if two countries have a common border we assign an edge of unitary length between them.

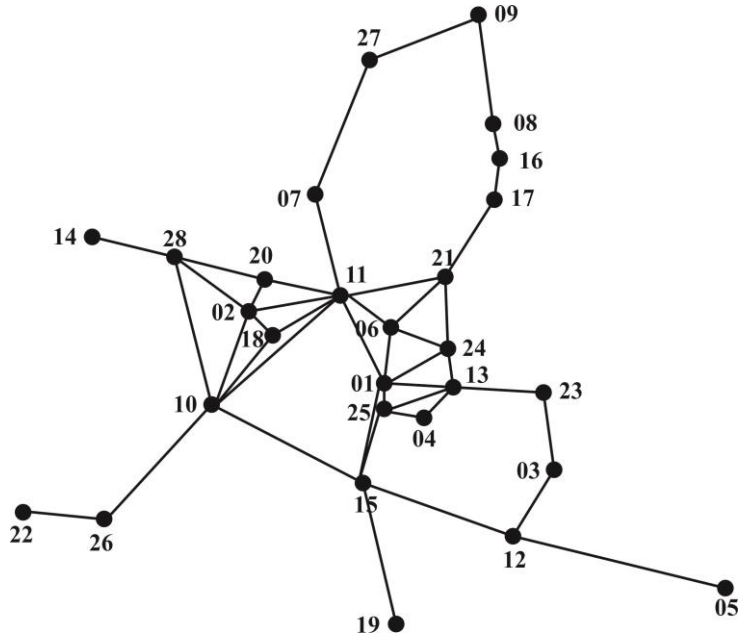

Figure 1

Source: (Ioan & Ioan, 2016)

where:

01 – Austria, 02 – Belgium, 03 – Bulgaria, 04 – Croatia, 05 – Cyprus, 06 - Czech Republic, 07 – Denmark, 08 – Estonia, 09 – Finland, 10 – France, 11 – Germany, 12 – Greece, 13 – Hungary, 14 – Ireland, 15 – Italy, 16 – Latvia, 17 – Lithuania, 18 – Luxembourg, 19 – Malta, 20 – Netherlands, 21 – Poland, 22 – Portugal, 23 – Romania, 24 – Slovakia, 25 – Slovenia, 26 – Spain, 27 – Sweden, 28 - United Kingdom.

Considering now the matrix of the graph $D_1=(d_{ij})\in M_{28}(R)$ where $d_{ij}=1$ when between x_i and x_j (the nodes appropriate to the countries) there exists an arc, $d_{ij}=\infty$ if there isn't an arc between x_i and x_j and $d_{ii}=0$ $\forall i=\overline{1,28}$.

The determination of minimum distances in the terms of minimal number of arcs between two nodes can be made with the Bellman-Kalaba algorithm which consists of several steps:

Step 0: Let fix a node x_k for the determination of minimum lengths of roads from the other nodes to it.

Step 1: Noting $v^{(i)} \in \mathbf{R}^{28}$ the vector containing the minimum lengths of roads from the nodes $\{x_1,...,x_{28}\}$ to x_k with most "i" arcs, we have that the column matrix "k" of D_1 contains lengths of roads formed with a single arc from x_i, $i=\overline{1,28}$ to x_k.

Step 2: Assume that were determined $v^{(i)}$, $i=\overline{1,s}$ with $s\geq 1$ and the matrix $D_s=\left(\tilde{d}_{ij}\right) \in M_{28}(\mathbf{R})$ where $\tilde{d}_{ij} = d_{ij} + v_j^{(s)}$, $i,j=\overline{1,n}$ is the minimum length of the road with most (s+1) arches from the x_i to x_k, necessarily passing through x_j. It is then determined, $v_i^{(s+1)} = \min\limits_{j=1,28} \tilde{d}_{ij}$, $i=\overline{1,28}$ which represents the minimum length of the roads with most than "s+1" arcs from x_i the node reference x_k, thus generating the vector $v^{(s+1)}$.

Step 3: The algorithm is repeated until for $t\geq 1$: $v^{(t+1)}=v^{(t)}$ that is the minimum length of not more than "t" arcs may not decrease at the addition of an additional arc.

The Bellman-Kalaba algorithm, for the matrix of the graph (appendix A.1) gives the matrix of minimum distances between countries (appendix A.2) that is the minimum number of arcs necessary for the transition from one country to another.

Because this matrix has the great disadvantage that regions far from the reference country have greater values we shall act as follows.

We first make the hypothesis that if between two countries there exists a shorter road the trade exchanges are bigger. If a volume of goods must be carried from one country to another (situated at the distance "m" – in terms of edges) let note with t the necessary time. The necessary time for carry the same volume to a road of length 1 is therefore $\frac{t}{m}$. After this analysis, the provider country take into consideration an export of a volume equal with $\frac{V}{m}$. After these, we shall transform the matrix from table A.2, let say $P=\left(p_{ij}\right) \in M_{28}(\mathbf{R})$ in the matrix with elements $\tilde{G} = \left(\tilde{g}_{ij}\right) \in M_{28}(\mathbf{R})$ where $\tilde{g}_{ij} = \frac{1}{p_{ij}}$ if $i\neq j$ and $\tilde{g}_{ii}=0$, $i,j=\overline{1,28}$ (because a country cannot do exports or imports in itself). The elements of matrix $\tilde{G}$ mean the degree of strength of links between countries.

One correction we shall make at this matrix. Because we want to multiply $\tilde{G}$ with column vectors which give informations about various economic indicators, the sum of the products will not reflects the global link of the involved country to the others. For this reason, we shall normalize the elements of $\tilde{G}$ obtaining in the final,

the matrix $G=(g_{ij})\in M_{28}(\mathbf{R})$ where $g_{ij}=\frac{\frac{1}{p_{ij}}}{\sum_{\substack{j=1\\ j\neq i}}^{n}\frac{1}{p_{ij}}}$ if $i\neq j$, $g_{ii}=0$, $i,j=\overline{1,28}$ (appendix A.3).

This will be the reference matrix which it be used in all our computations.

3. The Analysis of the Imports in EU Countries

In this section we shall analyze the relations between the export of EU countries and imports of each of them.

In Appendix A.4 and A.5 we have the tables of exports and imports of European Union countries during 2004-2015.

Multiplying the matrix G with the values from tables A.4 and A.5, we find the tables A.8-A.11 in Appendix A.6.

Because not all exports from one country will be transferred to the EU reference country, we shall search if there is a linear dependence between real imports and computed imports (after the results from tables A.8-A.11).

In the case of Austria, from Appendix A.7 we can see that is a strong link between the two groups of indicators (R^2=0.9691), having finally:

IM_AT(t)=0.0203EX_BE(t)+0.0136EX_BG(t)+0.0203EX_HR(t)+0.0136EX_CY(t)+0.0406EX_CZ(t)+0.0203EX_DK(t)+0.0081EX_EE(t)+0.0102EX_FI(t)+0.0203EX_FR(t)+0.0406EX_DE(t)+
0.0203EX_EL(t)+0.0406EX_HU(t)+0.0102EX_IE(t)+0.0406EX_IT(t)+0.0102EX_LV(t)+
0.0136EX_LT(t)+0.0203EX_LU(t)+0.0203EX_MT(t)+0.0203EX_NL(t)+0.0203EX_PL(t)+
0.0102EX_PT(t)+0.0203EX_RO(t)+0.0406EX_SK(t)+0.0406EX_SI(t)+0.0136EX_ES(t)+

0.0136EX_SE(t)+0.0136EX_UK(t)+18112.5424

where IM_ means real imports, EX_ means real exports, t – the reference time and the abbreviations for countries are the usual: Austria – AT, Belgium – BE, Bulgaria – BG, Croatia – HR, Cyprus – CY, Czech Republic – CZ, Denmark – DK, Estonia – EE, Finland – FI, France – FR, Germany – DE, Greece – EL, Hungary – HU, Ireland – IE, Italy – IT, Latvia – LV, Lithuania – LT, Luxembourg – LU, Malta – MT, Netherlands – NL, Poland – PL, Portugal – PT, Romania – RO, Slovakia – SK, Slovenia – SI, Spain – ES, Sweden – SE, United Kingdom – UK.

A comparison of regression coefficients and percentages imports from studied countries (Source: http://atlas.media.mit.edu/en/profile/country - column Real in Table 1) indicates that there are no large differences except Croatia, Slovakia and Slovenia (figure 3). Also, we can see that the real exports of EU-countries in Austria are below of those suggested by the regression equation which means that imports are below the potential offered by its geographic position.

The average distance between real data and those from the regression is: 1.36%.

Table 1. The correlation between the coefficients of regression and the real exports of EU-countries in Austria (in percent) in 2013

Country	Regression	Real	Country	Regression	Real
Austria	-	-	**Italy**	4.06%	2.10%
Belgium+Luxembourg	4.06%	0.85%	**Latvia**	1.02%	0.37%
Bulgaria	1.36%	1.80%	**Lithuania**	1.36%	0.43%
Croatia	2.03%	6.30%	**Malta**	2.03%	0.32%
Czech Republic	4.06%	4.50%	**Netherlands**	2.03%	0.91%
Denmark	2.03%	0.70%	**Poland**	2.03%	1.80%
Estonia	0.81%	0.32%	**Portugal**	2.03%	0.92%
Finland	1.02%	0.71%	**Romania**	1.02%	2.30%
France	2.03%	0.87%	**Slovakia**	2.03%	5.70%
Germany	4.06%	4.70%	**Slovenia**	4.06%	7.90%
Greece	2.03%	0.66%	**Spain**	4.06%	0.97%
Hungary	4.06%	5.00%	**Sweden**	1.36%	1.00%
Ireland	1.02%	1.10%	**United Kingdom**	1.36%	0.57%

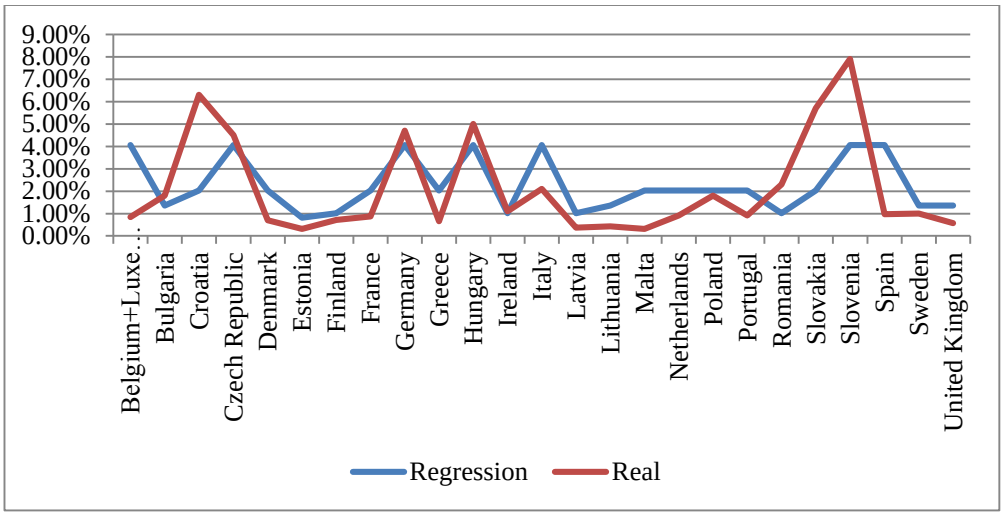

Figure 2. The relationship between exports based on distances and the real exports in 2013 in Austria (in percent)

In the case of **Belgium**, from Appendix A.8 we can see that is a strong link between the two groups of indicators (R^2=0.9536), having finally:

IM_BE(t)=0.047EX_AT(t)+0.0235EX_BG(t)+0.0235EX_HR(t)+0.0235EX_CY(t)+0.047EX_CZ(t)+0.047EX_DK(t)+0.0187EX_EE(t)+0.0235EX_FI(t)+0.094EX_FR(t)+0.094EX_DE(t)+
0.0313EX_EL(t)+0.0313EX_HU(t)+0.047EX_IE(t)+0.047EX_IT(t)+0.0235EX_LV(t)+
0.0313EX_LT(t)+0.094EX_LU(t)+0.0313EX_MT(t)+0.094EX_NL(t)+0.047EX_PL(t)+
0.0313EX_PT(t)+0.0235EX_RO(t)+0.0313EX_SK(t)+0.0313EX_SI(t)+0.047EX_ES(t)+
0.0313EX_SE(t)+0.094EX_UK(t)+35798.9745

Also, in the case of **Luxembourg**, from Appendix A.9 we can see that is a weak link between the two groups of indicators (R^2=0.4959), having finally:

IM_LU(t)=0.0016EX_AT(t)+0.0031EX_BE(t)+0.0008EX_BG(t)+0.0008EX_HR(t)+
0.0008EX_CY(t)+0.0016EX_CZ(t)+0.0016EX_DK(t)+0.0006EX_EE(t)+0.0008EX_FI(t)+
0.0031EX_FR(t)+0.0031EX_DE(t)+0.001EX_EL(t)+0.001EX_HU(t)+0.001EX_IE(t)+
0.0016EX_IT(t)+0.0008EX_LV(t)+0.001EX_LT(t)+0.001EX_MT(t)+0.0016EX_NL(t)+
0.0016EX_PL(t)+0.001EX_PT(t)+0.0008EX_RO(t)+0.001EX_SK(t)+0.001EX_SI(t)+
0.0016EX_ES(t)+0.001EX_SE(t)+0.0016EX_UK(t)+11351.0435

A comparison of regression coefficients and percentages imports from studied countries *(Source: http://atlas.media.mit.edu/en/profile/country - column Real in Table 2*) indicates that there are no large differences except Germany (figure 3) for which the imports are much below the distance and on the other side Ireland and Netherlands which imports exceed much distances to both countries. Also, we can see that the real exports of EU-countries in Belgium and Luxembourg are below of

those suggested by the regression equation which means that imports are below the potential offered by its geographic position.

The average distance between real data and those from the regression is: 2.46%.

Table 2. The correlation between the coefficients of regression and the real exports of EU-countries in Belgium+Luxembourg (in percent) in 2013

Country	Regression	Real	Country	Regression	Real
Austria	4.70%	1.80%	**Italy**	4.70%	3.20%
Belgium+Luxembourg	-	-	**Latvia**	2.35%	1.80%
Bulgaria	2.35%	3.30%	**Lithuania**	3.13%	1.60%
Croatia	2.35%	1.80%	**Malta**	3.13%	0.83%
Czech Republic	4.70%	3.10%	**Netherlands**	9.40%	17.00%
Denmark	4.70%	1.60%	**Poland**	4.70%	2.70%
Estonia	1.87%	2.20%	**Portugal**	3.13%	3.40%
Finland	2.35%	3.60%	**Romania**	2.35%	1.80%
France	9.40%	9.10%	**Slovakia**	3.13%	1.80%
Germany	9.40%	4.90%	**Slovenia**	3.13%	1.10%
Greece	3.13%	1.20%	**Spain**	4.70%	3.20%
Hungary	3.13%	1.90%	**Sweden**	3.13%	5.80%
Ireland	4.70%	13.00%	**United Kingdom**	9.40%	5.50%

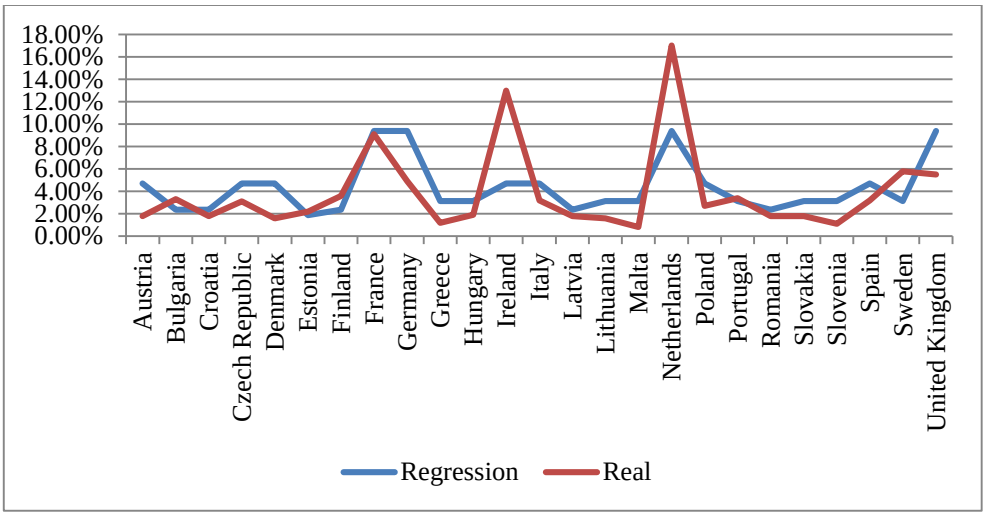

Figure 3. The relationship between exports based on distances and the real exports in 2013 in Belgium+Luxembourg (in percent)

In the case of **Bulgaria**, from Appendix A.10 we can see that is a strong link between the two groups of indicators (R^2=0.8898), having finally:

IM_BG(t)=0.0099EX_AT(t)+0.0074EX_BE(t)+0.EX_BG(t)+0.0099EX_HR(t)+0.0149EX_CY(t)+
0.0074EX_CZ(t)+0.006EX_DK(t)+0.0042EX_EE(t)+0.0042EX_FI(t)+0.0099EX_FR(t)+
0.0074EX_DE(t)+0.0298EX_EL(t)+0.0149EX_HU(t)+0.006EX_IE(t)+0.0149EX_IT(t)+
0.005EX_LV(t)+0.006EX_LT(t)+0.0074EX_LU(t)+0.0099EX_MT(t)+0.006EX_NL(t)+
0.0074EX_PL(t)+0.006EX_PT(t)+0.0298EX_RO(t)+0.0099EX_SK(t)+0.0099EX_SI(t)+
0.0074EX_ES(t)+0.005EX_SE(t)+0.0074EX_UK(t)-13417.9939

A comparison of regression coefficients and percentages imports from studied countries (*Source: http://atlas.media.mit.edu/en/profile/country - column Real in Table 3*) indicates that there are no large differences except Greece (figure 4) for which the imports are much higher than the distance between them. Also, we can see that the real exports of EU-countries in Bulgaria are closer to those suggested by the regression equation which means that imports depend preferential from the potential offered by its geographic position.

The average distance between real data and those from the regression is: 0.54%.

Table 3. The correlation between the coefficients of regression and the real exports of EU-countries in Bulgaria (in percent) in 2013

Country	Regression	Real	Country	Regression	Real
Austria	0.99%	0.57%	**Italy**	1.49%	0.48%
Belgium+Luxembourg	1.48%	0.18%	**Latvia**	0.50%	0.17%
Bulgaria	0.00%		**Lithuania**	0.60%	0.21%
Croatia	0.99%	0.42%	**Malta**	0.99%	0.11%
Czech Republic	0.74%	0.47%	**Netherlands**	0.60%	0.17%
Denmark	0.60%	0.12%	**Poland**	0.74%	0.52%
Estonia	0.42%	0.18%	**Portugal**	0.60%	0.12%
Finland	0.42%	0.08%	**Romania**	2.98%	3.40%
France	0.99%	0.18%	**Slovakia**	0.99%	0.59%
Germany	0.74%	0.25%	**Slovenia**	0.99%	0.76%
Greece	2.98%	5.10%	**Spain**	0.74%	0.61%
Hungary	1.49%	1.00%	**Sweden**	0.50%	0.13%
Ireland	0.60%	0.09%	**United Kingdom**	0.74%	0.11%

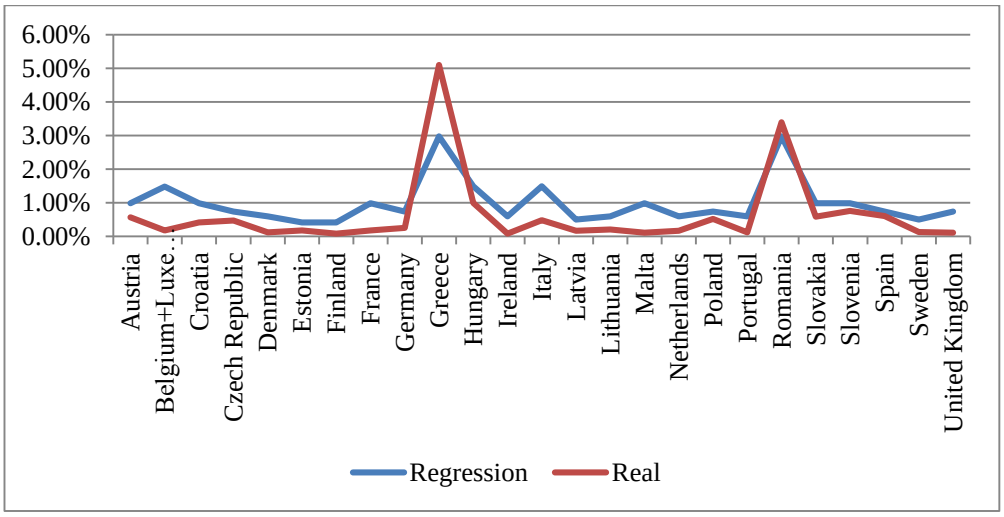

Figure 4. The relationship between exports based on distances and the real exports in 2013 in Bulgaria (in percent)

In the case of **Croatia**, from Appendix A.11 we can see that is a weak link between the two groups of indicators (R^2=0.2881), having finally:

IM_HR(t)=0.0027EX_AT(t)+0.0013EX_BE(t)+0.0018EX_BG(t)+0.0013EX_CY(t)+
0.0018EX_CZ(t)+0.0013EX_DK(t)+0.0009EX_EE(t)+0.0009EX_FI(t)+0.0018EX_FR(t)+
0.0018EX_DE(t)+0.0018EX_EL(t)+0.0053EX_HU(t)+0.0011EX_IE(t)+0.0027EX_IT(t)+0
.0011EX_LV(t)+
0.0013EX_LT(t)+0.0013EX_LU(t)+0.0018EX_MT(t)+0.0013EX_NL(t)+0.0018EX_PL(t)
+
0.0011EX_PT(t)+0.0027EX_RO(t)+0.0027EX_SK(t)+0.0053EX_SI(t)+0.0013EX_ES(t)+
0.0011EX_SE(t)+0.0013EX_UK(t)+9575.5559

A comparison of regression coefficients (even the regression isn't very good because a small value of R^2 or an existence of a weak autocorrelation) and percentages imports from studied countries (*Source: http://atlas.media.mit.edu/en/profile/country - column Real in Table 4*) indicates that there are no large differences except Slovenia (figure 5) which is absolutely normal because of their former membership to Yugoslavia. Also, we can see that the real exports of EU-countries in Croatia are closer to those suggested by the regression equation which means that imports depend preferential from the potential offered by its geographic position. The average distance between real data and those from the regression is: 0.38%.

Table 4. The correlation between the coefficients of regression and the real exports of EU-countries in Croatia (in percent) in 2013

Country	Regression	Real	Country	Regression	Real
Austria	0.27%	1.10%	**Italy**	0.27%	0.53%
Belgium+Luxembourg	0.26%	0.09%	**Latvia**	0.11%	0.05%
Bulgaria	0.18%	0.23%	**Lithuania**	0.13%	0.05%
Croatia	-	-	**Malta**	0.18%	0.29%
Czech Republic	0.18%	0.25%	**Netherlands**	0.13%	0.12%
Denmark	0.13%	0.25%	**Poland**	0.18%	0.24%
Estonia	0.09%	0.09%	**Portugal**	0.11%	0.03%
Finland	0.09%	0.06%	**Romania**	0.27%	0.22%
France	0.18%	0.08%	**Slovakia**	0.27%	0.43%
Germany	0.18%	0.21%	**Slovenia**	0.53%	7.20%
Greece	0.18%	0.24%	**Spain**	0.13%	0.11%
Hungary	0.53%	1.20%	**Sweden**	0.11%	0.09%
Ireland	0.11%	0.05%	**United Kingdom**	0.13%	0.04%

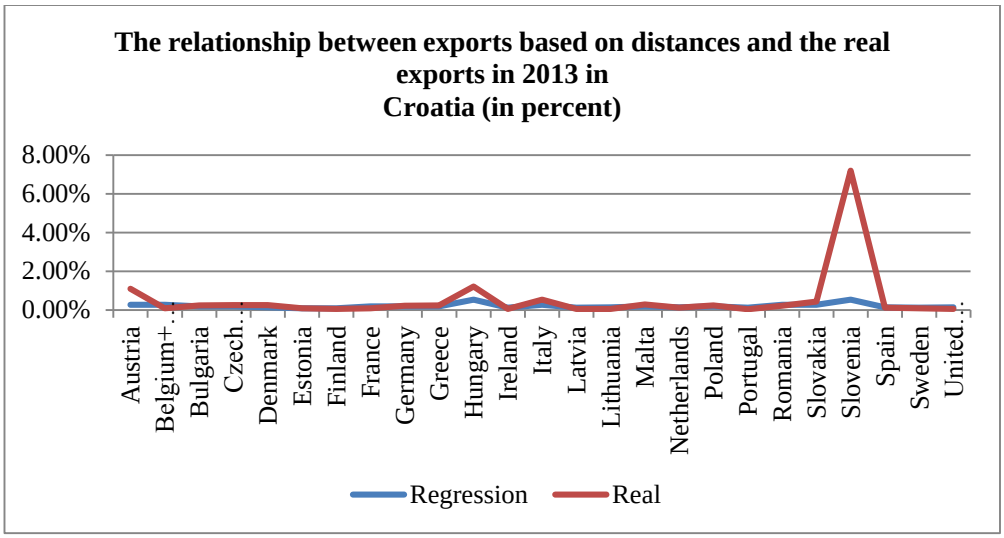

Figure 5

The case of **Cyprus**, from Appendix A.12 is not relevant because R^2=0.0071, that is the linear regression analysis does not explain the phenomenon.

In the case of **Czech Republic**, from Appendix A.13 we can see that is a strong link between the two groups of indicators (R^2=0.9451), having finally:

IM_CZ(t)=0.0599EX_AT(t)+0.0299EX_BE(t)+0.0149EX_BG(t)+0.0199EX_HR(t)+
0.0149EX_CY(t)+0.0299EX_DK(t)+0.0149EX_EE(t)+0.0149EX_FI(t)+0.0299EX_FR(t)+
0.0599EX_DE(t)+0.0199EX_EL(t)+0.0299EX_HU(t)+0.0149EX_IE(t)+0.0299EX_IT(t)+
0.0199EX_LV(t)+0.0299EX_LT(t)+0.0299EX_LU(t)+0.0199EX_MT(t)+0.0299EX_NL(t)
+
0.0599EX_PL(t)+0.0149EX_PT(t)+0.0199EX_RO(t)+0.0599EX_SK(t)+0.0299EX_SI(t)+
0.0199EX_ES(t)+0.0199EX_SE(t)+0.0199EX_UK(t)-51129.2017

A comparison of regression coefficients and percentages imports from studied countries (*Source: http://atlas.media.mit.edu/en/profile/country - column Real in Table 5*) indicates that there are no large differences (real vs. predicted imports) except Slovakia (figure 6) which is absolutely normal because of their former membership to Czechoslovakia. In a contrary direction, we can see that real imports from Belgium+Luxembourg are very small (0.76%) in comparison with the distance (5.98%) and surprising the position of Germany with 2.70% in total imports of Czech Republic related to its proximity.

Also, we can see that the other real exports of EU-countries in Croatia are closer to those suggested by the regression equation which means that imports depend from the potential offered by its geographic position.

The average distance between real data and those from the regression is: 1.57%.

Table 5. The correlation between the coefficients of regression and the real exports of EU-countries in Czech Republic (in percent) in 2013

Country	Regression	Real	Country	Regression	Real
Austria	5.99%	2.70%	**Italy**	2.99%	1.10%
Belgium+Luxembourg	5.98%	0.76%	**Latvia**	1.99%	1.10%
Bulgaria	1.49%	1.10%	**Lithuania**	2.99%	0.91%
Croatia	1.99%	1.10%	**Malta**	1.99%	0.92%
Czech Republic	-	-	**Netherlands**	2.99%	0.94%
Denmark	2.99%	0.84%	**Poland**	5.99%	5.50%
Estonia	1.49%	0.42%	**Portugal**	1.49%	0.73%
Finland	1.49%	0.49%	**Romania**	1.99%	2.10%
France	2.99%	0.82%	**Slovakia**	5.99%	11.00%
Germany	5.99%	2.70%	**Slovenia**	2.99%	2.40%
Greece	1.99%	0.63%	**Spain**	1.99%	0.81%
Hungary	2.99%	3.50%	**Sweden**	1.99%	0.83%
Ireland	1.49%	0.64%	**United Kingdom**	1.99%	0.60%

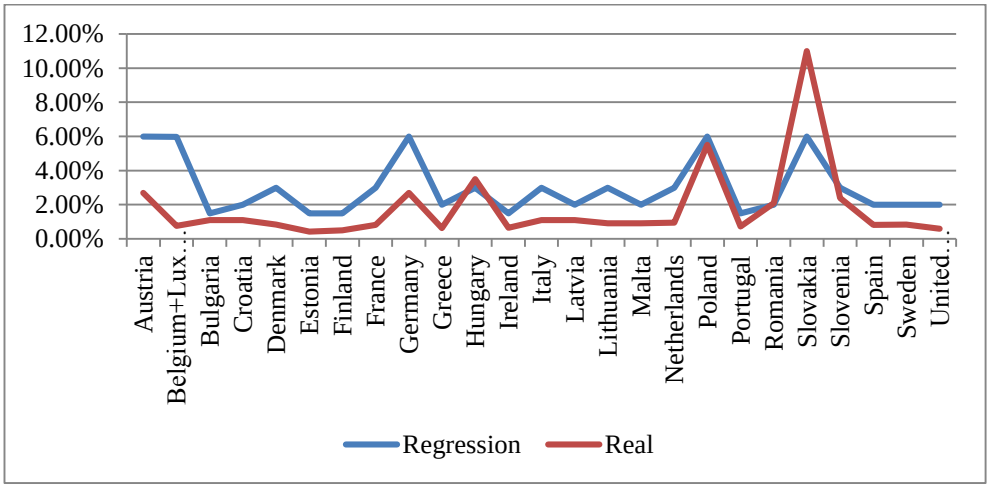

Figure 6. The relationship between exports based on distances and the real exports in 2013 in Czech Republic (in percent)

In the case of **Denmark**, from Appendix A.14 we can see that is a link between the two groups of indicators (R^2=0.7983), having:

IM_DK(t)=0.0092EX_AT(t)+0.0092EX_BE(t)+0.0037EX_BG(t)+0.0046EX_HR(t)+
0.0037EX_CY(t)+0.0092EX_CZ(t)+0.0062EX_EE(t)+0.0092EX_FI(t)+0.0092EX_FR(t)+
0.0185EX_DE(t)+0.0046EX_EL(t)+0.0062EX_HU(t)+0.0046EX_IE(t)+0.0062EX_IT(t)+
0.0046EX_LV(t)+0.0062EX_LT(t)+0.0092EX_LU(t)+0.0046EX_MT(t)+0.0092EX_NL(t)
+
0.0092EX_PL(t)+0.0046EX_PT(t)+0.0046EX_RO(t)+0.0062EX_SK(t)+0.0062EX_SI(t)+
0.0062EX_ES(t)+0.0185EX_SE(t)+0.0062EX_UK(t)+25877.4632

Durbin Watson statistical analysis reveals a positive autocorrelation of errors (d=0.8125 for the limits of autocorrelation: (0,0.97)). However we will analyze the differences between the regression coefficients and the actual data, due to temporal delay which will appear later (when eliminating autoregression).

A comparison of regression coefficients and percentages imports from studied countries (*Source: http://atlas.media.mit.edu/en/profile/country - column Real in Table 6*) indicates that there are no large differences (real vs. predicted imports) except Latvia (figure 7) and Sweden which is absolutely normal as a consequence of commercial traditions that have bound these countries.

Unlike the other countries analyzed so far, one can see that in general, real imports were above those provided by regression analysis, which shows a strong trade policy, lying over one somewhat conjectural than one dependent on proximity.

The average distance between real data and those from the regression is: 0.75%.

Table 6. The correlation between the coefficients of regression and the real exports of EU-countries in Denmark (in percent) in 2013

Country	Regression	Real	Country	Regression	Real
Austria	0.92%	0.59%	**Italy**	0.62%	0.69%
Belgium+Luxembourg	1.84%	0.82%	**Latvia**	0.46%	4.30%
Bulgaria	0.37%	0.44%	**Lithuania**	0.62%	2.30%
Croatia	0.46%	0.33%	**Malta**	0.46%	0.52%
Czech Republic	0.92%	0.91%	**Netherlands**	0.92%	1.30%
Denmark	-	-	**Poland**	0.92%	1.70%
Estonia	0.62%	2.40%	**Portugal**	0.46%	0.69%
Finland	0.92%	2.00%	**Romania**	0.46%	0.43%
France	0.92%	0.55%	**Slovakia**	0.62%	1.00%
Germany	1.85%	1.40%	**Slovenia**	0.62%	1.00%
Greece	0.46%	0.50%	**Spain**	0.62%	0.51%
Hungary	0.62%	0.81%	**Sweden**	1.85%	7.10%
Ireland	0.46%	0.90%	**United Kingdom**	0.62%	1.10%

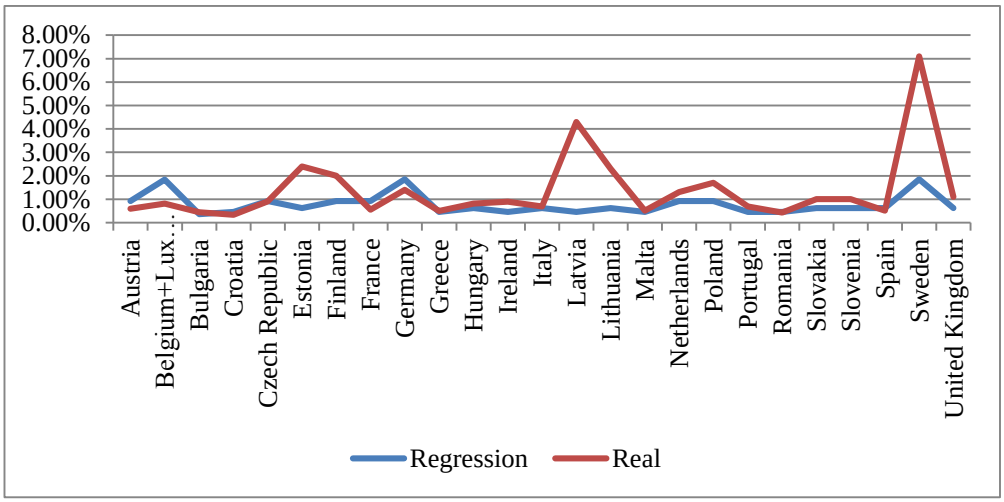

Figure 7. The relationship between exports based on distances and the real exports in 2013 in Denmark (in percent)

Because in the upper analysis we have ρ - the autocorrelation coefficient of errors having value ρ=0.579706184 we shall make another regression analysis for the set of data:

Imports-computed-new(t)=Imports-computed(t)-ρ·Imports-computed(t-1) and Exports-real-new(t)= Exports-real(t)-ρ·Exports-real(t-1) (table A.20). Finally, we obtain the equation of regression:

IM_DK(t)=0.5797IM_DK(t-1)+0.0108EX_AT(t)-0.0063EX_AT(t-1)+0.0108EX_BE(t)-0.0063EX_BE(t-1)+0.0043EX_BG(t)-0.0025EX_BG(t-1)+0.0054EX_HR(t)-0.0031EX_HR(t-1)+ 0.0043EX_CY(t)-0.0025EX_CY(t-1)+0.0108EX_CZ(t)-0.0063EX_CZ(t-1)+0.0072EX_EE(t)-0.0042EX_EE(t-1)+0.0108EX_FI(t)-0.0063EX_FI(t-1)+0.0108EX_FR(t)-0.0063EX_FR(t-1)+ 0.0216EX_DE(t)-0.0125EX_DE(t-1)+0.0054EX_EL(t)-0.0031EX_EL(t-1)+0.0072EX_HU(t)-0.0042EX_HU(t-1)+0.0054EX_IE(t)-0.0031EX_IE(t-1)+0.0072EX_IT(t)-0.0042EX_IT(t-1)+ 0.0054EX_LV(t)-0.0031EX_LV(t-1)+0.0072EX_LT(t)-0.0042EX_LT(t-1)+0.0108EX_LU(t)-0.0063EX_LU(t-1)+0.0054EX_MT(t)-0.0031EX_MT(t-1)+0.0108EX_NL(t)-0.0063EX_NL(t-1)+ 0.0108EX_PL(t)-0.0063EX_PL(t-1)+0.0054EX_PT(t)-0.0031EX_PT(t-1)+0.0054EX_RO(t)-0.0031EX_RO(t-1)+0.0072EX_SK(t)-0.0042EX_SK(t-1)+0.0072EX_SI(t)-0.0042EX_SI(t-1)+ 0.0072EX_ES(t)-0.0042EX_ES(t-1)+0.0216EX_SE(t)-0.0125EX_SE(t-1)+0.0072EX_UK(t)-0.0042EX_UK(t-1)+7957.1418

In the case of **Estonia**, from Appendix A.15 we can see that is a strong link between the two groups of indicators (R^2=0.9028), having:

IM_EE(t)=0.0036EX_AT(t)+0.0036EX_BE(t)+0.0026EX_BG(t)+0.003EX_HR(t)+0.0023 EX_CY(t)+0.0045EX_CZ(t)+0.006EX_DK(t)+0.0181EX_FI(t)+0.0036EX_FR(t)+0.0045E X_DE(t)+
0.0026EX_EL(t)+0.0036EX_HU(t)+0.0026EX_IE(t)+0.003EX_IT(t)+0.0181EX_LV(t)+ 0.009EX_LT(t)+0.0036EX_LU(t)+0.0026EX_MT(t)+0.0036EX_NL(t)+0.006EX_PL(t)+ 0.0026EX_PT(t)+0.003EX_RO(t)+0.0045EX_SK(t)+0.003EX_SI(t)+0.003EX_ES(t)+ 0.009EX_SE(t)+0.003EX_UK(t)-5844.2952

A comparison of regression coefficients and percentages imports from studied countries (*Source: http://atlas.media.mit.edu/en/profile/country - column Real in Table 7*) indicates that there are no large differences (real vs. predicted imports) except former Soviet Union countries – Latvia and Lithuania (figure 8) which is absolutely normal as a consequence of commercial traditions that have bound these countries.

Let note that in general, real imports were close, but under to those provided by regression analysis, which shows a trade policy, which depends on proximity of the EU-countries but not exploring all the possibilities of the minimal distances recovery.

The average distance between real data and those from the regression is: 0.59%.

Table 7. The correlation between the coefficients of regression and the real exports of EU-countries in Estonia (in percent) in 2013

Country	Regression	Real	Country	Regression	Real
Austria	0.36%	0.09%	**Italy**	0.30%	0.09%
Belgium+Luxembourg	0.72%	0.08%	**Latvia**	1.81%	7.80%
Bulgaria	0.26%	0.10%	**Lithuania**	0.90%	4.60%
Croatia	0.30%	0.38%	**Malta**	0.26%	0.03%
Czech Republic	0.45%	0.15%	**Netherlands**	0.36%	0.09%
Denmark	0.60%	0.24%	**Poland**	0.60%	0.61%
Estonia	-	-	**Portugal**	0.26%	0.06%
Finland	1.81%	2.60%	**Romania**	0.30%	0.11%
France	0.36%	0.08%	**Slovakia**	0.45%	0.12%
Germany	0.45%	0.14%	**Slovenia**	0.30%	0.14%
Greece	0.26%	0.06%	**Spain**	0.30%	0.06%
Hungary	0.36%	0.24%	**Sweden**	0.90%	0.83%
Ireland	0.26%	0.05%	**United Kingdom**	0.30%	0.17%

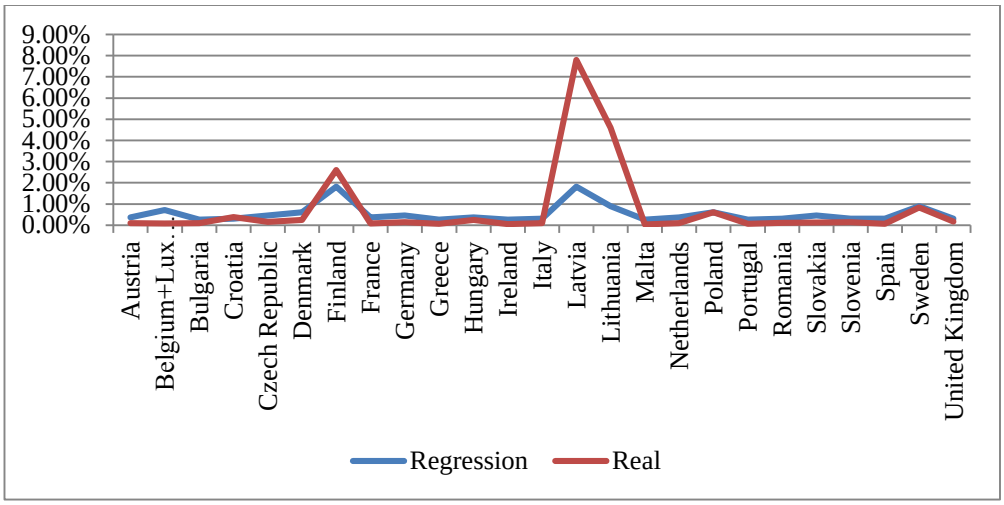

Figure 8. The relationship between exports based on distances and the real exports in 2013 in Estonia (in percent)

In the case of **Finland**, from Appendix A.16 we can see that is a weak link between the two groups of indicators (R^2=0.5906), having:

IM_FI(t)=0,0081EX_AT(t)+0,0081EX_BE(t)+0,0046EX_BG(t)+0,0054EX_HR(t)+
0,0046EX_CY(t)+0,0081EX_CZ(t)+0,0162EX_DK(t)+0,0324EX_EE(t)+0,0081EX_FR(t)
+
0,0108EX_DE(t)+0,0054EX_EL(t)+0,0065EX_HU(t)+0,0054EX_IE(t)+0,0065EX_IT(t)+
0,0162EX_LV(t)+0,0108EX_LT(t)+0,0081EX_LU(t)+0,0054EX_MT(t)+0,0081EX_NL(t)
+
0,0081EX_PL(t)+0,0054EX_PT(t)+0,0054EX_RO(t)+0,0065EX_SK(t)+0,0065EX_SI(t)+
0,0065EX_ES(t)+0,0324EX_SE(t)+0,0065EX_UK(t)+18173,0758

A comparison of regression coefficients and percentages imports from studied countries (*Source: http://atlas.media.mit.edu/en/profile/country - column Real in Table 8*) indicates that there are no large differences (real vs. predicted imports) except Estonia (figure 9) with 12% real imports vs. 3.24% given by the actual theory.

In general, real imports were close, but under to those provided by regression analysis, which shows a trade policy, which depends on proximity of the EU-countries.

The average distance between real data and those from the regression is: 0.71%.

Table 8. The correlation between the coefficients of regression and the real exports of EU-countries in Finland (in percent) in 2013

Country	Regression	Real	Country	Regression	Real
Austria	0.81%	0.40%	**Italy**	0.65%	0.39%
Belgium+Luxembourg	1.62%	0.52%	**Latvia**	1.62%	2.60%
Bulgaria	0.46%	0.26%	**Lithuania**	1.08%	1.60%
Croatia	0.54%	0.23%	**Malta**	0.54%	0.04%
Czech Republic	0.81%	0.53%	**Netherlands**	0.81%	0.78%
Denmark	1.62%	2.30%	**Poland**	0.81%	0.85%
Estonia	3.24%	12.00%	**Portugal**	0.54%	0.53%
Finland	-	-	**Romania**	0.54%	0.32%
France	0.81%	0.43%	**Slovakia**	0.65%	0.38%
Germany	1.08%	0.70%	**Slovenia**	0.65%	0.33%
Greece	0.54%	0.24%	**Spain**	0.65%	0.34%
Hungary	0.65%	0.30%	**Sweden**	3.24%	4.90%
Ireland	0.54%	0.43%	**United Kingdom**	0.65%	0.51%

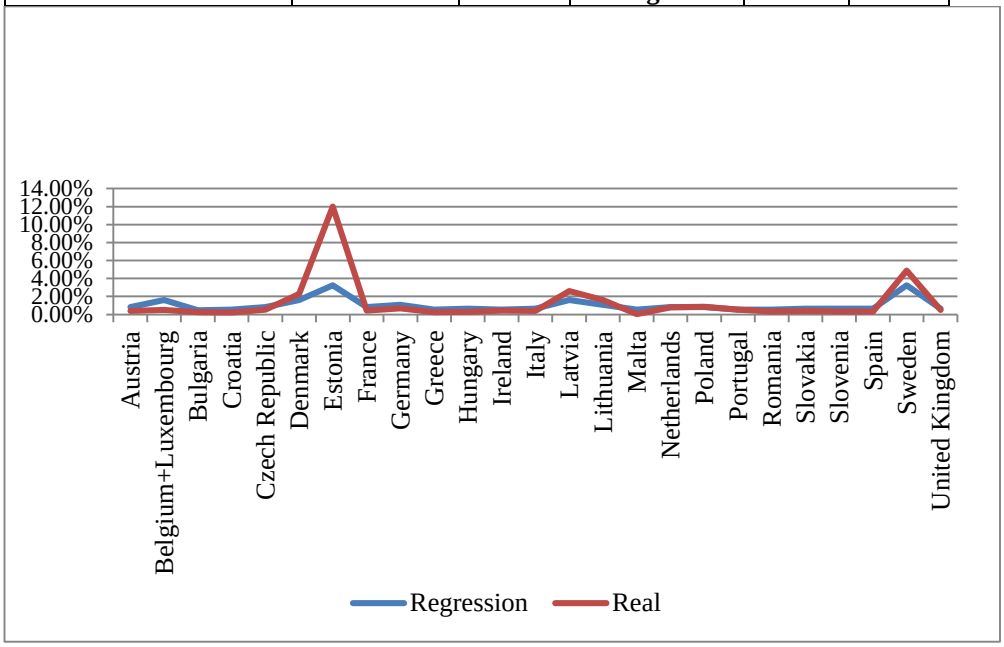

Figure 9. The relationship between exports based on distances and the real exports in 2013 in Finland (in percent)

In the case of **France**, from Appendix A.17 we can see that is a strong link between the two groups of indicators (R^2=0.9367), having:

IM_FR(t)=0.059EX_AT(t)+0.1181EX_BE(t)+0.0393EX_BG(t)+0.0393EX_HR(t)+0.0393 EX_CY(t)+0.059EX_CZ(t)+0.059EX_DK(t)+0.0236EX_EE(t)+0.0295EX_FI(t)+0.1181E X_DE(t)
+0.059EX_EL(t)+0.0393EX_HU(t)+0.059EX_IE(t)+0.1181EX_IT(t)+0.0295EX_LV(t)+ 0.0393EX_LT(t)+0.1181EX_LU(t)+0.059EX_MT(t)+0.059EX_NL(t)+0.059EX_PL(t)+ 0.059EX_PT(t)+0.0295EX_RO(t)+0.0393EX_SK(t)+0.059EX_SI(t)+0.1181EX_ES(t)+ 0.0393EX_SE(t)+0.1181EX_UK(t)+133956.0736

A comparison of regression coefficients and percentages imports from studied countries (*Source: http://atlas.media.mit.edu/en/profile/country - column Real in Table 9*) indicates that there are no large differences (real vs. predicted imports) except Belgium+Luxembourg – under the distance between them and, on the other side, Romania and Portugal (figure 10) over the coefficients of regression, under traditional trade relations.

Let note that in general, real imports were close to those provided by regression analysis.

The average distance between real data and those from the regression is: 2.05%.

Table 9. The correlation between the coefficients of regression and the real exports of EU-countries in France (in percent) in 2013

Country	Regression	Real	Country	Regression	Real
Austria	5.90%	4.40%	**Italy**	11.81%	10.00%
Belgium+Luxembourg	23.62%	14.00%	**Latvia**	2.95%	1.80%
Bulgaria	3.93%	4.50%	**Lithuania**	3.93%	3.30%
Croatia	3.93%	1.70%	**Malta**	5.90%	4.50%
Czech Republic	5.90%	5.10%	**Netherlands**	5.90%	6.20%
Denmark	5.90%	3.30%	**Poland**	5.90%	5.60%
Estonia	2.36%	1.80%	**Portugal**	5.90%	11.00%
Finland	2.95%	3.40%	**Romania**	2.95%	8.30%
France	-	-	**Slovakia**	3.93%	5.30%
Germany	11.81%	8.70%	**Slovenia**	5.90%	5.50%
Greece	5.90%	2.40%	**Spain**	11.81%	15.00%
Hungary	3.93%	4.40%	**Sweden**	3.93%	4.70%
Ireland	5.90%	6.60%	**United Kingdom**	11.81%	6.30%

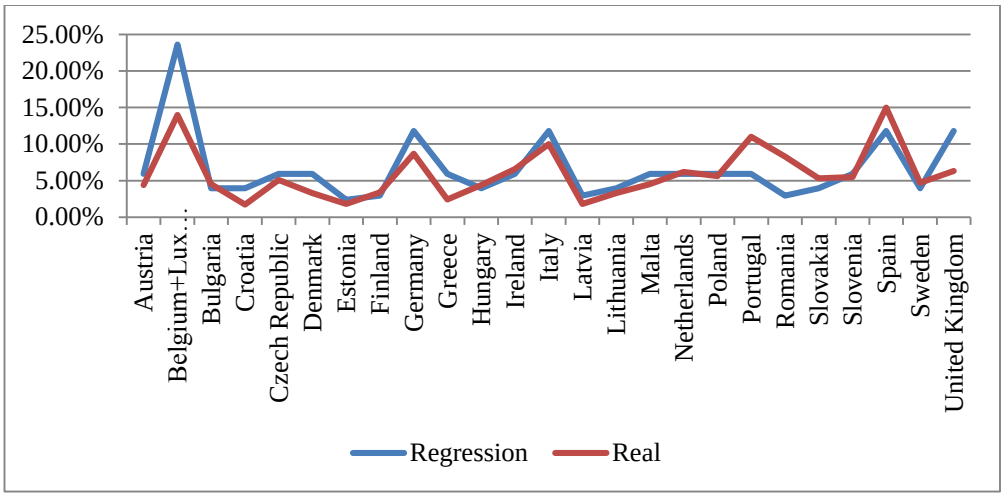

Figure 10. The relationship between exports based on distances and the real exports in 2013 in France (in percent)

In the case of **Germany**, from Appendix A.18 we can see that is a strong link between the two groups of indicators (R^2=0.9816). The P-Value Analysis reveals for Intercept a great value (0.4096) which indicates a weak evidence against the null hypothesis. In fact, assuming the threshold of 59% we obtain the regression in the table A.24. Also, we have a weak autocorrelation (d=0.8592 for the maximum 0.97) but we shall keep the initial conclusions because in the process of eliminating this phenomenon we shall obtain an increase of P-Value at 0.92 which is absurd. Therefore, finally, we have:

IM_DE(t)=0.3644EX_AT(t)+0.3644EX_BE(t)+0.091EX_BG(t)+0.1213EX_HR(t)+0.091EX_CY(t)+0.3644EX_CZ(t)+0.3644EX_DK(t)+0.091EX_EE(t)+0.1213EX_FI(t)+0.3644EX_FR(t)+
0.1213EX_EL(t)+0.1819EX_HU(t)+0.1213EX_IE(t)+0.1819EX_IT(t)+0.1213EX_LV(t)+
0.1819EX_LT(t)+0.3644EX_LU(t)+0.1213EX_MT(t)+0.3644EX_NL(t)+0.3644EX_PL(t)+
0.1213EX_PT(t)+0.1213EX_RO(t)+0.1819EX_SK(t)+0.1819EX_SI(t)+0.1819EX_ES(t)+
0.1819EX_SE(t)+0.1819EX_UK(t)-30938.8646

A comparison of regression coefficients and percentages imports from studied countries (*Source: http://atlas.media.mit.edu/en/profile/country - column Real in Table 10*) indicates that there are many differences (real vs. predicted imports) between countries - Belgium+Luxembourg with a real percent of imports of 15% instead 72.88% (after regression), Denmark with 14% vs. 36.44%, France – 15% vs. 36.44%, Netherlands – 21% vs. 36.44%, Poland – 23% vs. 36.44%. We can easily see that these difference, maybe except Poland, are encountered in the case of he very developed countries from the European Union, which have themselves a

strong export. Let us note that in general, real imports were strong under to those provided by regression analysis, Germany being known the main engine of UE. The average distance between real data and those from the regression is very high: 9.25%.

Table 10. The correlation between the coefficients of regression and the real exports of EU-countries in Germany (in percent) in 2013

Country	Regression	Real	Country	Regression	Real
Austria	36.44%	27.00%	**Italy**	18.19%	12.00%
Belgium+Luxembourg	72.88%	15.00%	**Latvia**	12.13%	6.40%
Bulgaria	9.10%	12.00%	**Lithuania**	18.19%	7.70%
Croatia	12.13%	10.00%	**Malta**	12.13%	8.10%
Czech Republic	36.44%	29.00%	**Netherlands**	36.44%	21.00%
Denmark	36.44%	14.00%	**Poland**	36.44%	23.00%
Estonia	9.10%	3.90%	**Portugal**	12.13%	10.00%
Finland	12.13%	9.40%	**Romania**	12.13%	17.00%
France	36.44%	15.00%	**Slovakia**	18.19%	21.00%
Germany	-	-	**Slovenia**	18.19%	20.00%
Greece	12.13%	6.30%	**Spain**	18.19%	10.00%
Hungary	18.19%	25.00%	**Sweden**	18.19%	10.00%
Ireland	12.13%	7.50%	**United Kingdom**	18.19%	10.00%

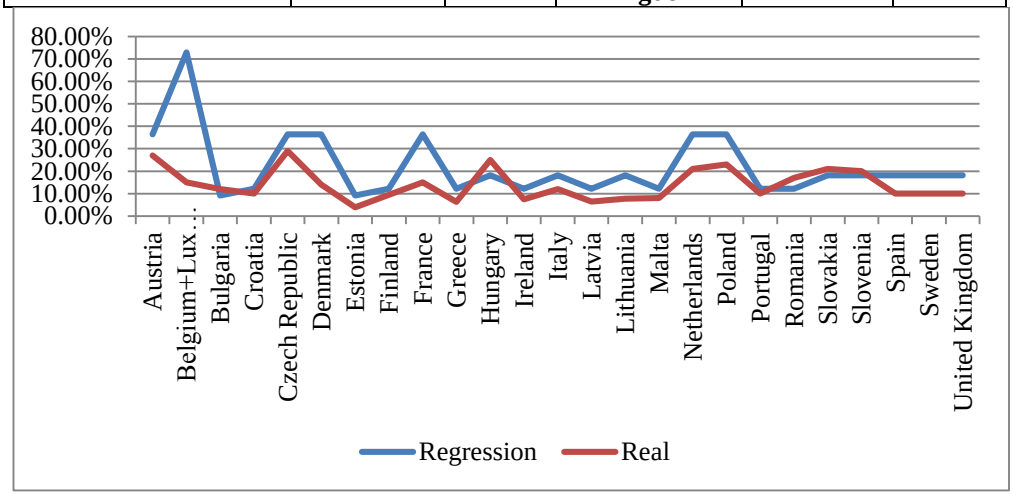

Figure 11. The relationship between exports based on distances and the real exports in 2013 in Germany (in percent)

The case of **Greece**, from Appendix A.19 is not relevant because R^2=0.0105, that is the linear regression analysis does not explain the phenomenon. Also P-Value for the dominant factor of the regression is 0.7515 that is the null hypothesis can be rejected with a very small probability (24%). In the case of **Hungary**, from Appendix A.20 we can see that is a strong link between the two groups of indicators (R^2=0.9526). The P-Value Analysis reveals for Intercept a great value (0.8302) which indicates a very weak evidence against the null hypothesis. In fact, assuming the threshold of 16% we obtain the regression in the table A.25. Therefore, finally, we have:

IM_HU(t)=0.0406EX_AT(t)+0.0135EX_BE(t)+0.0203EX_BG(t)+0.0406EX_HR(t)+ 0.0102EX_CY(t)+0.0203EX_CZ(t)+0.0135EX_DK(t)+0.0081EX_EE(t)+0.0081EX_FI(t)+ 0.0135EX_FR(t)+0.0203EX_DE(t)+0.0135EX_EL(t)+0.0081EX_IE(t)+0.0203EX_IT(t)+ 0.0102EX_LV(t)+0.0135EX_LT(t)+0.0135EX_LU(t)+0.0135EX_MT(t)+0.0135EX_NL(t)+ 0.0203EX_PL(t)+0.0081EX_PT(t)+0.0406EX_RO(t)+0.0406EX_SK(t)+0.0406EX_SI(t)+ 0.0102EX_ES(t)+0.0102EX_SE(t)+0.0102EX_UK(t)+1051.9095

A comparison of regression coefficients and percentages imports from studied countries (*Source: http://atlas.media.mit.edu/en/profile/country - column Real in Table 11*) indicates that there are not great differences (real vs. predicted imports) between countries, therefore imports of Hungary are directed by territorial proximity criterion. The average distance between real data and those from the regression is: 0.75%.

Table 11. The correlation between the coefficients of regression and the real exports of EU-countries in Hungary (in percent) in 2013

Country	Regression	Real	Country	Regression	Real
Austria	4.06%	3.50%	**Italy**	2.03%	0.84%
Belgium+Luxembourg	2.70%	0.57%	**Latvia**	1.02%	0.25%
Bulgaria	2.03%	1.20%	**Lithuania**	1.35%	0.64%
Croatia	4.06%	2.20%	**Malta**	1.35%	0.23%
Czech Republic	2.03%	2.50%	**Netherlands**	1.35%	0.66%
Denmark	1.35%	0.64%	**Poland**	2.03%	2.40%
Estonia	0.81%	0.19%	**Portugal**	0.81%	0.40%
Finland	0.81%	0.36%	**Romania**	4.06%	3.90%
France	1.35%	0.67%	**Slovakia**	4.06%	6.00%
Germany	2.03%	1.60%	**Slovenia**	4.06%	3.60%
Greece	1.35%	0.27%	**Spain**	1.02%	0.58%
Hungary	-	-	**Sweden**	1.02%	0.57%
Ireland	0.81%	0.36%	**United Kingdom**	1.02%	0.38%

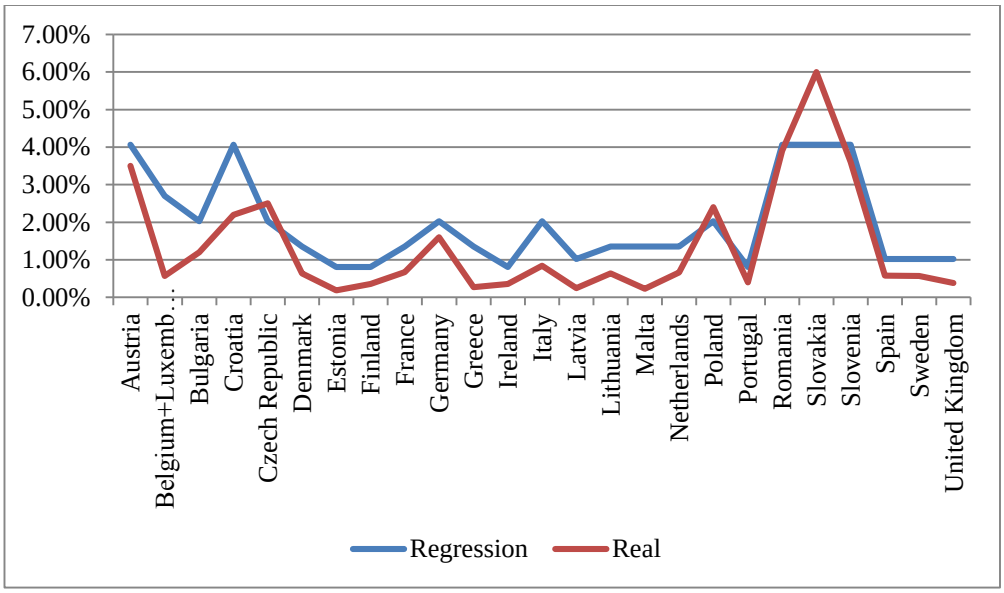

Figure 12. The relationship between exports based on distances and the real exports in 2013 in Hungary (in percent)

The case of **Ireland**, from Appendix A.21 is not relevant because R^2=0.1895, that is the linear regression analysis does not explain the phenomenon. Also P-Value for the dominant factor of the regression is 0.1572 that is the null hypothesis can be rejected with a significant probability (84%).

In the case of **Italy**, from Appendix A.22 we can see that is a weak link between the two groups of indicators (R^2=0.6116). On the other hand, P-Values Analysis reveals for both coefficients of the regression small values which indicates a strong evidence against the null hypothesis. Therefore, finally, we have:

IM_IT(t)=0.1026EX_AT(t)+0.0514EX_BE(t)+0.0514EX_BG(t)+0.0514EX_HR(t)+
0.0514EX_CY(t)+0.0514EX_CZ(t)+0.0341EX_DK(t)+0.0171EX_EE(t)+0.0205EX_FI(t)+
0.1026EX_FR(t)+0.0514EX_DE(t)+0.1026EX_EL(t)+0.0514EX_HU(t)+0.0341EX_IE(t)+
0.0205EX_LV(t)+0.0256EX_LT(t)+0.0514EX_LU(t)+0.1026EX_MT(t)+0.0341EX_NL(t)
+
0.0341EX_PL(t)+0.0341EX_PT(t)+0.0341EX_RO(t)+0.0514EX_SK(t)+0.1026EX_SI(t)+
0.0514EX_ES(t)+0.0256EX_SE(t)+0.0514EX_UK(t)+155094.5257

A comparison of regression coefficients and percentages imports from studied countries (Source: http://atlas.media.mit.edu/en/profile/country - column Real in Table 12) indicates that there are not great differences (real vs. predicted imports) between countries except cases of Croatia (14% - real vs. 5.14% - regression), Malta (3.70% - real vs. 10.26% - regression) and Romania (10% - real vs. 3.41% - regression) therefore imports of Italy are directed by territorial proximity criterion.

The average distance between real data and those from the regression is: 2.10%.

Table 12. The correlation between the coefficients of regression and the real exports of EU-countries in Italy (in percent) in 2013

Country	Regression	Real	Country	Regression	Real
Austria	10.26%	7.10%	**Italy**	-	-
Belgium+Luxembourg	10.28%	5.40%	**Latvia**	2.05%	1.10%
Bulgaria	5.14%	10.00%	**Lithuania**	2.56%	1.80%
Croatia	5.14%	14.00%	**Malta**	10.26%	3.70%
Czech Republic	5.14%	3.70%	**Netherlands**	3.41%	5.00%
Denmark	3.41%	2.60%	**Poland**	3.41%	4.50%
Estonia	1.71%	0.86%	**Portugal**	3.41%	3.30%
Finland	2.05%	2.30%	**Romania**	3.41%	10.00%
France	10.26%	6.80%	**Slovakia**	5.14%	4.90%
Germany	5.14%	4.90%	**Slovenia**	10.26%	11.00%
Greece	10.26%	8.40%	**Spain**	5.14%	7.10%
Hungary	5.14%	5.00%	**Sweden**	2.56%	2.50%
Ireland	3.41%	2.60%	**United Kingdom**	5.14%	2.70%

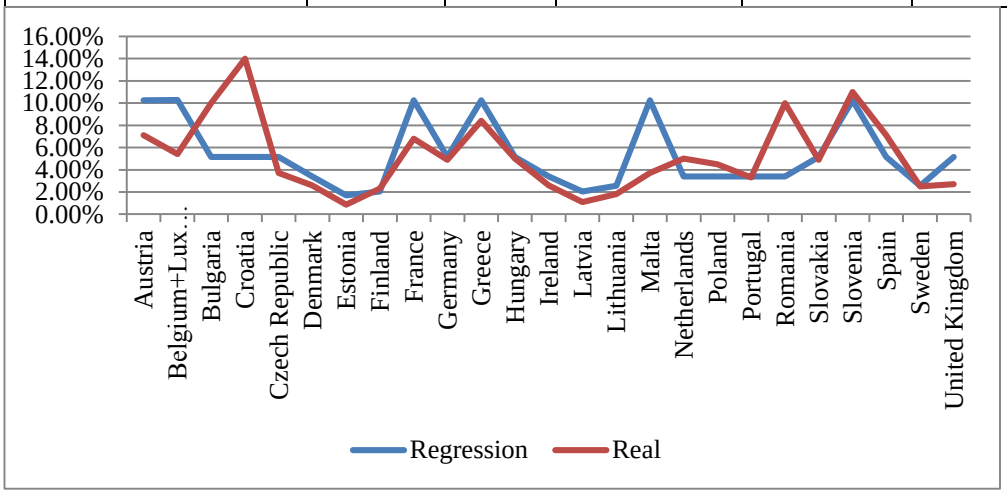

Figure 13. The relationship between exports based on distances and the real exports in 2013 in Italy (in percent)

In the case of **Latvia**, from Appendix A.23 we can see that is a strong link between the two groups of indicators (R^2=0.9299). On the other hand, P-Values Analysis reveals for both coefficients of the regression small values which indicates a strong evidence against the null hypothesis. Therefore, finally, we have:

IM_LV(t)=0.0039EX_AT(t)+0.0039EX_BE(t)+0.0026EX_BG(t)+0.0031EX_HR(t)+ 0.0022EX_CY(t)+0.0051EX_CZ(t)+0.0039EX_DK(t)+0.0155EX_EE(t)+0.0077EX_FI(t)+ 0.0039EX_FR(t)+0.0051EX_DE(t)+0.0026EX_EL(t)+0.0039EX_HU(t)+0.0026EX_IE(t)+ 0.0031EX_IT(t)+0.0155EX_LT(t)+0.0039EX_LU(t)+0.0026EX_MT(t)+0.0039EX_NL(t)+ 0.0077EX_PL(t)+0.0026EX_PT(t)+0.0031EX_RO(t)+0.0051EX_SK(t)+0.0031EX_SI(t)+ 0.0031EX_ES(t)+0.0051EX_SE(t)+0.0031EX_UK(t)-6674.8824

A comparison of regression coefficients and percentages imports from studied countries (*Source: http://atlas.media.mit.edu/en/profile/country - column Real in Table 13*) indicates that there are not great differences (real vs. predicted imports) between countries except cases of close neighborhoods: Estonia (6.70% - real vs. 1.55% - regression) and Lithuania (10% - real vs. 1.55% - regression) therefore imports of Latvia are directed by territorial proximity criterion.

The average distance between real data and those from the regression is: 0.74%.

Table 13. The correlation between the coefficients of regression and the real exports of EU-countries in Latvia (in percent) in 2013

Country	Regression	Real	Country	Regression	Real
Austria	0.39%	0.12%	**Italy**	0.31%	0.10%
Belgium+Luxembourg	0.78%	0.08%	**Latvia**	-	-
Bulgaria	0.26%	0.11%	**Lithuania**	1.55%	10.00%
Croatia	0.31%	0.05%	**Malta**	0.26%	0.01%
Czech Republic	0.51%	0.16%	**Netherlands**	0.39%	0.11%
Denmark	0.39%	0.34%	**Poland**	0.77%	0.76%
Estonia	1.55%	6.70%	**Portugal**	0.26%	0.04%
Finland	0.77%	0.92%	**Romania**	0.31%	0.04%
France	0.39%	0.05%	**Slovakia**	0.51%	0.23%
Germany	0.51%	0.12%	**Slovenia**	0.31%	0.17%
Greece	0.26%	0.05%	**Spain**	0.31%	0.07%
Hungary	0.39%	0.18%	**Sweden**	0.51%	0.33%
Ireland	0.26%	0.03%	**United Kingdom**	0.31%	0.09%

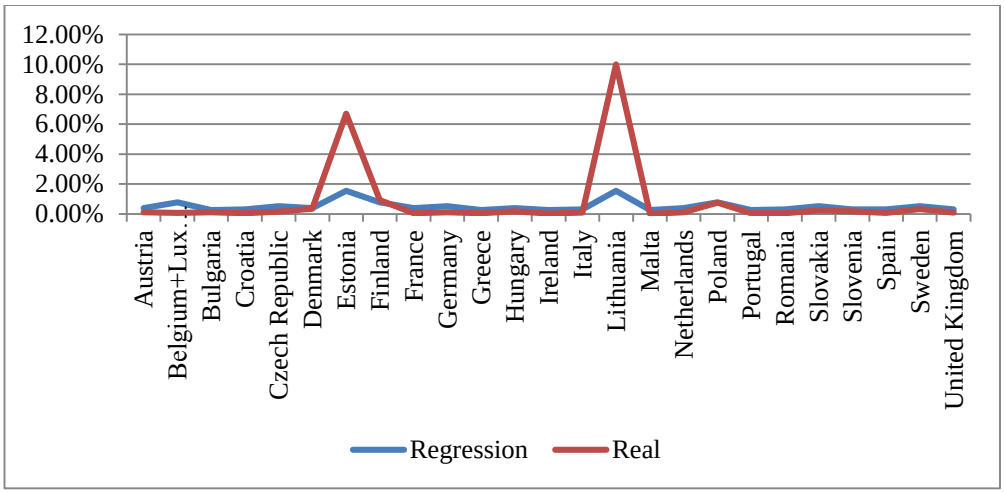

Figure 14. The relationship between exports based on distances and the real exports in 2013 in Latvia (in percent)

In the case of **Lithuania**, from Appendix A.24 we can see that is a strong link between the two groups of indicators (R^2=0.9681). On the other hand, P-Values Analysis reveals for both coefficients of the regression small values which indicates a strong evidence against the null hypothesis. Therefore, finally, we have:

IM_LT(t)=0.0079EX_AT(t)+0.0079EX_BE(t)+0.0047EX_BG(t)+0.0059EX_HR(t)+
0.0039EX_CY(t)+0.0118EX_CZ(t)+0.0079EX_DK(t)+0.0118EX_EE(t)+0.0079EX_FI(t)+
0.0079EX_FR(t)+0.0118EX_DE(t)+0.0047EX_EL(t)+0.0079EX_HU(t)+0.0047EX_IE(t)+
0.0059EX_IT(t)+0.0236EX_LV(t)+0.0079EX_LU(t)+0.0047EX_MT(t)+0.0079EX_NL(t)
+
0.0236EX_PL(t)+0.0047EX_PT(t)+0.0059EX_RO(t)+0.0118EX_SK(t)+0.0059EX_SI(t)+
0.0059EX_ES(t)+0.0059EX_SE(t)+0.0059EX_UK(t)-15820.9662

A comparison of regression coefficients and percentages imports from studied countries (Source: http://atlas.media.mit.edu/en/profile/country - column Real in Table 14) indicates that there are not great differences (real vs. predicted imports) between countries except cases of close neighborhoods: Estonia (5.10% - real vs. 1.18% - regression) and Latvia (16% - real vs. 2.36% - regression) therefore imports of Lithuania are directed by territorial proximity criterion.

The average distance between real data and those from the regression is: 1.11%.

Table 14. The correlation between the coefficients of regression and the real exports of EU-countries in Lithuania (in percent) in 2013

Country	Regression	Real	Country	Regression	Real
Austria	0.79%	0.18%	**Italy**	0.59%	0.28%
Belgium+Luxembourg	1.58%	0.30%	**Latvia**	2.36%	16.00 %
Bulgaria	0.47%	0.24%	**Lithuania**	-	-
Croatia	0.59%	0.09%	**Malta**	0.47%	0.05%
Czech Republic	1.18%	0.37%	**Netherlands**	0.79%	0.33%
Denmark	0.79%	0.57%	**Poland**	2.36%	1.60%
Estonia	1.18%	5.10%	**Portugal**	0.47%	0.09%
Finland	0.79%	0.82%	**Romania**	0.59%	0.10%
France	0.79%	0.16%	**Slovakia**	1.18%	0.23%
Germany	1.18%	0.25%	**Slovenia**	0.59%	0.36%
Greece	0.47%	0.11%	**Spain**	0.59%	0.20%
Hungary	0.79%	0.27%	**Sweden**	0.59%	0.67%
Ireland	0.47%	0.06%	**United Kingdom**	0.59%	0.17%

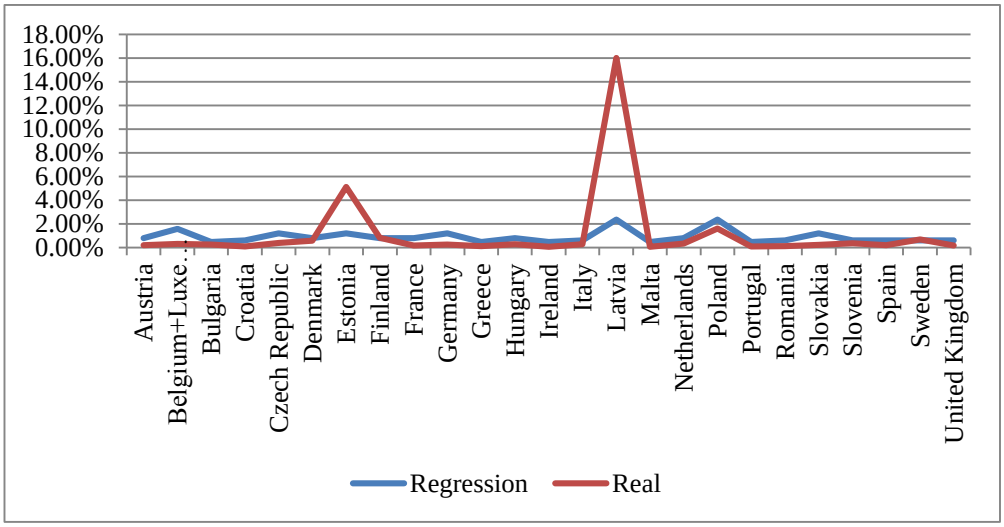

Figure 15. The relationship between exports based on distances and the real exports in 2013 in Lithuania (in percent)

In the case of **Malta**, from Appendix A.25 we can see that is a strong link between the two groups of indicators (R^2=0.8998). On the other hand, P-Values Analysis reveals for both coefficients of the regression values under 0.02 which indicates a strong evidence against the null hypothesis. Therefore, finally, we have:

IM_MT(t)=0.0018EX_AT(t)+0.0012EX_BE(t)+0.0012EX_BG(t)+0.0012EX_HR(t)+ 0.0012EX_CY(t)+0.0012EX_CZ(t)+0.0009EX_DK(t)+0.0005EX_EE(t)+0.0006EX_FI(t)+ 0.0018EX_FR(t)+0.0012EX_DE(t)+0.0018EX_EL(t)+0.0012EX_HU(t)+0.0009EX_IE(t)+ 0.0037EX_IT(t)+0.0006EX_LV(t)+0.0007EX_LT(t)+0.0012EX_LU(t)+0.0009EX_NL(t)+ 0.0009EX_PL(t)+0.0009EX_PT(t)+0.0009EX_RO(t)+0.0012EX_SK(t)+0.0018EX_SI(t)+ 0.0012EX_ES(t)+0.0007EX_SE(t)+0.0012EX_UK(t)-1786.1808

A comparison of regression coefficients and percentages imports from studied countries (*Source: http://atlas.media.mit.edu/en/profile/country - column Real in Table 15*) indicates that there are not great differences (real vs. predicted imports) between countries except cases of close neighborhoods: Croatia (0.93% - real vs. 0.12% - regression) and Greece (0.57% - real vs. 0.18% - regression) therefore imports of Malta are directed by territorial proximity criterion.

The average distance between real data and those from the regression is: 0.11%.

Table 15. The correlation between the coefficients of regression and the real exports of EU-countries in Malta (in percent) in 2013

Country	Regression	Real	Country	Regression	Real
Austria	0.18%	0.04%	**Italy**	0.37%	0.40%
Belgium+Luxembourg	0.24%	0.04%	**Latvia**	0.06%	0.03%
Bulgaria	0.12%	0.07%	**Lithuania**	0.07%	0.01%
Croatia	0.12%	0.93%	**Malta**	-	-
Czech Republic	0.12%	0.02%	**Netherlands**	0.09%	0.05%
Denmark	0.09%	0.06%	**Poland**	0.09%	0.03%
Estonia	0.05%	0.04%	**Portugal**	0.09%	0.04%
Finland	0.06%	0.01%	**Romania**	0.09%	0.06%
France	0.18%	0.14%	**Slovakia**	0.12%	0.03%
Germany	0.12%	0.03%	**Slovenia**	0.18%	0.03%
Greece	0.18%	0.57%	**Spain**	0.12%	0.08%
Hungary	0.12%	0.01%	**Sweden**	0.07%	0.15%
Ireland	0.09%	0.02%	**United Kingdom**	0.12%	0.10%

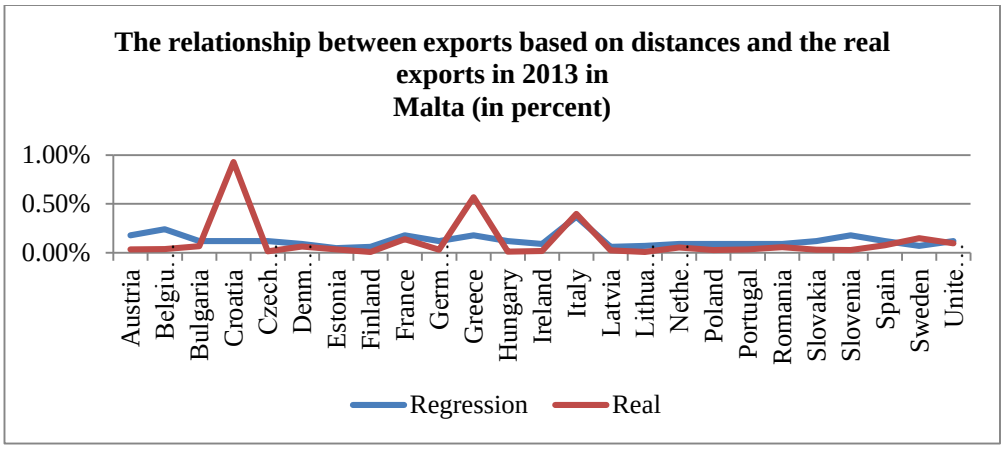

Figure 16. The relationship between exports based on distances and the real exports in 2013 in Malta (in percent)

In the case of **Netherlands**, from Appendix A.26 we can see that is a strong link between the two groups of indicators (R^2=0.9427). On the other hand, P-Values Analysis reveals for both coefficients of the regression values under 0.05 which indicates a strong evidence against the null hypothesis. Therefore, we have:

IM_NL(t)=0.0966EX_AT(t)+0.1931EX_BE(t)+0.0387EX_BG(t)+0.0484EX_HR(t)+ 0.0387EX_CY(t)+0.0966EX_CZ(t)+0.0966EX_DK(t)+0.0387EX_EE(t)+0.0484EX_FI(t)+ 0.0966EX_FR(t)+0.1931EX_DE(t)+0.0484EX_EL(t)+0.0644EX_HU(t)+0.0966EX_IE(t)+ 0.0644EX_IT(t)+0.0484EX_LV(t)+0.0644EX_LT(t)+0.0966EX_LU(t)+0.0484EX_MT(t)+ 0.0966EX_PL(t)+0.0484EX_PT(t)+0.0484EX_RO(t)+0.0644EX_SK(t)+0.0644EX_SI(t)+ 0.0644EX_ES(t)+0.0644EX_SE(t)+0.1931EX_UK(t)-85890.2647

Durbin Watson statistical analysis reveals a positive autocorrelation of errors (d=0.7106 for the limits of autocorrelation: (0,0.97)). However we will analyze the differences between the regression coefficients and the actual data, due to temporal delay which will appear later (when eliminating autoregression). In this case P-Value exceeds 0.90 therefore we shall left this regression.

A comparison of regression coefficients and percentages imports from studied countries (*Source: http://atlas.media.mit.edu/en/profile/country - column Real in Table 16*) indicates that there are many and large differences between real and predicted imports: Austria (1.60% vs. 9.66%), Belgium+Luxembourg (14% vs. 28.97%), Germany (2.80% vs. 19.31%), United Kingdom (7.9% vs. 19.31%) which is absolutely normal as a consequence of commercial traditions that have bound these countries.

Unlike the other countries analyzed so far, one can see that in general, real imports were under those provided by regression analysis, which shows a weak trade policy on dependence from proximity.

The average distance between real data and those from the regression is very large: 4.46%.

Table 16. The correlation between the coefficients of regression and the real exports of EU-countries in Netherlands (in percent) in 2013

Country	Regression	Real	Country	Regression	Real
Austria	9.66%	1.60%	**Italy**	6.44%	2.30%
Belgium+Luxembourg	28.97%	14.00%	**Latvia**	4.84%	4.40%
Bulgaria	3.87%	2.40%	**Lithuania**	6.44%	3.40%
Croatia	4.84%	1.70%	**Malta**	4.84%	1.30%
Czech Republic	9.66%	3.60%	**Netherlands**	-	-
Denmark	9.66%	5.10%	**Poland**	9.66%	4.00%
Estonia	3.87%	2.30%	**Portugal**	4.84%	4.00%
Finland	4.84%	5.80%	**Romania**	4.84%	2.80%
France	9.66%	4.10%	**Slovakia**	6.44%	2.40%
Germany	19.31%	5.80%	**Slovenia**	6.44%	1.70%
Greece	4.84%	1.90%	**Spain**	6.44%	3.10%
Hungary	6.44%	2.80%	**Sweden**	6.44%	5.40%
Ireland	9.66%	4.50%	**United Kingdom**	19.31%	7.90%

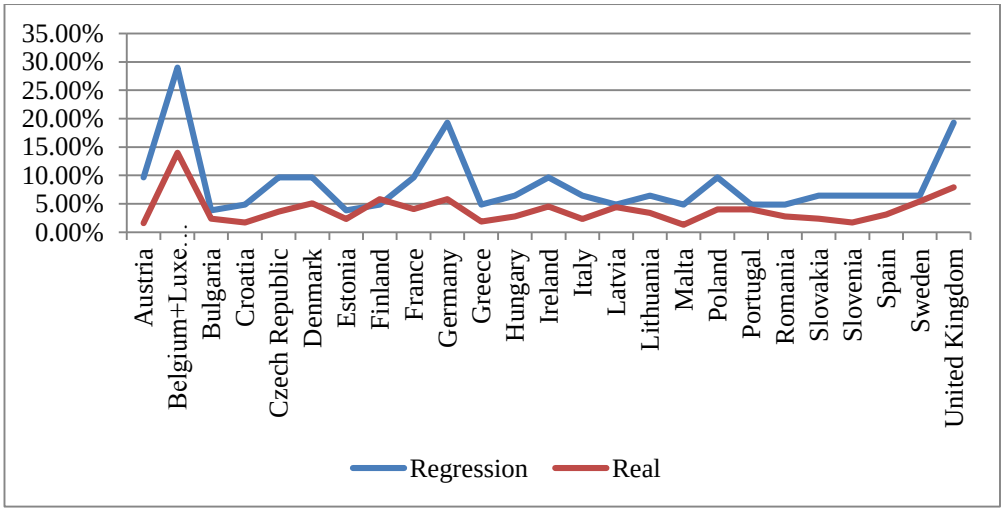

Figure 17. The relationship between exports based on distances and the real exports in 2013 in Netherlands (in percent)

In the case of **Poland**, from Appendix A.27 we can see that is a link between the two groups of indicators (R^2=0.9534), having:

IM_PL(t)=0.0473EX_AT(t)+0.0473EX_BE(t)+0.0237EX_BG(t)+0.0315EX_HR(t)+0.019 EX_CY(t)+0.0947EX_CZ(t)+0.0473EX_DK(t)+0.0315EX_EE(t)+0.0237EX_FI(t)+0.0473 EX_FR(t)+
0.0947EX_DE(t)+0.0237EX_EL(t)+0.0473EX_HU(t)+0.0237EX_IE(t)+0.0315EX_IT(t)+ 0.0473EX_LV(t)+0.0947EX_LT(t)+0.0473EX_LU(t)+0.0237EX_MT(t)+0.0473EX_NL(t) +
0.0237EX_PT(t)+0.0315EX_RO(t)+0.0947EX_SK(t)+0.0315EX_SI(t)+0.0315EX_ES(t)+ 0.0315EX_SE(t)+0.0315EX_UK(t)-84942.8966

Durbin Watson statistical analysis reveals a positive autocorrelation of errors (d=0.7820 for the limits of autocorrelation: (0,0.97)). However we will analyze the differences between the regression coefficients and the actual data, due to temporal delay which will appear later (when eliminating autoregression).

A comparison of regression coefficients and percentages imports from studied countries (*Source: http://atlas.media.mit.edu/en/profile/country - column Real in Table 17*) indicates that there are no large differences (real vs. predicted imports) except Belgium+Luxembourg (figure 18) for which real imports – 1.40% are very much under the value from regression – 9.46% and Germany – 3.3% vs. 9.47%.

For the other countries, one can see that in general, real imports were under those provided by regression analysis, which shows a trade policy based more on need and not on spatial proximity.

The average distance between real data and those from the regression is: 2.17%.

Table 17. The correlation between the coefficients of regression and the real exports of EU-countries in Poland (in percent) in 2013

Country	Regression	Real	Country	Regression	Real
Austria	4.73%	2.20%	**Italy**	3.15%	2.20%
Belgium+Luxembourg	9.46%	1.40%	**Latvia**	4.73%	3.80%
Bulgaria	2.37%	1.80%	**Lithuania**	9.47%	5.40%
Croatia	3.15%	1.20%	**Malta**	2.37%	0.46%
Czech Republic	9.47%	5.20%	**Netherlands**	4.73%	1.50%
Denmark	4.73%	2.50%	**Poland**	-	-
Estonia	3.15%	1.20%	**Portugal**	2.37%	0.94%
Finland	2.37%	2.20%	**Romania**	3.15%	2.30%
France	4.73%	1.40%	**Slovakia**	9.47%	6.30%
Germany	9.47%	3.30%	**Slovenia**	3.15%	2.70%
Greece	2.37%	1.10%	**Spain**	3.15%	1.50%

Hungary	4.73%	3.50%	**Sweden**	3.15%	2.40%
Ireland	2.37%	1.00%	**United Kingdom**	3.15%	1.20%

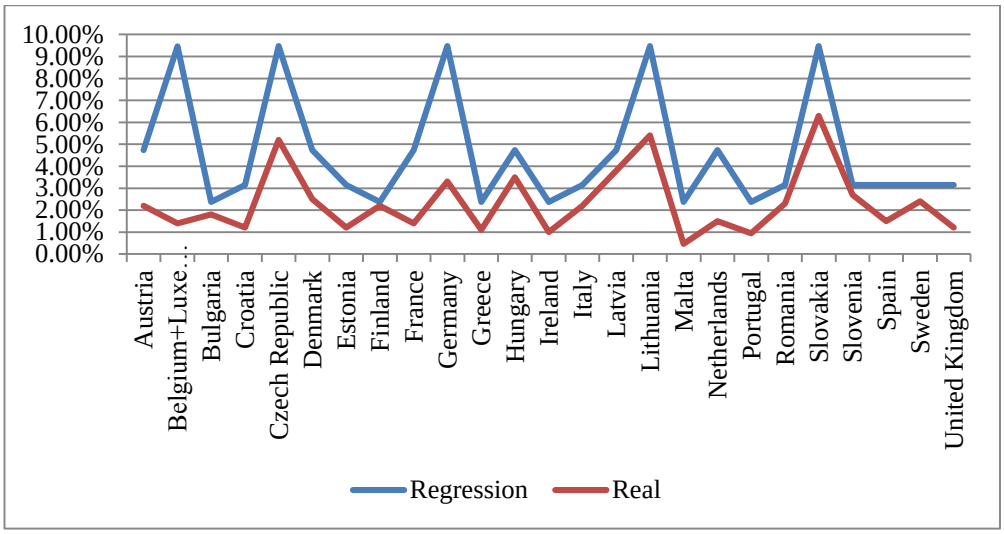

Figure 18. The relationship between exports based on distances and the real exports in 2013 in Poland (in percent)

Because in the upper analysis we have ρ - the autocorrelation coefficient of errors having value ρ=0.600743273 we shall make another regression analysis for the set of data: Imports-computed-new(t)=Imports-computed(t)-ρ·Imports-computed(t-1) and Exports-real-new(t)= Exports-real(t)-ρ·Exports-real(t-1) (table A.33). Finally, we obtain the equation of regression:

IM_PL(t)=0.6007IM_PL(t-1)+0.0404EX_AT(t)-0.0243EX_AT(t-1)+0.0404EX_BE(t)-0.0243EX_BE(t-1)+0.0202EX_BG(t)-0.0121EX_BG(t-1)+0.0269EX_HR(t)-0.0162EX_HR(t-1)+ 0.0162EX_CY(t)-0.0097EX_CY(t-1)+0.081EX_CZ(t)-0.0486EX_CZ(t-1)+0.0404EX_DK(t)-0.0243EX_DK(t-1)+0.0269EX_EE(t)-0.0162EX_EE(t-1)+0.0202EX_FI(t)-0.0121EX_FI(t-1)+ 0.0404EX_FR(t)-0.0243EX_FR(t-1)+0.081EX_DE(t)-0.0486EX_DE(t-1)+0.0202EX_EL(t)-0.0121EX_EL(t-1)+0.0404EX_HU(t)-0.0243EX_HU(t-1)+0.0202EX_IE(t)-0.0121EX_IE(t-1)+ 0.0269EX_IT(t)-0.0162EX_IT(t-1)+0.0404EX_LV(t)-0.0243EX_LV(t-1)+0.081EX_LT(t)-0.0486EX_LT(t-1)+0.0404EX_LU(t)-0.0243EX_LU(t-1)+0.0202EX_MT(t)-0.0121EX_MT(t-1)+ 0.0404EX_NL(t)-0.0243EX_NL(t-1)+0.0202EX_PT(t)-0.0121EX_PT(t-1)+0.0269EX_RO(t)-0.0162EX_RO(t-1)+0.081EX_SK(t)-

0.0486EX_SK(t-1)+0.0269EX_SI(t)-0.0162EX_SI(t-1)+ 0.0269EX_ES(t)-0.0162EX_ES(t-1)+0.0269EX_SE(t)-0.0162EX_SE(t-1)+0.0269EX_UK(t)-0.0162EX_UK(t-1)-20068.4749

In the case of **Portugal**, from Appendix A.28 we can see that is a weak link between the two groups of indicators (R^2=0.5046). On the other hand, P-Values Analysis reveals for both coefficients of the regression values under 0.05 which indicates a strong evidence against the null hypothesis. Therefore, we have:

IM_PT(t)=0.0046EX_AT(t)+0.0062EX_BE(t)+0.0037EX_BG(t)+0.0037EX_HR(t)+ 0.0037EX_CY(t)+0.0046EX_CZ(t)+0.0046EX_DK(t)+0.0027EX_EE(t)+0.0031EX_FI(t)+ 0.0093EX_FR(t)+0.0062EX_DE(t)+0.0046EX_EL(t)+0.0037EX_HU(t)+0.0046EX_IE(t)+ 0.0062EX_IT(t)+0.0031EX_LV(t)+0.0037EX_LT(t)+0.0062EX_LU(t)+0.0046EX_MT(t)+ 0.0046EX_NL(t)+0.0046EX_PL(t)+0.0031EX_RO(t)+0.0037EX_SK(t)+0.0046EX_SI(t)+ 0.0186EX_ES(t)+0.0037EX_SE(t)+0.0062EX_UK(t)+30732.5842

A comparison of regression coefficients and percentages imports from studied countries (*Source: http://atlas.media.mit.edu/en/profile/country - column Real in Table 18*) indicates that there are no large differences between real and predicted imports except the traditional partner Spain – 6.90% vs. 1.86%) which is absolutely normal as a consequence of commercial traditions that have bound these countries. In general, real imports are very close to those provided by regression analysis, which shows a strong trade policy on dependence from proximity. The average distance between real data and those from the regression is small: 0.34%.

Table 18. The correlation between the coefficients of regression and the real exports of EU-countries in Portugal (in percent) in 2013

Country	Regression	Real	Country	Regression	Real
Austria	0.46%	0.22%	**Italy**	0.62%	0.76%
Belgium+Luxembourg	1.24%	0.42%	**Latvia**	0.31%	0.07%
Bulgaria	0.37%	0.70%	**Lithuania**	0.37%	0.29%
Croatia	0.37%	0.14%	**Malta**	0.46%	0.28%
Czech Republic	0.46%	0.30%	**Netherlands**	0.46%	0.49%
Denmark	0.46%	0.32%	**Poland**	0.46%	0.34%
Estonia	0.27%	0.15%	**Portugal**	-	-
Finland	0.31%	0.27%	**Romania**	0.31%	0.36%
France	0.93%	0.84%	**Slovakia**	0.37%	0.27%
Germany	0.62%	0.57%	**Slovenia**	0.46%	0.24%
Greece	0.46%	0.50%	**Spain**	1.86%	6.90%
Hungary	0.37%	0.28%	**Sweden**	0.37%	0.34%
Ireland	0.46%	0.54%	**United Kingdom**	0.62%	0.45%

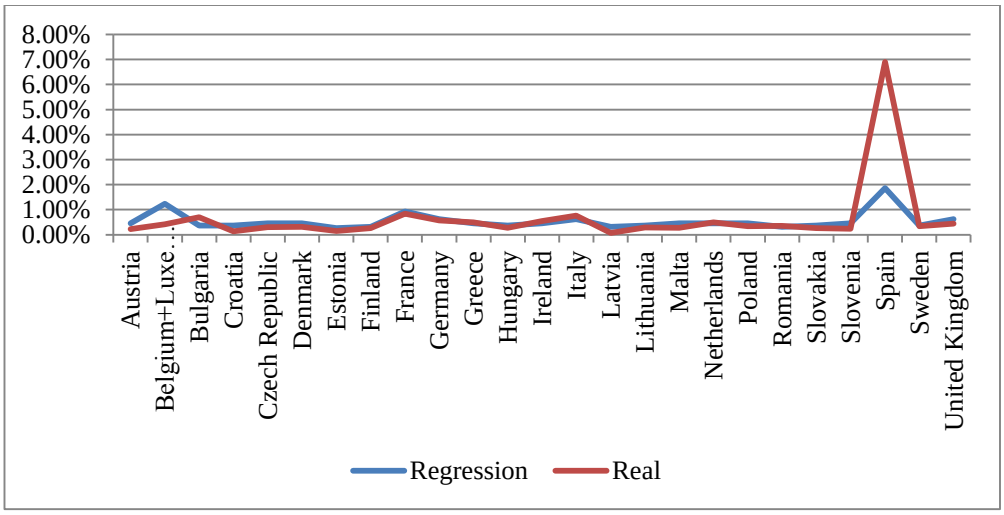

Figure 19. The relationship between exports based on distances and the real exports in 2013 in Portugal (in percent)

In the case of **Romania**, from Appendix A.29 we can see that is a strong link between the two groups of indicators (R^2=0.9088), having:

IM_RO(t)=0.029EX_AT(t)+0.0145EX_BE(t)+0.0581EX_BG(t)+0.029EX_HR(t)+0.0193EX_CY(t)+0.0193EX_CZ(t)+0.0145EX_DK(t)+0.0097EX_EE(t)+0.0097EX_FI(t)+0.0145EX_FR(t)+
0.0193EX_DE(t)+0.029EX_EL(t)+0.0581EX_HU(t)+0.0097EX_IE(t)+0.0193EX_IT(t)+
0.0116EX_LV(t)+0.0145EX_LT(t)+0.0145EX_LU(t)+0.0145EX_MT(t)+0.0145EX_NL(t)+
0.0193EX_PL(t)+0.0097EX_PT(t)+0.029EX_SK(t)+0.029EX_SI(t)+0.0116EX_ES(t)+
0.0116EX_SE(t)+0.0116EX_UK(t)-20819.1367

Durbin Watson statistical analysis reveals a positive autocorrelation of errors (d=0.7055 for the limits of autocorrelation: (0,0.97)). However we will analyze the differences between the regression coefficients and the actual data, due to temporal delay which will appear later (when eliminating autoregression).

A comparison of regression coefficients and percentages imports from studied countries (*Source: http://atlas.media.mit.edu/en/profile/country - column Real in Table 19)* indicates that there are no large differences (real vs. predicted imports) from where one can see that in general, real imports are close to those provided by regression analysis, which shows a trade policy based almost entirely on spatial proximity.

The average distance between real data and those from the regression is: 0.84%

Table 19. The correlation between the coefficients of regression and the real exports of EU-countries in Romania (in percent) in 2013

Country	Regression	Real	Country	Regression	Real
Austria	2.90%	1.70%	**Italy**	1.93%	1.50%
Belgium+Luxembourg	2.90%	0.42%	**Latvia**	1.16%	0.17%
Bulgaria	5.81%	6.60%	**Lithuania**	1.45%	0.30%
Croatia	2.90%	0.91%	**Malta**	1.45%	0.86%
Czech Republic	1.93%	1.30%	**Netherlands**	1.45%	0.48%
Denmark	1.45%	0.58%	**Poland**	1.93%	1.60%
Estonia	0.97%	0.10%	**Portugal**	0.97%	0.60%
Finland	0.97%	0.25%	**Romania**	-	-
France	1.45%	0.73%	**Slovakia**	2.90%	2.20%
Germany	1.93%	0.93%	**Slovenia**	2.90%	1.50%
Greece	2.90%	2.20%	**Spain**	1.16%	0.58%
Hungary	5.81%	5.70%	**Sweden**	1.16%	0.24%
Ireland	0.97%	0.38%	**United Kingdom**	1.16%	0.35%

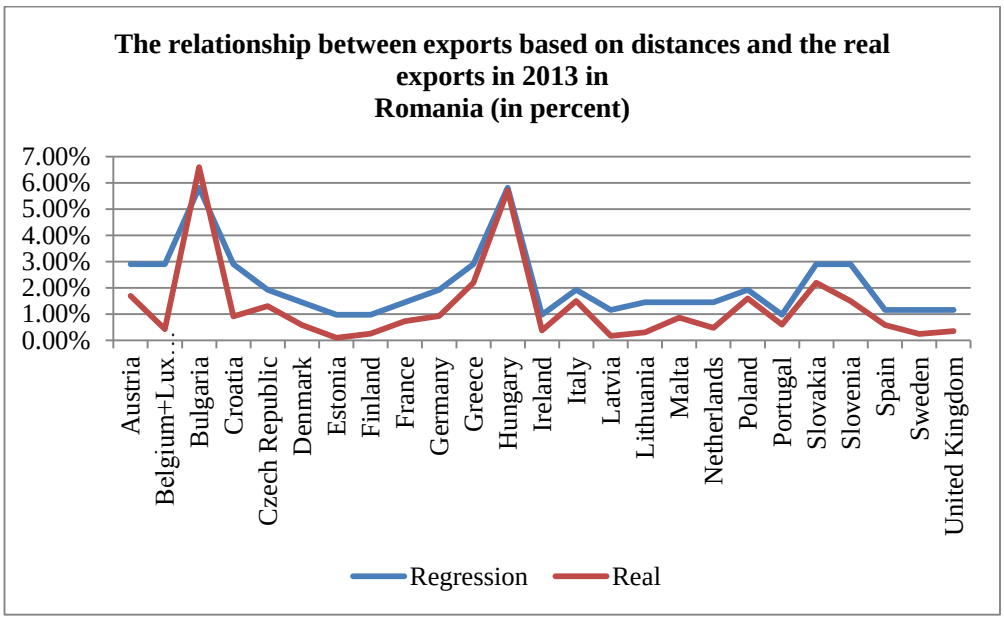

Figure 20. The relationship between exports based on distances and the real exports in 2013 in Romania (in percent)

Because in the upper analysis we have ρ - the autocorrelation coefficient of errors having value ρ=0.625714756 we shall make another regression analysis for the set of data: Imports-computed-new(t)=Imports-computed(t)-ρ·Imports-computed(t-1) and Exports-real-new(t)= Exports-real(t)-ρ·Exports-real(t-1) (table A.36). Finally, we obtain the equation of regression:

IM_RO(t)=0.6257IM_RO(t-1)+0.0305EX_AT(t)-0.0191EX_AT(t-1)+0.0152EX_BE(t)-0.0095EX_BE(t-1)+0.061EX_BG(t)-0.0382EX_BG(t-1)+0.0305EX_HR(t)-0.0191EX_HR(t-1)+ 0.0203EX_CY(t)-0.0127EX_CY(t-1)+0.0203EX_CZ(t)-0.0127EX_CZ(t-1)+0.0152EX_DK(t)-0.0095EX_DK(t-1)+0.0102EX_EE(t)-0.0064EX_EE(t-1)+0.0102EX_FI(t)-0.0064EX_FI(t-1)+ 0.0152EX_FR(t)-0.0095EX_FR(t-1)+0.0203EX_DE(t)-0.0127EX_DE(t-1)+0.0305EX_EL(t)-0.0191EX_EL(t-1)+0.061EX_HU(t)-0.0382EX_HU(t-1)+0.0102EX_IE(t)-0.0064EX_IE(t-1)+ 0.0203EX_IT(t)-0.0127EX_IT(t-1)+0.0122EX_LV(t)-0.0076EX_LV(t-1)+0.0152EX_LT(t)-0.0095EX_LT(t-1)+0.0152EX_LU(t)-0.0095EX_LU(t-1)+0.0152EX_MT(t)-0.0095EX_MT(t-1)+ 0.0152EX_NL(t)-0.0095EX_NL(t-1)+0.0203EX_PL(t)-0.0127EX_PL(t-1)+0.0102EX_PT(t)-0.0064EX_PT(t-1)+0.0305EX_SK(t)-0.0191EX_SK(t-1)+0.0305EX_SI(t)-0.0191EX_SI(t-1)+ 0.0122EX_ES(t)-0.0076EX_ES(t-1)+0.0122EX_SE(t)-0.0076EX_SE(t-1)+0.0122EX_UK(t)-0.0076EX_UK(t-1)-8887.5794

In the case of **Slovakia**, from Appendix A.30 we can see that is a strong link between the two groups of indicators (R^2=0.9606). On the other hand, P-Values Analysis reveals for both coefficients of the regression values under 0.05 which indicates a strong evidence against the null hypothesis. Therefore, we have:

IM_SK(t)=0.0486EX_AT(t)+0.0162EX_BE(t)+0.0162EX_BG(t)+0.0243EX_HR(t)+ 0.0122EX_CY(t)+0.0486EX_CZ(t)+0.0162EX_DK(t)+0.0122EX_EE(t)+0.0097EX_FI(t)+ 0.0162EX_FR(t)+0.0243EX_DE(t)+0.0162EX_EL(t)+0.0486EX_HU(t)+0.0097EX_IE(t)+ 0.0243EX_IT(t)+0.0162EX_LV(t)+0.0243EX_LT(t)+0.0162EX_LU(t)+0.0162EX_MT(t)+ 0.0162EX_NL(t)+0.0486EX_PL(t)+0.0097EX_PT(t)+0.0243EX_RO(t)+0.0243EX_SI(t)+ 0.0122EX_ES(t)+0.0122EX_SE(t)+0.0122EX_UK(t)-36725.8702

A comparison of regression coefficients and percentages imports from studied countries (*Source: http://atlas.media.mit.edu/en/profile/country - column Real in Table 20*) indicates that there are no large differences between real and predicted imports except formerly part of Czechoslovakia: Czech Republic – 7.60% vs. 4.86% which is absolutely normal as a consequence of commercial traditions that have bound these countries.

In general, real imports are under to those provided by regression analysis, which shows an insufficient correlation of imports with distances.

The average distance between real data and those from the regression is small: 1.36%.

Table 20. The correlation between the coefficients of regression and the real exports of EU-countries in Slovakia (in percent) in 2013

Country	Regression	Real	Country	Regression	Real
Austria	4.86%	1.50%	**Italy**	2.43%	0.57%
Belgium+Luxembourg	3.24%	0.26%	**Latvia**	1.62%	0.52%
Bulgaria	1.62%	0.71%	**Lithuania**	2.43%	0.31%
Croatia	2.43%	1.30%	**Malta**	1.62%	0.10%
Czech Republic	4.86%	7.60%	**Netherlands**	1.62%	0.21%
Denmark	1.62%	0.30%	**Poland**	4.86%	2.30%
Estonia	1.22%	0.34%	**Portugal**	0.97%	0.25%
Finland	0.97%	0.20%	**Romania**	2.43%	1.50%
France	1.62%	0.45%	**Slovakia**	-	-
Germany	2.43%	0.96%	**Slovenia**	2.43%	1.70%
Greece	1.62%	0.28%	**Spain**	1.22%	0.32%
Hungary	4.86%	4.20%	**Sweden**	1.22%	0.23%
Ireland	0.97%	0.16%	**United Kingdom**	1.22%	0.20%

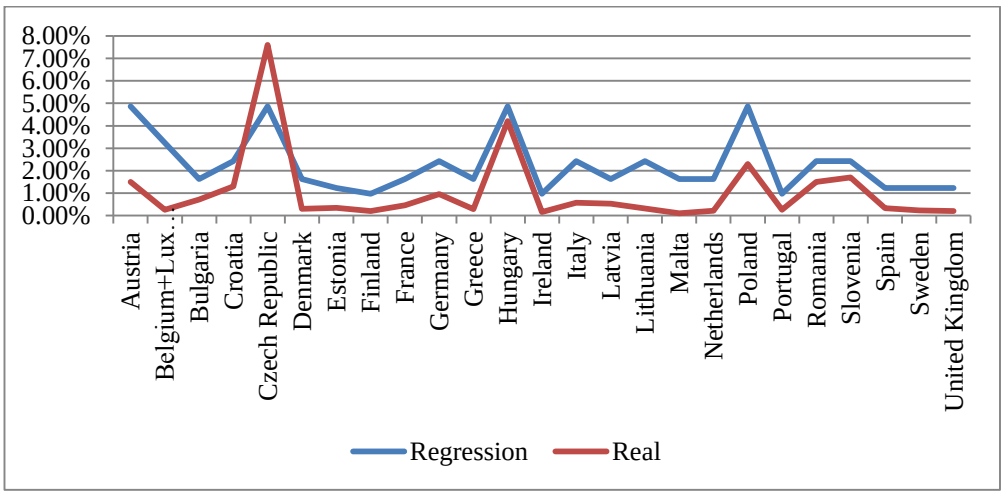

Figure 21. The relationship between exports based on distances and the real exports in 2013 in Slovakia (in percent)

Durbin Watson statistical analysis reveals a positive autocorrelation of errors (d=0.7802 for the limits of autocorrelation: (0,0.97)). Because in the analysis we have ρ - the autocorrelation coefficient of errors having value ρ=0.595858587 we

made another regression analysis for the set of data: Imports-computed-new(t)=Imports-computed(t)-ρ·Imports-computed(t-1) and Exports-real-new(t)= Exports-real(t)-ρ·Exports-real(t-1). Finally, we obtained again a positive autocorrelation of errors (d=0.8278 for the limits of autocorrelation: (0,0.93)) and a value of R^2 less than before. As a consequence we shall let the previous results as model of imports.

In the case of **Slovenia**, from Appendix A.31 we can see that is a strong link between the two groups of indicators (R^2=0.8982), having:

IM_SI(t)=0.0138EX_AT(t)+0.0046EX_BE(t)+0.0046EX_BG(t)+0.0138EX_HR(t)+
0.0046EX_CY(t)+0.0069EX_CZ(t)+0.0046EX_DK(t)+0.0023EX_EE(t)+0.0028EX_FI(t)+
0.0069EX_FR(t)+0.0069EX_DE(t)+0.0069EX_EL(t)+0.0138EX_HU(t)+0.0034EX_IE(t)+
0.0138EX_IT(t)+0.0028EX_LV(t)+0.0034EX_LT(t)+0.0046EX_LU(t)+0.0069EX_MT(t)+
0.0046EX_NL(t)+0.0046EX_PL(t)+0.0034EX_PT(t)+0.0069EX_RO(t)+0.0069EX_SK(t)+

0.0046EX_ES(t)+0.0034EX_SE(t)+0.0046EX_UK(t)-4295.3188

Durbin Watson statistical analysis reveals a positive autocorrelation of errors (d=0.5058 for the limits of autocorrelation: (0,0.97)). However we will analyze the differences between the regression coefficients and the actual data, due to temporal delay which will appear later (when eliminating autoregression).

A comparison of regression coefficients and percentages imports from studied countries (*Source: http://atlas.media.mit.edu/en/profile/country - column Real in Table 21*) indicates that there are no large differences (real vs. predicted imports) except Croatia (which were a part from the former Yugoslavia from where one can see that in general, real imports are close to those provided by regression analysis, which shows a trade policy based almost entirely on spatial proximity.

The average distance between real data and those from the regression is: 0.57 %

Table 21. The correlation between the coefficients of regression and the real exports of EU-countries in Slovenia (in percent) in 2013

Country	Regression	Real	Country	Regression	Real
Austria	1.38%	1.50%	**Italy**	1.38%	0.90%
Belgium+Luxembourg	0.92%	0.13%	**Latvia**	0.28%	0.11%
Bulgaria	0.46%	0.41%	**Lithuania**	0.34%	0.17%
Croatia	1.38%	9.50%	**Malta**	0.69%	0.22%
Czech Republic	0.69%	0.45%	**Netherlands**	0.46%	0.11%
Denmark	0.46%	0.09%	**Poland**	0.46%	0.36%
Estonia	0.23%	0.07%	**Portugal**	0.34%	0.22%
Finland	0.28%	0.10%	**Romania**	0.69%	0.41%
France	0.69%	0.22%	**Slovakia**	0.69%	0.58%

Germany	0.69%	0.35%	**Slovenia**	-	-
Greece	0.69%	0.54%	**Spain**	0.46%	0.20%
Hungary	1.38%	0.97%	**Sweden**	0.34%	0.12%
Ireland	0.34%	0.06%	**United Kingdom**	0.46%	0.09%

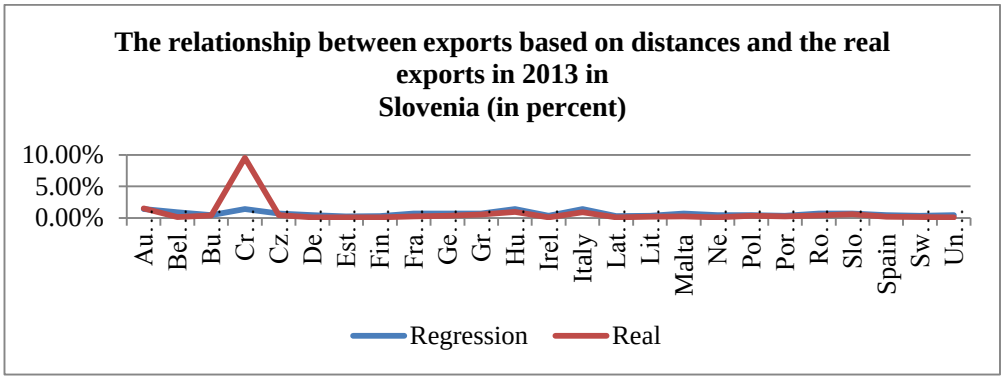

Figure 22. The relationship between exports based on distances and the real exports in 2013 in Slovenia (in percent)

Because in the upper analysis we have ρ - the autocorrelation coefficient of errors having value ρ=0,715462436 we shall make another regression analysis for the set of data:

Imports-computed-new(t)=Imports-computed(t)-ρ·Imports-computed(t-1) and Exports-real-new(t)= Exports-real(t)-ρ·Exports-real(t-1) (table A.39). Finally, we obtain the equation of regression:

IM_SI(t)=0.7155IM_SI(t-1)+0.014EX_AT(t)-0.01EX_AT(t-1)+0.0047EX_BE(t)-0.0033EX_BE(t-1)+ 0.0047EX_BG(t)-0.0033EX_BG(t-1)+0.014EX_HR(t)-0.01EX_HR(t-1)+0.0047EX_CY(t)-0.0033EX_CY(t-1)+0.007EX_CZ(t)-0.005EX_CZ(t-1)+0.0047EX_DK(t)-0.0033EX_DK(t-1)+ 0.0023EX_EE(t)-0.0017EX_EE(t-1)+0.0028EX_FI(t)-0.002EX_FI(t-1)+0.007EX_FR(t)-0.005EX_FR(t-1)+0.007EX_DE(t)-0.005EX_DE(t-1)+0.007EX_EL(t)-0.005EX_EL(t-1)+ 0.014EX_HU(t)-0.01EX_HU(t-1)+0.0035EX_IE(t)-0.0025EX_IE(t-1)+0.014EX_IT(t)-0.01EX_IT(t-1)+0.0028EX_LV(t)-0.002EX_LV(t-1)+0.0035EX_LT(t)-0.0025EX_LT(t-1)+ 0.0047EX_LU(t)-0.0033EX_LU(t-1)+0.007EX_MT(t)-0.005EX_MT(t-1)+0.0047EX_NL(t)-0.0033EX_NL(t-1)+0.0047EX_PL(t)-0.0033EX_PL(t-1)+0.0035EX_PT(t)-0.0025EX_PT(t-1)+ 0.007EX_RO(t)-0.005EX_RO(t-1)+0.007EX_SK(t)-0.005EX_SK(t-1)+0.0047EX_ES(t)-0.0033EX_ES(t-1)+0.0035EX_SE(t)-0.0025EX_SE(t-1)+0.0047EX_UK(t)-0.0033EX_UK(t-1)-1281.1717

In the case of **Spain**, from Appendix A.32 we can see that is a weak link between the two groups of indicators (R^2=0.6000). On the other hand, P-Values Analysis reveals for both coefficients of the regression values under 0.05 which indicates a strong evidence against the null hypothesis. Therefore, we have:

IM_ES(t)=0.0273EX_AT(t)+0.041EX_BE(t)+0.0205EX_BG(t)+0.0205EX_HR(t)+0.0205 EX_CY(t)+0.0273EX_CZ(t)+0.0273EX_DK(t)+0.0137EX_EE(t)+0.0164EX_FI(t)+0.082E X_FR(t)+
0.041EX_DE(t)+0.0273EX_EL(t)+0.0205EX_HU(t)+0.0273EX_IE(t)+0.041EX_IT(t)+
0.0164EX_LV(t)+0.0205EX_LT(t)+0.041EX_LU(t)+0.0273EX_MT(t)+0.0273EX_NL(t)+
0.0273EX_PL(t)+0.082EX_PT(t)+0.0164EX_RO(t)+0.0205EX_SK(t)+0.0273EX_SI(t)
+0.0205EX_SE(t)+0.041EX_UK(t)+102990.7901

A comparison of regression coefficients and percentages imports from studied countries (*Source: http://atlas.media.mit.edu/en/profile/country - column Real in Table 22*) indicates that there are no large differences between real and predicted imports except the traditional partner Portugal – 21% vs. 8.20%) which is absolutely normal as a consequence of commercial traditions that have bound these countries and also Belgium+Luxembourg (2.40% vs. 8.20%). In general, real imports are very close to those provided by regression analysis, which shows a strong trade policy on dependence from proximity. The average distance between real data and those from the regression is small: 1.42%.

Table 22. The correlation between the coefficients of regression and the real exports of EU-countries in Spain (in percent) in 2013

Country	Regression	Real	Country	Regression	Real
Austria	2.73%	1.40%	**Italy**	4.10%	4.00%
Belgium+Luxembourg	8.20%	2.40%	**Latvia**	1.64%	0.54%
Bulgaria	2.05%	2.30%	**Lithuania**	2.05%	0.97%
Croatia	2.05%	0.60%	**Malta**	2.73%	1.10%
Czech Republic	2.73%	2.30%	**Netherlands**	2.73%	2.40%
Denmark	2.73%	1.70%	**Poland**	2.73%	2.30%
Estonia	1.37%	0.60%	**Portugal**	8.20%	21.00%
Finland	1.64%	1.40%	**Romania**	1.64%	2.20%
France	8.20%	5.90%	**Slovakia**	2.05%	2.20%
Germany	4.10%	2.70%	**Slovenia**	2.73%	1.20%
Greece	2.73%	3.10%	**Spain**	-	-
Hungary	2.05%	2.40%	**Sweden**	2.05%	1.90%
Ireland	2.73%	2.80%	**United Kingdom**	4.10%	2.90%

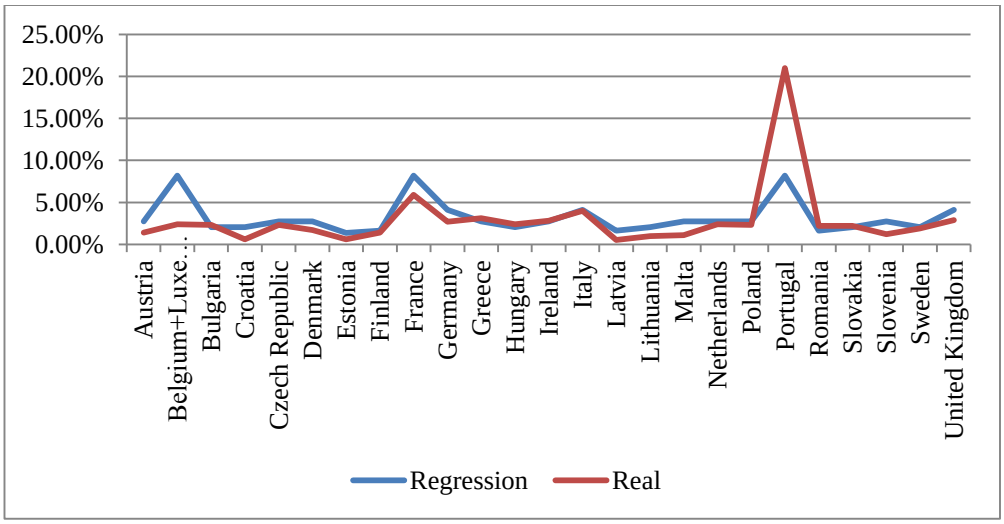

Figure 23. The relationship between exports based on distances and the real exports in 2013 in Spain (in percent)

The case of **Sweden**, from Appendix A.33 is not relevant because even R^2=0.9135, P-Value for Intercept 0.9126 that is the null hypothesis can be rejected with a very small probability (8%).

In the case of **United Kingdom**, from Appendix A.34 we can see that is a weak link between the two groups of indicators (R^2=0.4452). On the other hand, P-Values Analysis reveals for both coefficients of the regression values under 0.05 which indicates a strong evidence against the null hypothesis. Therefore, we have:

IM_UK(t)=0.0373EX_AT(t)+0.1118EX_BE(t)+0.028EX_BG(t)+0.028EX_HR(t)+0.028EX_CY(t)+
0.0373EX_CZ(t)+0.0373EX_DK(t)+0.0186EX_EE(t)+0.0224EX_FI(t)+0.1118EX_FR(t)+
0.0559EX_DE(t)+0.0373EX_EL(t)+0.028EX_HU(t)+0.1118EX_IE(t)+0.0559EX_IT(t)+
0.0224EX_LV(t)+0.028EX_LT(t)+0.0559EX_LU(t)+0.0373EX_MT(t)+0.1118EX_NL(t)+
0.0373EX_PL(t)+0.0373EX_PT(t)+0.0224EX_RO(t)+0.028EX_SK(t)+0.0373EX_SI(t)+

0.0559EX_ES(t)+0.028EX_SE(t)+202675.6936

A comparison of regression coefficients and percentages imports from studied countries (Source: http://atlas.media.mit.edu/en/profile/country - column Real in Table 23) indicates that there are no large differences between real and predicted imports except Belgium+Luxembourg (8.40% vs. 16.77%), Denmark (8.70% vs. 3.73%), France (6.90% vs. 11.18%) and Sweden (7% vs. 2.80%).

In general, real imports are over those provided by regression analysis, which shows a trade policy dependents weak from proximity.

The average distance between real data and those from the regression is small: 2.09%.

Table 23. The correlation between the coefficients of regression and the real exports of EU-countries in United Kingdom (in percent) in 2013

Country	Regression	Real	Country	Regression	Real
Austria	3.73%	2.80%	**Italy**	5.59%	5.00%
Belgium+Luxembourg	16.77%	8.40%	**Latvia**	2.24%	5.70%
Bulgaria	2.80%	2.20%	**Lithuania**	2.80%	5.20%
Croatia	2.80%	1.80%	**Malta**	3.73%	2.30%
Czech Republic	3.73%	4.90%	**Netherlands**	11.18%	9.70%
Denmark	3.73%	8.70%	**Poland**	3.73%	6.50%
Estonia	1.86%	2.50%	**Portugal**	3.73%	4.90%
Finland	2.24%	5.00%	**Romania**	2.24%	3.50%
France	11.18%	6.90%	**Slovakia**	2.80%	4.90%
Germany	5.59%	6.40%	**Slovenia**	3.73%	1.90%
Greece	3.73%	3.40%	**Spain**	5.59%	7.20%
Hungary	2.80%	4.20%	**Sweden**	2.80%	7.00%
Ireland	11.18%	14.00%	**United Kingdom**	-	-

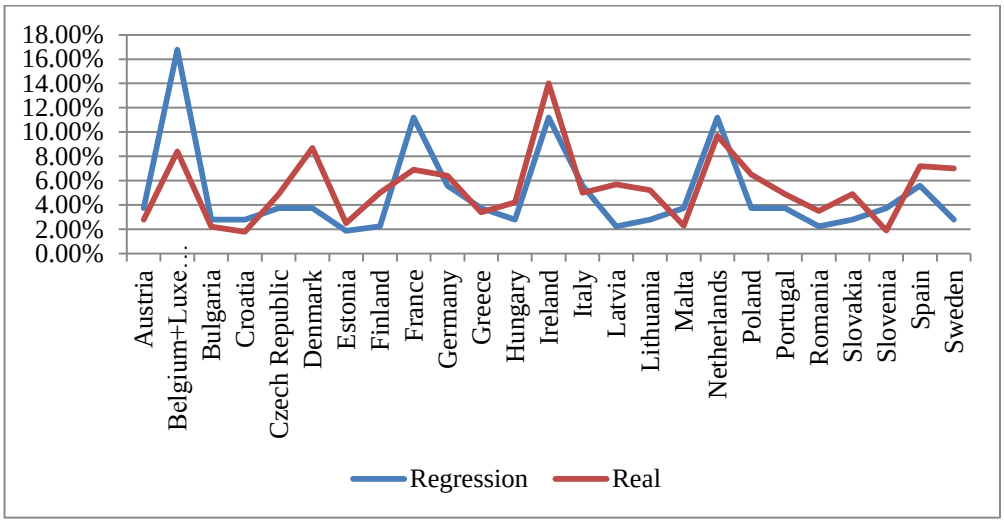

Figure 24. The relationship between exports based on distances and the real exports in 2013 in Spain (in percent)

4. Conclusions

The above analysis reveals a number of interesting issues. Overall, imports of countries that have recently joined the European Union heavily dependent on factor space which shows a certain amateurism in foreign trade, sprang but also from the weak purchasing countries receivers making imports to be dependent distances, and therefore lower costs.

On the other hand, the highly developed countries of the European Union have long commercial tradition which explains, in most cases, major differences compared to the theoretical results.

Another factor, again demonstrated numerically, is still the tight dependencies between countries that belonged to the now dismantled some states (such as the former Yugoslavia or Czechoslovakia).

5. References

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Appendix A.1

Table A.1. The matrix of the graph of edges between European Union countries ([2])

Country	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
01	0	∞	∞	∞	∞	1	∞	∞	∞	∞	1	∞	1	∞	1	∞	∞	∞	∞	∞	∞	∞	∞	1	1	∞	∞	∞
02	∞	0	∞	∞	∞	∞	∞	∞	∞	1	1	∞	∞	∞	∞	∞	∞	1	∞	1	∞	∞	∞	∞	∞	∞	∞	1
03	∞	∞	0	∞	∞	∞	∞	∞	∞	∞	∞	1	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	1	∞	∞	∞	∞	∞
04	∞	∞	∞	0	∞	∞	∞	∞	∞	∞	∞	∞	1	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	1	∞	∞	∞
05	∞	∞	∞	∞	0	∞	∞	∞	∞	∞	∞	1	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞
06	1	∞	∞	∞	∞	0	∞	∞	∞	∞	1	∞	∞	∞	∞	∞	∞	∞	∞	∞	1	∞	∞	1	∞	∞	∞	∞
07	∞	∞	∞	∞	∞	∞	0	∞	∞	∞	1	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	1	∞
08	∞	∞	∞	∞	∞	∞	∞	0	1	∞	∞	∞	∞	∞	∞	1	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞
09	∞	∞	∞	∞	∞	∞	∞	1	0	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	1	∞
10	∞	1	∞	∞	∞	∞	∞	∞	∞	0	1	∞	∞	∞	1	∞	∞	1	∞	∞	∞	∞	∞	∞	∞	1	∞	1
11	1	1	∞	∞	∞	1	1	∞	∞	1	0	∞	∞	∞	∞	∞	∞	1	∞	1	1	∞	∞	∞	∞	∞	∞	∞
12	∞	∞	1	∞	1	∞	∞	∞	∞	∞	∞	0	∞	∞	1	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞
13	1	∞	∞	1	∞	∞	∞	∞	∞	∞	∞	∞	0	∞	∞	∞	∞	∞	∞	∞	∞	∞	1	1	1	∞	∞	∞
14	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	0	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	1
15	1	∞	∞	∞	∞	∞	∞	∞	∞	1	∞	1	∞	∞	0	∞	∞	∞	1	∞	∞	∞	∞	∞	1	∞	∞	∞
16	∞	∞	∞	∞	∞	∞	∞	1	∞	∞	∞	∞	∞	∞	∞	0	1	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞
17	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	1	0	∞	∞	∞	1	∞	∞	∞	∞	∞	∞	∞
18	∞	1	∞	∞	∞	∞	∞	∞	∞	1	1	∞	∞	∞	∞	∞	∞	0	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞
19	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	1	∞	∞	∞	0	∞	∞	∞	∞	∞	∞	∞	∞	∞
20	∞	1	∞	∞	∞	∞	∞	∞	∞	∞	1	∞	∞	∞	∞	∞	∞	∞	∞	0	∞	∞	∞	∞	∞	∞	∞	1
21	∞	∞	∞	∞	∞	1	∞	∞	∞	∞	1	∞	∞	∞	∞	∞	1	∞	∞	∞	0	∞	∞	1	∞	∞	∞	∞

22	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	0	∞	∞	∞	1	∞	∞
23	∞	∞	1	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	1	∞	∞	∞	∞	∞	∞	∞	∞	∞	0	∞	∞	∞	∞	∞
24	1	∞	∞	∞	∞	1	∞	∞	∞	∞	∞	∞	∞	1	∞	∞	∞	∞	∞	∞	∞	1	∞	∞	0	∞	∞	∞	∞
25	1	∞	∞	1	∞	∞	∞	∞	∞	∞	∞	∞	∞	1	∞	1	∞	∞	∞	∞	∞	∞	∞	∞	∞	0	∞	∞	∞
26	∞	∞	∞	∞	∞	∞	∞	∞	∞	1	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	1	∞	∞	∞	0	∞	∞
27	∞	∞	∞	∞	∞	∞	1	∞	1	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	0	∞
28	∞	1	∞	∞	∞	∞	∞	∞	∞	1	∞	∞	∞	1	∞	∞	∞	∞	∞	1	∞	∞	∞	∞	∞	∞	∞	∞	0

Appendix A.2

Table A.2. The matrix of minimal distances between European Union countries ([2])

Country	**01**	**02**	**03**	**04**	**05**	**06**	**07**	**08**	**09**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**
01	0	2	3	2	3	1	2	5	4	2	1	2	1	4	1	4	3	2	2	2	2	4	2	1	1	3	3	3
02	2	0	4	4	4	2	2	5	4	1	1	3	3	2	2	4	3	1	3	1	2	3	4	3	3	2	3	1
03	3	4	0	3	2	4	5	7	7	3	4	1	2	5	2	6	5	4	3	5	4	5	1	3	3	4	6	4
04	2	4	3	0	4	3	4	6	6	3	3	3	1	5	2	5	4	4	3	4	3	5	2	2	1	4	5	4
05	3	4	2	4	0	4	5	8	7	3	4	1	4	5	2	7	6	4	3	5	5	5	3	4	3	4	6	4
06	1	2	4	3	4	0	2	4	4	2	1	3	2	4	2	3	2	2	3	2	1	4	3	1	2	3	3	3
07	2	2	5	4	5	2	0	3	2	2	1	4	3	4	3	4	3	2	4	2	2	4	4	3	3	3	1	3
08	5	5	7	6	8	4	3	0	1	5	4	7	5	7	6	1	2	5	7	5	3	7	6	4	6	6	2	6
09	4	4	7	6	7	4	2	1	0	4	3	6	5	6	5	2	3	4	6	4	4	6	6	5	5	5	1	5
10	2	1	3	3	3	2	2	5	4	0	1	2	3	2	1	4	3	1	2	2	2	2	4	3	2	1	3	1
11	1	1	4	3	4	1	1	4	3	1	0	3	2	3	2	3	2	1	3	1	1	3	3	2	2	2	2	2
12	2	3	1	3	1	3	4	7	6	2	3	0	3	4	1	6	5	3	2	4	4	4	2	3	2	3	5	3
13	1	3	2	1	4	2	3	5	5	3	2	3	0	5	2	4	3	3	3	3	2	5	1	1	1	4	4	4

14	4	2	5	5	5	4	4	7	6	2	3	4	5	0	3	6	5	3	4	2	4	4	6	5	4	3	5	1
15	1	2	2	2	2	2	3	6	5	1	2	1	2	3	0	5	4	2	1	3	3	3	3	2	1	2	4	2
16	4	4	6	5	7	3	4	1	2	4	3	6	4	6	5	0	1	4	6	4	2	6	5	3	5	5	3	5
17	3	3	5	4	6	2	3	2	3	3	2	5	3	5	4	1	0	3	5	3	1	5	4	2	4	4	4	4
18	2	1	4	4	4	2	2	5	4	1	1	3	3	3	2	4	3	0	3	2	2	3	4	3	3	2	3	2
19	2	3	3	3	3	3	4	7	6	2	3	2	3	4	1	6	5	3	0	4	4	4	4	3	2	3	5	3
20	2	1	5	4	5	2	2	5	4	2	1	4	3	2	3	4	3	2	4	0	2	4	4	3	3	3	3	1
21	2	2	4	3	5	1	2	3	4	2	1	4	2	4	3	2	1	2	4	2	0	4	3	1	3	3	3	3
22	4	3	5	5	5	4	4	7	6	2	3	4	5	4	3	6	5	3	4	4	4	0	6	5	4	1	5	3
23	2	4	1	2	3	3	4	6	6	4	3	2	1	6	3	5	4	4	4	4	3	6	0	2	2	5	5	5
24	1	3	3	2	4	1	3	4	5	3	2	3	1	5	2	3	2	3	3	3	1	5	2	0	2	4	4	4
25	1	3	3	1	3	2	3	6	5	2	2	2	1	4	1	5	4	3	2	3	3	4	2	2	0	3	4	3
26	3	2	4	4	4	3	3	6	5	1	2	3	4	3	2	5	4	2	3	3	3	1	5	4	3	0	4	2
27	3	3	6	5	6	3	1	2	1	3	2	5	4	5	4	3	4	3	5	3	3	5	5	4	4	4	0	4
28	3	1	4	4	4	3	3	6	5	1	2	3	4	1	2	5	4	2	3	1	3	3	5	4	3	2	4	0

Appendix A.3

Table A.3. The normalized matrix of strength of links between European Union countries

Country	**01**	**02**	**03**	**04**	**05**	**06**	**07**	**08**	**09**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**
01	0	0.0352	0.0235	0.0352	0.0235	0.0704	0.0352	0.0141	0.0176	0.0352	0.0704	0.0352	0.0704	0.0176	0.0704	0.0176	0.0235	0.0352	0.0352	0.0352	0.0352	0.0176	0.0352	0.0704	0.0704	0.0235	0.0235	0.0235
02	0.0389	0	0.0194	0.0194	0.0194	0.0389	0.0389	0.0155	0.0194	0.0777	0.0777	0.0259	0.0259	0.0389	0.0389	0.0194	0.0259	0.0777	0.0259	0.0777	0.0389	0.0259	0.0194	0.0259	0.0259	0.0389	0.0259	0.0777
03	0.0376	0.0282	0	0.0376	0.0564	0.0282	0.0226	0.0161	0.0161	0.0376	0.0282	0.1128	0.0564	0.0226	0.0564	0.0188	0.0226	0.0282	0.0376	0.0226	0.0282	0.0226	0.1128	0.0376	0.0376	0.0282	0.0188	0.0282

17	16	15	14	13	12	11	10	09	08	07	06	05	04
0.0348	0.0303	0.0737	0.0317	0.0819	0.0471	0.0649	0.035	0.0316	0.0268	0.0462	0.079	0.0435	0.0528
0.0348	0.0303	0.0369	0.0635	0.0273	0.0313	0.0649	0.07	0.0316	0.0268	0.0462	0.0395	0.0326	0.0264
0.0209	0.0202	0.0369	0.0254	0.0409	0.0941	0.0162	0.0233	0.0181	0.0192	0.0185	0.0197	0.0653	0.0352
0.0261	0.0242	0.0369	0.0254	0.0819	0.0313	0.0216	0.0233	0.0211	0.0224	0.0231	0.0263	0.0326	0
0.0174	0.0173	0.0369	0.0254	0.0205	0.0941	0.0162	0.0233	0.0181	0.0168	0.0185	0.0197	0	0.0264
0.0522	0.0403	0.0369	0.0317	0.0409	0.0313	0.0649	0.035	0.0316	0.0335	0.0462	0	0.0326	0.0352
0.0348	0.0303	0.0245	0.0317	0.0273	0.0235	0.0649	0.035	0.0633	0.0447	0	0.0395	0.0261	0.0264
0.0522	0.1211	0.0123	0.0182	0.0164	0.0135	0.0162	0.014	0.1265	0	0.0308	0.0197	0.0163	0.0176
0.0348	0.0605	0.0147	0.0212	0.0164	0.0157	0.0216	0.0175	0	0.1341	0.0462	0.0197	0.0187	0.0176
0.0348	0.0303	0.0737	0.0635	0.0273	0.0471	0.0649	0	0.0316	0.0268	0.0462	0.0395	0.0435	0.0352
0.0522	0.0403	0.0369	0.0423	0.0409	0.0313	0	0.07	0.0421	0.0335	0.0925	0.079	0.0326	0.0352
0.0209	0.0202	0.0737	0.0317	0.0273	0	0.0216	0.035	0.0211	0.0192	0.0231	0.0263	0.1305	0.0352
0.0348	0.0303	0.0369	0.0254	0	0.0313	0.0324	0.0233	0.0253	0.0268	0.0308	0.0395	0.0326	0.1057
0.0209	0.0202	0.0245	0	0.0164	0.0235	0.0216	0.035	0.0211	0.0192	0.0231	0.0197	0.0261	0.0211
0.0261	0.0242	0	0.0423	0.0409	0.0941	0.0324	0.07	0.0253	0.0224	0.0308	0.0395	0.0653	0.0528
0.1044	0	0.0147	0.0212	0.0205	0.0157	0.0216	0.0175	0.0633	0.1341	0.0231	0.0263	0.0187	0.0211
0	0.1211	0.0184	0.0254	0.0273	0.0188	0.0324	0.0233	0.0421	0.067	0.0308	0.0395	0.0218	0.0264
0.0348	0.0303	0.0369	0.0423	0.0273	0.0313	0.0649	0.07	0.0316	0.0268	0.0462	0.0395	0.0326	0.0264
0.0209	0.0202	0.0737	0.0317	0.0273	0.0471	0.0216	0.035	0.0211	0.0192	0.0231	0.0263	0.0435	0.0352
0.0348	0.0303	0.0245	0.0635	0.0273	0.0235	0.0649	0.035	0.0316	0.0268	0.0462	0.0395	0.0261	0.0264
0.1044	0.0605	0.0245	0.0317	0.0409	0.0235	0.0649	0.035	0.0316	0.0447	0.0462	0.079	0.0261	0.0352
0.0209	0.0202	0.0245	0.0317	0.0164	0.0235	0.0216	0.035	0.0211	0.0192	0.0231	0.0197	0.0261	0.0211
0.0261	0.0242	0.0245	0.0212	0.0819	0.0471	0.0216	0.0175	0.0211	0.0224	0.0231	0.0263	0.0435	0.0528
0.0522	0.0403	0.0369	0.0254	0.0819	0.0313	0.0324	0.0233	0.0253	0.0335	0.0308	0.079	0.0326	0.0528
0.0261	0.0242	0.0737	0.0317	0.0819	0.0471	0.0324	0.035	0.0253	0.0224	0.0308	0.0395	0.0435	0.1057
0.0261	0.0242	0.0369	0.0423	0.0205	0.0313	0.0324	0.07	0.0253	0.0224	0.0308	0.0263	0.0326	0.0264
0.0261	0.0403	0.0184	0.0254	0.0205	0.0188	0.0324	0.0233	0.1265	0.067	0.0925	0.0263	0.0218	0.0211
0.0261	0.0242	0.0369	0.127	0.0205	0.0313	0.0324	0.07	0.0253	0.0224	0.0308	0.0263	0.0326	0.0264

28	27	26	25	24	23	22	21	20	19	18
0.0298	0.0372	0.0333	0.0829	0.0844	0.0533	0.0335	0.0404	0.0447	0.0553	0.0427
0.0894	0.0372	0.0499	0.0276	0.0281	0.0266	0.0446	0.0404	0.0894	0.0368	0.0855
0.0224	0.0187	0.025	0.0276	0.0281	0.1066	0.0268	0.0202	0.0179	0.0368	0.0214
0.0224	0.0224	0.025	0.0829	0.0422	0.0533	0.0268	0.0269	0.0224	0.0368	0.0214
0.0224	0.0187	0.025	0.0276	0.0211	0.0355	0.0268	0.0162	0.0179	0.0368	0.0214
0.0298	0.0372	0.0333	0.0414	0.0844	0.0355	0.0335	0.0809	0.0447	0.0368	0.0427
0.0298	0.1118	0.0333	0.0276	0.0281	0.0266	0.0335	0.0404	0.0447	0.0277	0.0427
0.0149	0.0559	0.0167	0.0138	0.0211	0.0178	0.0192	0.0269	0.0179	0.0158	0.0171
0.0179	0.1118	0.02	0.0166	0.0169	0.0178	0.0224	0.0202	0.0224	0.0185	0.0214
0.0894	0.0372	0.0999	0.0414	0.0281	0.0266	0.067	0.0404	0.0447	0.0553	0.0855
0.0447	0.0559	0.0499	0.0414	0.0422	0.0355	0.0446	0.0809	0.0894	0.0368	0.0855
0.0298	0.0224	0.0333	0.0414	0.0281	0.0533	0.0335	0.0202	0.0224	0.0553	0.0285
0.0224	0.0279	0.025	0.0829	0.0844	0.1066	0.0268	0.0404	0.0298	0.0368	0.0285
0.0894	0.0224	0.0333	0.0207	0.0169	0.0178	0.0335	0.0202	0.0447	0.0277	0.0285
0.0447	0.0279	0.0499	0.0829	0.0422	0.0355	0.0446	0.0269	0.0298	0.1106	0.0427
0.0179	0.0372	0.02	0.0166	0.0281	0.0213	0.0224	0.0404	0.0224	0.0185	0.0214
0.0224	0.0279	0.025	0.0207	0.0422	0.0266	0.0268	0.0809	0.0298	0.0221	0.0285
0.0447	0.0372	0.0499	0.0276	0.0281	0.0266	0.0446	0.0404	0.0447	0.0368	0
0.0298	0.0224	0.0333	0.0414	0.0281	0.0266	0.0335	0.0202	0.0224	0	0.0285
0.0894	0.0372	0.0333	0.0276	0.0281	0.0266	0.0335	0.0404	0	0.0277	0.0427
0.0298	0.0372	0.0333	0.0276	0.0844	0.0355	0.0335	0	0.0447	0.0277	0.0427
0.0298	0.0224	0.0999	0.0207	0.0169	0.0178	0	0.0202	0.0224	0.0277	0.0285
0.0179	0.0224	0.02	0.0414	0.0422	0	0.0224	0.0269	0.0224	0.0277	0.0214
0.0224	0.0279	0.025	0.0414	0	0.0533	0.0268	0.0809	0.0298	0.0368	0.0285
0.0298	0.0279	0.0333	0	0.0422	0.0533	0.0335	0.0269	0.0298	0.0553	0.0285
0.0447	0.0279	0	0.0276	0.0211	0.0213	0.1341	0.0269	0.0298	0.0368	0.0427
0.0224	0	0.025	0.0207	0.0211	0.0213	0.0268	0.0269	0.0298	0.0221	0.0285
0	0.0279	0.0499	0.0276	0.0211	0.0213	0.0446	0.0269	0.0894	0.0368	0.0427

Appendix A.4

Table A.4. The exports of European Union countries (million of Euro) during 2004-2009

Country/ Year	2004	2005	2006	2007	2008	2009
Austria	94703	100468	108913	119387	123259	98214
Belgium	246563	268735	292087	314449	320805	265986
Bulgaria	7708	9156	11748	13512	15204	11699
Croatia	6218	6960	8252	9004	9585	7516
Cyprus	758	1175	1062	1017	1110	901
Czech Republic	55286	62722	75604	89382	99809	80983
Denmark	61917	68403	73716	75280	79496	67382
Estonia	4767	6201	7719	8034	8470	6487
Finland	49441	52641	61489	65688	65580	45063
France	363208	372395	394925	408327	418983	348035
Germany	730444	779989	882532	964038	983255	803012
Greece	12970	14826	17273	19392	21319	17674
Hungary	44260	50405	59936	69610	73772	59513
Ireland	84227	88137	86593	88686	85477	83114
Italy	283494	299574	332013	364744	369016	291733
Latvia	3223	4148	4902	6062	6897	5522
Lithuania	7473	9489	11263	12509	16077	11797
Luxembourg	13060	15366	18337	16734	17470	15299
Malta	2023	1928	2226	2508	2367	2049
Netherlands	287110	326555	369249	401901	433722	356962
Poland	60216	71889	88229	102259	115895	97865
Portugal	28768	31137	35640	38294	38847	31697
Romania	18753	22172	25850	29543	33679	29085
Slovak Republic	22212	25583	33340	42696	48370	40208
Slovenia	12671	15270	18501	21980	23204	18695
Spain	146728	154815	170211	184821	191388	162990
Sweden	98950	105266	117707	123179	124645	93763
United Kingdom	279266	314136	359117	322387	321028	254704

Source: http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tet00002

Table A.5. The exports of European Union countries (million of Euro) during 2010-2015

Country/ Year	2010	2011	2012	2013	2014	2015
Austria	115079	127462	129679	131885	134173	137755
Belgium	307530	341718	347089	352956	355528	359565
Bulgaria	15561	20265	20770	22272	22044	23161
Croatia	8905	9582	9629	9531	10431	11671
Cyprus	1058	1306	1354	1520	1364	1648
Czech Republic	100311	117054	122230	122185	131799	142822
Denmark	72747	80362	82090	82905	83468	85864
Estonia	8743	12003	12521	12289	12083	11627
Finland	52439	56855	56878	56048	55973	53900
France	395087	428501	442643	437439	436937	455990
Germany	949629	1058897	1090530	1088071	1125034	1198306
Greece	21140	24295	27585	27559	27221	25793
Hungary	72024	80684	80612	80945	83266	88934
Ireland	87875	90330	90888	87822	91792	110479
Italy	337407	375904	390182	390233	398870	413881
Latvia	7191	9433	10983	10893	10957	10865
Lithuania	15651	20151	23047	24545	24361	22984
Luxembourg	14180	14990	14659	13888	14485	15556
Malta	2705	3151	3308	2738	2206	2325
Netherlands	433173	479239	510098	505651	506339	511333
Poland	120483	135558	144282	154344	165715	178671
Portugal	37268	42828	45213	47303	48105	49858
Romania	37398	45284	45019	49571	52493	54609
Slovak Republic	48777	57349	62742	64566	65081	67998
Slovenia	22027	24915	25033	25615	27075	28820
Spain	191912	220223	229802	239314	244287	255441
Sweden	119597	134313	134141	126157	123921	126338
United Kingdom	313766	363915	367989	407060	380282	414761

Source: http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tet00002

Appendix A.5

Table A.6. The imports of European Union countries (million of Euro) during 2004-2009

Country/ Year	2004	2005	2006	2007	2008	2009
Austria	96256	102283	109280	118962	125301	102569
Belgium	229574	256153	280053	300298	317043	254367
Bulgaria	11577	12473	15424	21862	25094	16876
Croatia	13241	14900	17105	18833	20817	15218
Cyprus	4420	5073	5518	6286	7237	5617
Czech Republic	56216	61483	74220	86224	96572	75314
Denmark	54787	60749	68100	71526	74356	59602
Estonia	6702	8229	10711	11439	10896	7270
Finland	41353	47234	55253	59616	62402	43655
France	378506	405164	431602	460315	487350	404098
Germany	575090	624465	722112	769779	805730	664143
Greece	44998	46382	52847	60130	64857	52087
Hungary	48580	53446	62331	69730	74069	55750
Ireland	49692	55112	58233	61162	57088	44955
Italy	285064	309032	352465	373340	382050	297609
Latvia	5701	6990	9191	11180	10975	7034
Lithuania	9957	12494	15429	17813	21144	13123
Luxembourg	16115	18170	21611	20452	21864	18160
Malta	2926	2988	3430	3503	3604	3210
Netherlands	256944	292415	331979	359443	394980	317718
Poland	72087	81697	101138	120912	141966	107155
Portugal	44173	51372	56295	59927	64194	51379
Romania	26235	32538	40746	51305	57148	38948
Slovak Republic	23988	27837	35828	44229	50253	39898
Slovenia	14159	16273	19227	23038	25180	19053
Spain	207656	232109	261784	284058	286105	210222
Sweden	80723	89781	101583	111803	114565	85945
United Kingdom	378293	417359	487951	465715	447228	372581

Source: http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tet00002

Table A.7. The imports of European Union countries (million of Euro) during 2010-2015

Country/ Year	2010	2011	2012	2013	2014	2015
Austria	119943	137513	138942	138000	137001	140132
Belgium	295072	335447	341787	340093	342215	338750
Bulgaria	19245	23407	25460	25829	26118	26408
Croatia	15137	16281	16214	16581	17154	18558
Cyprus	6464	6234	5678	4754	5089	5016
Czech Republic	95536	109285	110066	108621	116203	126805
Denmark	62648	68724	71548	72728	74783	76957
Estonia	9268	12543	14077	13899	13775	13074
Finland	51899	60535	59517	58407	57769	54251
France	460941	517262	524918	513114	509299	515938
Germany	795666	901487	898857	889416	908575	946454
Greece	50741	48474	49291	46808	48004	43639
Hungary	66514	73592	74078	75379	78978	83487
Ireland	45467	47849	48855	54314	60721	66530
Italy	367390	401428	380292	361002	356939	368715
Latvia	8819	11703	13409	13451	13285	12900
Lithuania	17653	22826	24879	26208	25889	25397
Luxembourg	18713	20733	21437	20266	20099	20878
Malta	3818	4520	5135	4625	5132	5220
Netherlands	386834	426987	456824	444015	443689	456370
Poland	134306	151291	154934	156319	168366	174990
Portugal	58647	59551	56374	57013	58976	60162
Romania	46850	54943	54644	55328	58555	62976
Slovak Republic	49050	57358	60241	61543	61689	66289
Slovenia	22720	25525	24934	25129	25551	26789
Spain	246674	270550	262561	256455	270173	281298
Sweden	112352	127174	127985	120931	122132	124467
United Kingdom	445291	487905	541112	496977	519733	564190

Source: http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tet00002

Appendix A.6

Table A.8. The imports of European Union countries (million of Euro) as functions of the exports of the others during 2004-2006

Country	2004 real	2004 computed	2005 real	2005 computed	2006 real	2006 computed
Austria	96256.00	134274.34	102283.00	145144.30	109280.00	163308.32
Belgium	229574.00	168280.37	256153.00	181965.09	280053.00	203640.76
Bulgaria	11577.00	97539.61	12473.00	105496.59	15424.00	117953.41
Croatia	13241.00	104536.66	14900.00	113249.71	17105.00	127103.55
Cyprus	4420.00	109430.71	5073.00	118065.42	5518.00	131799.06
Czech Republic	56216.00	142231.31	61483.00	153721.18	74220.00	172523.57
Denmark	54787.00	159185.12	60749.00	171662.41	68100.00	192578.86
Estonia	6702.00	94182.42	8229.00	102068.89	10711.00	114758.79
Finland	41353.00	107039.52	47234.00	115847.36	55253.00	129609.59
France	378506.00	149152.16	405164.00	161945.60	431602.00	181850.19
Germany	575090.00	110371.47	624465.00	120132.94	722112.00	133499.08
Greece	44998.00	114109.28	46382.00	122738.43	52847.00	136750.83
Hungary	48580.00	99897.71	53446.00	108217.10	62331.00	121529.75
Ireland	49692.00	158847.80	55112.00	172900.92	58233.00	193624.52
Italy	285064.00	109119.50	309032.00	117461.56	352465.00	130580.83
Latvia	5701.00	99156.86	6990.00	107724.98	9191.00	121202.89
Lithuania	9957.00	114355.48	12494.00	124279.42	15429.00	140010.25
Luxembourg	16115.00	179623.09	18170.00	193138.27	21611.00	214993.46
Malta	2926.00	133613.97	2988.00	143637.64	3430.00	159947.50
Netherlands	256944.00	166365.41	292415.00	179651.26	331979.00	200940.53
Poland	72087.00	137614.28	81697.00	148635.53	101138.00	166851.64
Portugal	44173.00	142468.25	51372.00	153135.77	56295.00	170200.75
Romania	26235.00	93921.66	32538.00	101949.70	40746.00	114738.17
Slovak Republic	23988.00	108144.62	27837.00	117494.07	35828.00	132253.33
Slovenia	14159.00	121353.61	16273.00	130722.12	19227.00	146080.18
Spain	207656.00	145190.29	232109.00	155900.29	261784.00	173067.89
Sweden	80723.00	121133.34	89781.00	131094.94	101583.00	146826.96

United Kingdom	378293.00	155518.68	417359.00	167345.76	487951.00	184624.67

Table A.9. The imports of European Union countries (million of Euro) as functions of the exports of the others during 2007-2009

Country	2007 real	2007 computed	2008 real	2008 computed	2009 real	2009 computed
Austria	118962.00	176907.67	125301.00	182930.94	102569.00	149219.17
Belgium	300298.00	215163.02	317043.00	222080.13	254367.00	181641.42
Bulgaria	21862.00	126567.68	25094.00	131005.61	16876.00	107036.55
Croatia	18833.00	137148.87	20817.00	142058.14	15218.00	115848.48
Cyprus	6286.00	141032.66	7237.00	145597.14	5617.00	118779.95
Czech Republic	86224.00	186189.03	96572.00	192543.30	75314.00	157406.40
Denmark	71526.00	207068.28	74356.00	213454.28	59602.00	173774.68
Estonia	11439.00	123046.13	10896.00	127368.57	7270.00	102815.36
Finland	59616.00	138432.60	62402.00	143034.45	43655.00	116305.01
France	460315.00	193481.21	487350.00	198730.65	404098.00	162209.70
Germany	769779.00	142111.11	805730.00	148378.11	664143.00	121704.74
Greece	60130.00	146487.20	64857.00	150842.99	52087.00	122742.87
Hungary	69730.00	131484.30	74069.00	136498.92	55750.00	111404.33
Ireland	61162.00	201134.69	57088.00	207046.45	44955.00	168527.84
Italy	373340.00	138628.06	382050.00	143280.52	297609.00	117638.95
Latvia	11180.00	130242.39	10975.00	135292.63	7034.00	110066.30
Lithuania	17813.00	151113.59	21144.00	157097.81	13123.00	128578.65
Luxembourg	20452.00	229857.47	21864.00	236687.49	18160.00	193862.77
Malta	3503.00	171267.85	3604.00	176259.09	3210.00	143440.19
Netherlands	359443.00	211995.73	394980.00	216980.09	317718.00	177363.49
Poland	120912.00	179959.47	141966.00	186118.49	107155.00	152032.23
Portugal	59927.00	181101.41	64194.00	186714.92	51379.00	153424.26
Romania	51305.00	124088.28	57148.00	128751.78	38948.00	104921.34

Slovak Republic	44229.00	143385.23	50253.00	149224.56	39898.00	121732.08
Slovenia	23038.00	157337.52	25180.00	162381.38	19053.00	132118.07
Spain	284058.00	183146.81	286105.00	188383.85	210222.00	154049.35
Sweden	111803.00	157248.38	114565.00	162512.64	85945.00	132519.16
United Kingdom	465715.00	198856.54	447228.00	205855.63	372581.00	170066.39

Table A.10. The imports of European Union countries (million of Euro) as functions of the exports of the others during 2010-2012

Country	2010 real	2010 computed	2011 real	2011 computed	2012 real	2012 computed
Austria	119943.00	176301.76	137513.00	197272.02	138942.00	203979.11
Belgium	295072.00	214825.56	335447.00	239858.73	341787.00	248155.45
Bulgaria	19245.00	126358.33	23407.00	141589.04	25460.00	146278.39
Croatia	15137.00	136908.53	16281.00	153319.18	16214.00	158237.62
Cyprus	6464.00	139953.11	6234.00	156656.90	5678.00	162000.26
Czech Republic	95536.00	185918.34	109285.00	207610.16	110066.00	214684.39
Denmark	62648.00	206074.27	68724.00	230148.30	71548.00	237437.56
Estonia	9268.00	121928.77	12543.00	136457.66	14077.00	140887.27
Finland	51899.00	138251.06	60535.00	154936.31	59517.00	159716.34
France	460941.00	191839.00	517262.00	215338.68	524918.00	222024.95
Germany	795666.00	143395.27	901487.00	159964.35	898857.00	165724.24
Greece	50741.00	144347.37	48474.00	161491.27	49291.00	166685.95
Hungary	66514.00	131824.11	73592.00	147788.28	74078.00	152822.99
Ireland	45467.00	200087.12	47849.00	224617.18	48855.00	231677.47
Italy	367390.00	138454.59	401428.00	154553.68	380292.00	159445.94
Latvia	8819.00	130629.93	11703.00	146544.07	13409.00	151627.72
Lithuania	17653.00	152392.09	22826.00	170611.14	24879.00	176657.57
Luxembourg	18713.00	228154.77	20733.00	254390.36	21437.00	262500.10
Malta	3818.00	168470.98	4520.00	188193.60	5135.00	194442.21
Netherlands	386834.00	209184.44	426987.00	234304.69	456824.00	240551.39
Poland	134306.00	179769.32	151291.00	201255.02	154934.00	208042.68

Portugal	58647.00	180518.30	59551.00	202036.13	56374.00	208762.94
Romania	46850.00	124211.70	54943.00	139186.32	54644.00	143787.68
Slovak Republic	49050.00	144352.39	57358.00	161699.97	60241.00	167065.44
Slovenia	22720.00	155682.97	25525.00	173990.57	24934.00	179642.25
Spain	246674.00	180736.99	270550.00	201207.35	262561.00	207614.22
Sweden	112352.00	155738.58	127174.00	173854.84	127985.00	179526.99
United Kingdom	445291.00	198967.23	487905.00	220410.04	541112.00	228362.66

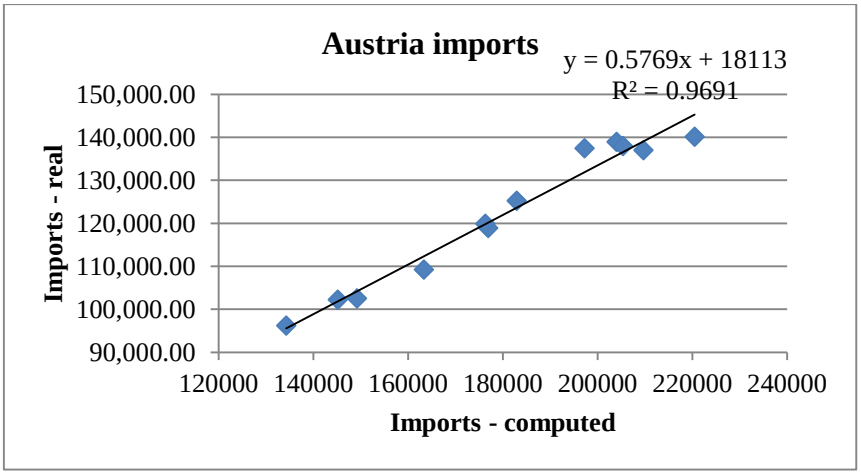
Table A.11. The imports of European Union countries (million of Euro) as functions of the exports of the others during 2013-2015

Country	2013 real	2013 computed	2014 real	2014 computed	2015 real	2015 computed
Austria	138000.00	205349.42	137001.00	209683.58	140132.00	220485.61
Belgium	340093.00	250989.30	342215.00	253562.71	338750.00	267145.90
Bulgaria	25829.00	148260.27	26118.00	150511.44	26408.00	157623.03
Croatia	16581.00	160060.43	17154.00	162783.82	18558.00	170843.60
Cyprus	4754.00	163881.80	5089.00	166062.30	5016.00	173848.59
Czech Republic	108621.00	216712.55	116203.00	220918.33	126805.00	232016.96
Denmark	72728.00	238504.13	74783.00	242830.66	76957.00	255029.18
Estonia	13899.00	141942.38	13775.00	143994.51	13074.00	150277.17
Finland	58407.00	160315.50	57769.00	162367.68	54251.00	169876.07
France	513114.00	225875.98	509299.00	228879.24	515938.00	240843.43
Germany	889416.00	167794.77	908575.00	169350.65	946454.00	175974.53
Greece	46808.00	168576.34	48004.00	170970.21	43639.00	179240.17
Hungary	75379.00	154661.07	78978.00	157694.35	83487.00	165352.31
Ireland	54314.00	237148.90	60721.00	236969.08	66530.00	248703.99
Italy	361002.00	161359.26	356939.00	163139.61	368715.00	171269.81
Latvia	13451.00	153254.29	13285.00	155837.21	12900.00	163126.93
Lithuania	26208.00	178774.20	25889.00	182519.48	25397.00	191946.03
Luxembourg	20266.00	264745.82	20099.00	268802.53	20878.00	282040.33
Malta	4625.00	196446.34	5132.00	199219.80	5220.00	208695.82
Netherlands	444015.00	244839.33	443689.00	247761.74	456370.00	262001.60

Poland	156319.00	209263.92	168366.00	213198.20	174990.00	223979.93
Portugal	57013.00	211739.86	58976.00	214414.45	60162.00	225020.11
Romania	55328.00	145250.28	58555.00	147743.20	62976.00	155037.36
Slovak Republic	61543.00	169041.84	61689.00	172986.95	66289.00	181873.40
Slovenia	25129.00	181301.13	25551.00	184356.69	26789.00	193306.57
Spain	256455.00	209570.21	270173.00	211744.11	281298.00	222302.06
Sweden	120931.00	181227.64	122132.00	184243.03	124467.00	192927.63
United Kingdom	496977.00	228483.51	519733.00	232194.00	414761.00	242093.07

Appendix A.7

Table A.12. The regression analysis of the real imports of Austria in function of exports of the other EU countries (million of Euro)



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.984434543
R Square	0.969111369
Adjusted R Square	0.966022506
Standard Error	3019.820038

Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	2861127147	2861127147	313.743714	7.01067E-09
Residual	10	91193130.6	9119313.06		
Total	11	2952320278			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	18112.54238	5939.687936	3.04940976	0.01226406	4878.092921	31346.9918
X Variable 1	0.576865784	0.032567713	17.7128121	7.0107E-09	0.504300397	0.64943117

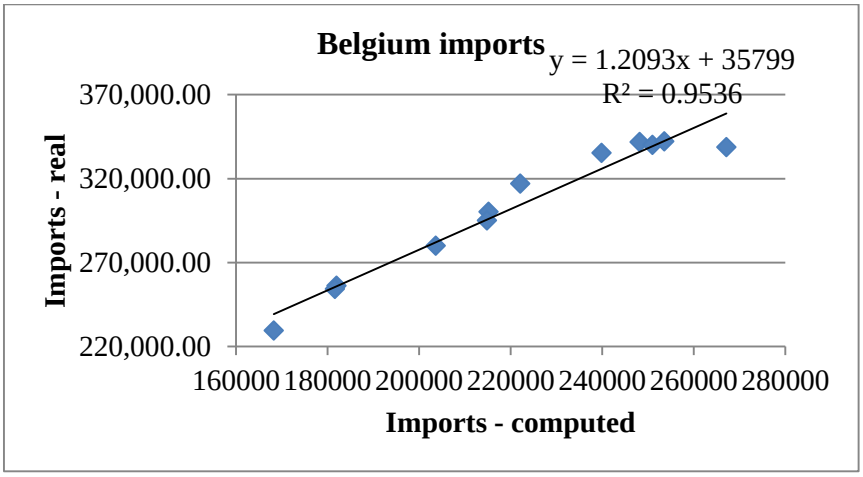
RESIDUAL OUTPUT DURBIN-WATSON STATISTIC: 1.078798

Observation	Predicted Y	Residuals
1	95570.81475	685.1852481
2	101841.3227	441.6772541
3	112319.5244	-3039.524378
4	120164.5241	-1202.524073
5	123639.1424	1661.857558
6	104191.9758	-1622.975822
7	119814.9953	128.0046736
8	131912.0208	5600.979205
9	135781.1115	3160.88847

		6
10	136571.5965	1428.403524
11	139071.8251	-2070.825081
12	145303.1466	-5171.146583

Appendix A.8

Table A.13. The regression analysis of the real imports of Belgium in function of exports of the other EU countries (million of Euro)



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.976537421
R Square	0.953625335
Adjusted R Square	0.948987869
Standard Error	9006.561858
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	16680730715	16680730715	205.6349828	5.38357E-08
Residual	10	811181565	81118156.5		
Total	11	17491912280			

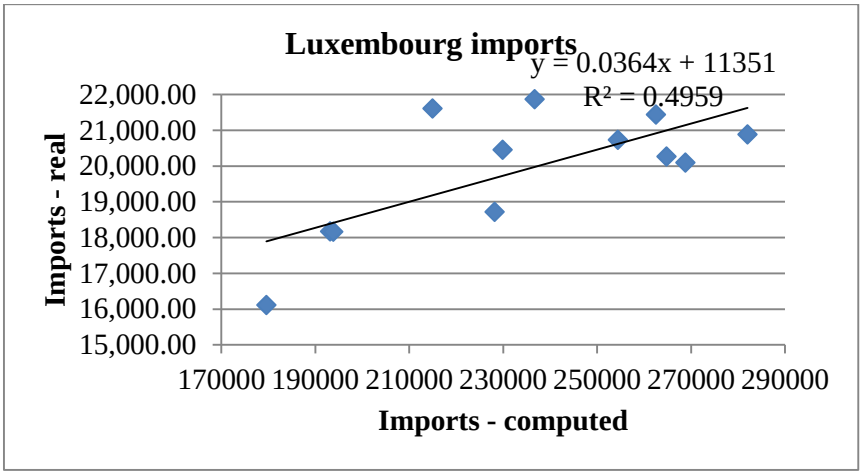
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 91.0%*	*Upper 91.0%*
Intercept	35798.97447	18784.18168	1.905804314	0.085796996	545.303395	71052.64555
X Variable 1	1.209252484	0.084327357	14.33997848	5.38357E-08	1.05098906	1.367515907

RESIDUAL OUTPUT DURBIN-WATSON STATISTIC: 1.1645678

Observation	Predicted Y	Residuals
1	239292.4299	-9718.429862
2	255840.7115	312.2884885
3	282052.0693	-1999.069296
4	295985.3908	4312.609181
5	304349.9233	12693.07673
6	255449.3128	-1082.31276
7	295577.3165	-505.3164761
8	325848.7395	9598.260525
9	335881.5687	5905.431258
10	339308.4089	784.5911073
11	342420.3113	-205.3113269
12	358845.8176	-20095.81757

Appendix A.9

Table A.14. The regression analysis of the real imports of Luxembourg in function of exports of the other EU countries (million of Euro)



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.704218547
R Square	0.495923762
Adjusted R Square	0.445516138
Standard Error	1290.21588
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	16377343.49	16377343.49	9.838268979	0.010571103
Residual	10	16646570.17	1664657.017		
Total	11	33023913.67			

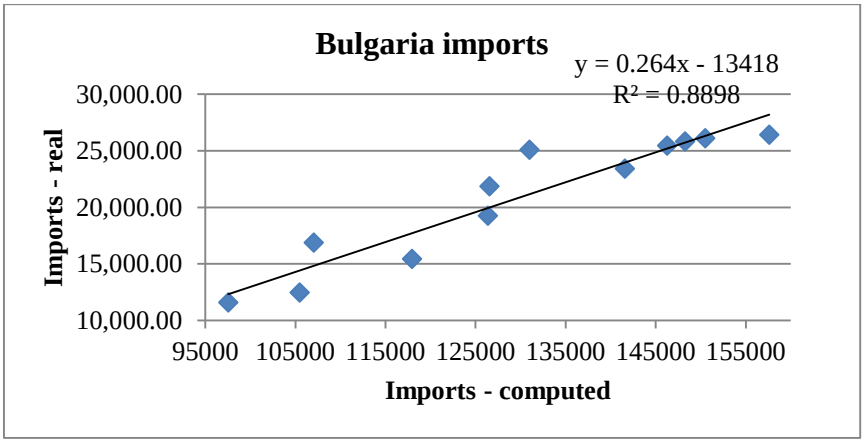
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95.0%*	*Upper 95.0%*
Intercept	11351.04349	2742.928742	4.138293247	0.002017319	5239.417391	17462.66959
X Variable 1	0.036416123	0.011610057	3.136601502	0.010571103	0.010547303	0.062284943

RESIDUAL OUTPUT		DURBIN-WATSON STATISTIC:	1.310979289

Observation	Predicted Y	Residuals
1	17892.22008	-1777.220077
2	18384.39054	-214.3905378
3	19180.27183	2430.728169
4	19721.56145	730.4385486
5	19970.2843	1893.715698
6	18410.77402	-250.7740191
7	19659.55572	-946.5557183
8	20614.9542	118.0458021
9	20910.27949	526.7205106
10	20992.05991	-726.0599057
11	21139.78956	-1040.789557
12	21621.85891	-743.8589138

Appendix A.10

Table A.15. The regression analysis of the real imports of Bulgaria in function of exports of the other EU countries (million of Euro)



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.943277059
R Square	0.889771661
Adjusted R Square	0.878748771
Standard Error	1919.381011
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	297377064.3	297377064.3	80.72073019	4.20279E-06
Residual	10	36840234.67	3684023.467		
Total	11	334217298.9			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95.0%*	*Upper 95.0%*

Intercept	-13417.99393	3850.251515	-3.484965561	0.005872231	-21996.88892	-4839.098939
X Variable 1	0.263965853	0.029380231	8.984471614	4.20279E-06	0.198502619	0.329429088

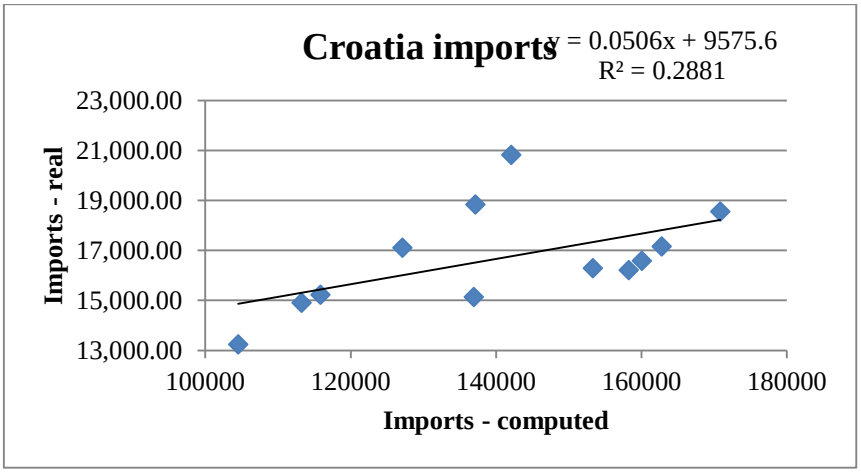
RESIDUAL OUTPUT

DURBIN-WATSON STATISTIC: 1.018084921

Observation	Predicted Y	Residuals
1	12329.13246	-752.1324629
2	14429.50348	-1956.503479
3	17717.6786	-2293.678601
4	19991.55173	1870.448268
5	21163.01371	3930.986288
6	14836.00033	2039.999666
7	19936.29048	-691.2904811
8	23956.67784	-549.6778438
9	25194.50612	265.4938816
10	25717.65476	111.3452361
11	26311.88677	-193.886774
12	28189.1037	-1781.103697

Appendix A.11

Table A.16. The regression analysis of the real imports of Croatia in function of exports of the other EU countries (million of Euro)



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.536778481
R Square	0.288131137
Adjusted R Square	0.216944251
Standard Error	1801.31873
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	13133223.23	13133223.23	4.047531119	0.071952578
Residual	10	32447491.68	3244749.168		
Total	11	45580714.92			

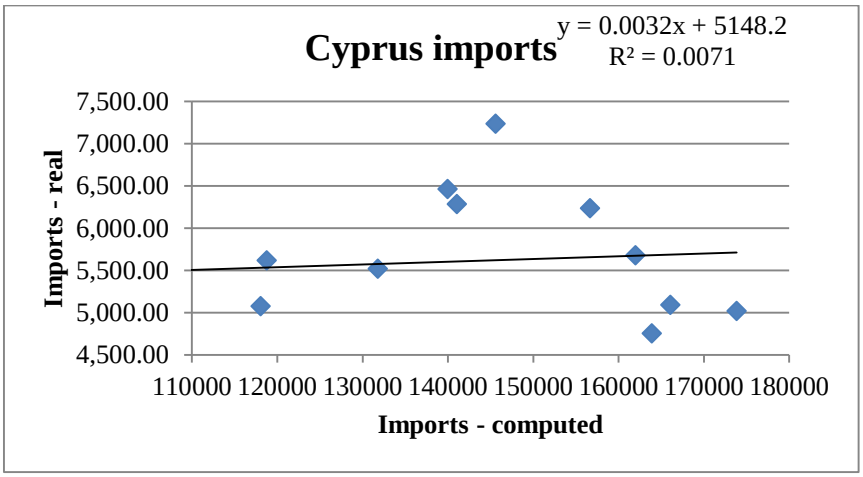
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 92.0%*	*Upper 92.0%*
Intercept	9575.555906	3564.424956	2.686423764	0.022839479	2631.701543	16519.41027
X Variable 1	0.050610784	0.02515637	2.011847688	0.071952578	0.001603674	0.099617895

RESIDUAL OUTPUT DURBIN-WATSON STATISTIC: 0.90205392

Observation	Predicted Y	Residuals
1	14866.23827	-1625.23827
2	15307.21257	-407.2125655
3	16008.36628	1096.633725
4	16516.7678	2316.2322
5	16765.22981	4051.770194
6	15438.73835	-220.7383537
7	16504.604	-1367.604004
8	17335.15987	-1054.159874
9	17584.08598	-1370.085981
10	17676.33982	-1095.339824
11	17814.17273	-660.1727287
12	18222.08452	335.9154832

Appendix A.12

Table A.17. The regression analysis of the real imports of Cyprus in function of exports of the other EU countries (million of Euro)



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.084453965
R Square	0.007132472
Adjusted R Square	-0.092154281
Standard Error	851.1760671
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	52046.02816	52046.02816	0.071837099	0.794127937
Residual	10	7245006.972	724500.6972		
Total	11	7297053			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 20.0%*	*Upper 20.0%*
Intercept	5148.213658	1760.676501	2.923997484	0.015196114	4690.112343	5606.314973
X Variable 1	0.003246672	0.012113523	0.268024437	0.794127937	9.49653E-05	0.006398475

RESIDUAL OUTPUT

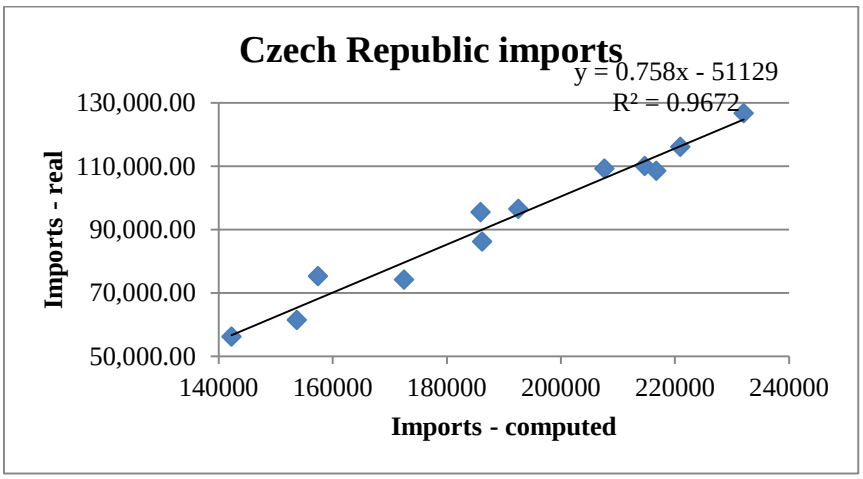
DURBIN-WATSON STATISTIC: 0.872241119

Observation	Predicted Y	Residuals
1	5503.504554	-1083.504554
2	5531.539042	-458.5390418
3	5576.1283	-

	28	58.12832824
4	5606.107244	679.8927561
5	5620.926833	1616.073167
6	5533.858921	83.14107918
7	5602.602247	861.3977529
8	5656.834779	577.1652205
9	5674.183174	3.816825671
10	5680.292008	-926.2920083
11	5687.371482	-598.3714816
12	5712.651387	-696.6513867

Appendix A.13

Table A.18. The regression analysis of the real imports of Czech Republic in function of exports of the other EU countries (million of Euro)



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.972156908
R Square	0.945089055
Adjusted R Square	0.939597956
Standard Error	5524.728906
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	5253343006	5253343006	172.113055	1.2577E-07
Residual	10	305226294.8	30522629.48		
Total	11	555856930			

1

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-59893.965	11766.2755	-5.09030789	0.000470641	-86110.86058	-33677.06942
X Variable 1	0.837836299	0.063863434	13.11918652	1.2577E-07	0.695539701	0.980132897

RESIDUAL OUTPUT

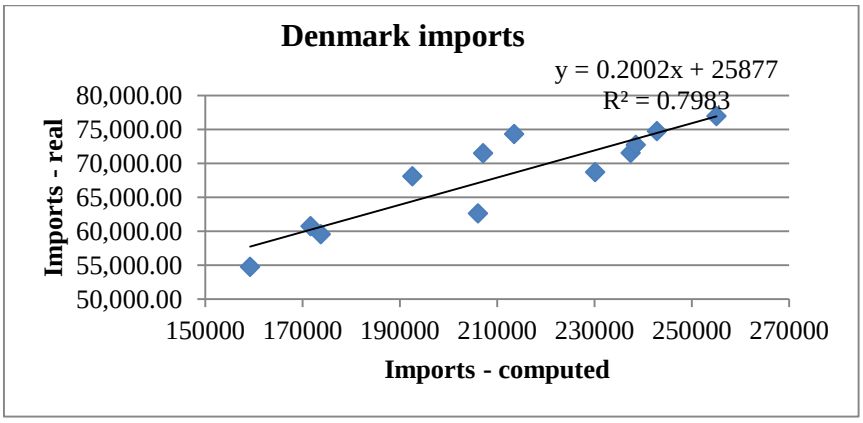
DURBIN-WATSON STATISTIC: 0.969896117

Observation	Predicted Y	Residuals
1	53062.99921	3153.000794
2	64121.15647	-2638.156468
3	81383.64234	-7163.642337
4	91803.25942	-5579.259421
5	99855.17626	-3283.176257
6	68330.97387	6983.026127
7	92694.06373	2841.936269
8	111297.0039	-2012.003896
9	113654.5579	-3588.557945
10	110495.8062	-1874.806178
11	113572.207	2630.792985

	116274.153	10530.846
12	7	32

Appendix A.14

Table A.19. The regression analysis of the real imports of Denmark in function of exports of the other EU countries (million of Euro)



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.893458341
R Square	0.798267807
Adjusted R Square	0.778094588
Standard Error	3303.144877
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	431746325.9	431746325.9	39.57067017	9.01837E-05
Residual	10	109107660.8	10910766.08		
Total	11	540853986.7			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95.0%*	*Upper 95.0%*
Intercept	25877.46319	6770.404189	3.822144508	0.003361751	10792.06257	40962.86381
X Variable 1	0.200169675	0.031820836	6.290522249	9.01837E-05	0.129268435	0.271070915

RESIDUAL OUTPUT DURBIN-WATSON STATISTIC: 0.812480069

Observation	Predicted Y	Residuals
1	57741.49693	-2954.496934
2	60239.07202	509.9279817
3	64425.91102	3674.088982
4	67326.25351	4199.746489
5	68604.53706	5751.462945
6	60661.88442	-1059.884418
7	67127.28285	-4479.282852
8	71946.17361	-3222.173614
9	73405.26242	-1857.262419
10	73618.75739	-890.7573896
11	74484.79749	298.2025063
12	76926.57128	30.42872192

Table A.20. The regression analysis of the real imports of Denmark, after eliminating the autoregression, in function of exports of the other EU countries (million of Euro)

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.857868942
R Square	0.735939122
Adjusted R Square	0.706599024
Standard Error	2637.901525
Observations	11

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	174541013.6	174541013.6	25.083049	0.000730649
Residual	9	62626720.11	6958524.457		
Total	10	237167733.7			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 88.0%*	*Upper 88.0%*
Intercept	7957.141817	4526.129266	1.758045639	0.1126083	183.1573702	15731.12626
X Variable 1	0.233546747	0.046631958	5.008298067	0.0007306	0.153452676	0.313640818

RESIDUAL OUTPUT

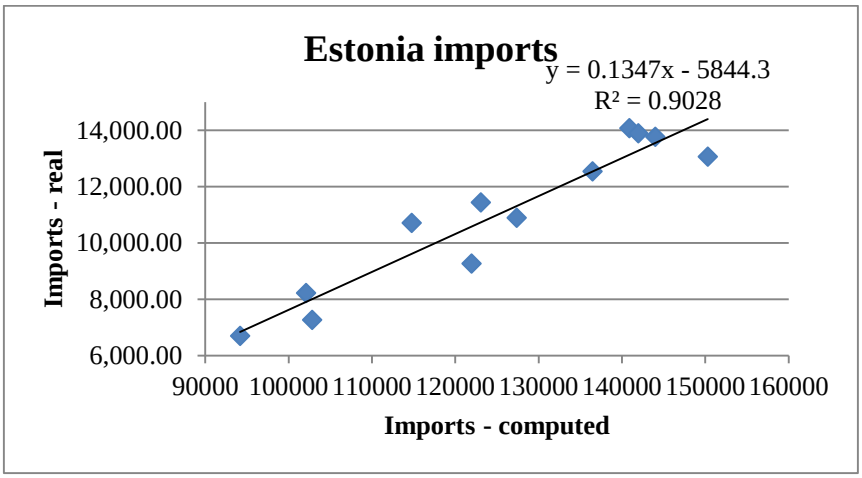
DURBIN-WATSON STATISTIC: 0.91299833

Observation	Predicted Y	Residuals
1	26496.50567	2492.131632
2	29692.19303	3191.236004
3	30244.30329	1803.705594
4	29774.03207	3117.903427
5	19642.39965	-3145.032655
6	32558.02508	-4461.673054
7	33807.44365	-1400.876654
8	32250.47996	-542.2077355
9	31512.69198	-261.510023

10	32378.7376 8	243.39097 85
11	34641.8999 7	- 1037.0675 14

Appendix A.15

Table A.21. The regression analysis of the real imports of Estonia in function of exports of the other EU countries (million of Euro)



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.950165109
R Square	0.902813735
Adjusted R Square	0.893095108
Standard Error	857.191011
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	68257201.96	68257201.96	92.8951981	2.22587E-06
Residual	10	7347764.293	734776.4293		

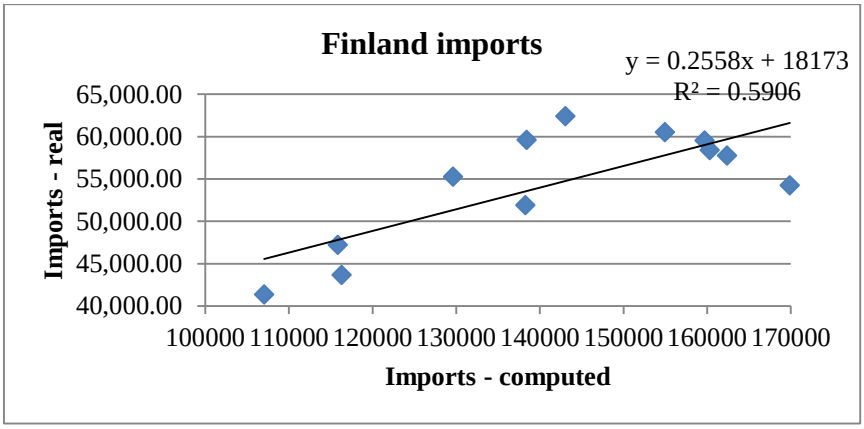
Total	11	75604966.25				

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-5844.295155	1764.086636	-3.312929781	0.007840452	-9774.925127	-1913.665182
X Variable 1	0.134700794	0.013975699	9.638215504	2.22587E-06	0.103560997	0.165840591

RESIDUAL OUTPUT			DURBIN-WATSON STATISTIC:	1.0801031
Observation	Predicted Y	Residuals		
1	6842.151616	-140.1516158		
2	7904.465388	324.5346121		
3	9613.804996	1097.195004		
4	10730.11628	708.8837247		
5	11312.35238	-416.352376		
6	8005.01549	-735.0154898		
7	10579.607	-1311.606996		
8	12536.66002	6.339982727		
9	13133.332	943.6679979		
10	13275.45616	623.543843		
11	13551.8797	223.1203022		
12	14398.15899	-1324.158989		

Appendix A.16

Table A.22. The regression analysis of the real imports of Finland in function of exports of the other EU countries (million of Euro)



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.768516905
R Square	0.590618234
Adjusted R Square	0.549680057
Standard Error	4642.330099
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	310921240.7	310921240.7	14.42707719	0.00349553
Residual	10	215512287.5	21551228.75		
Total	11	526433528.3			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 91.0%*	*Upper 91.0%*
Intercept	18173.07584	9611.610538	1.890742011	0.087954402	134.2513546	36211.90033
X Variable 1	0.255827112	0.067353069	3.79829925	0.00349553	0.129420597	0.382233627

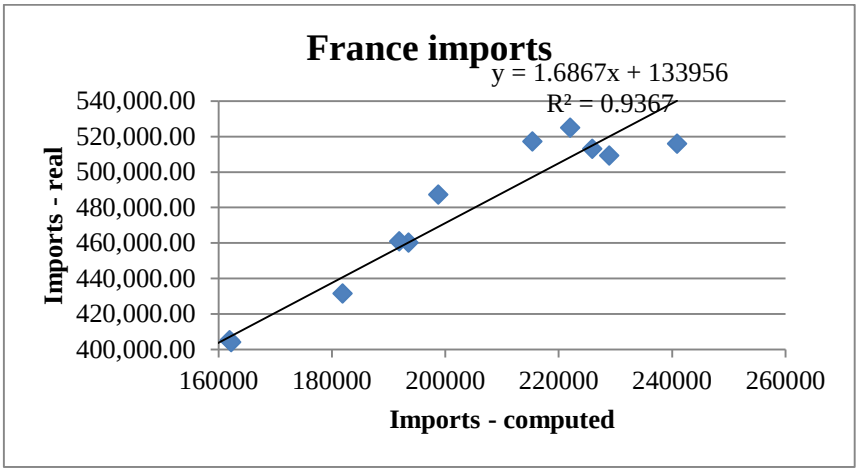
RESIDUAL OUTPUT DURBIN-WATSON STATISTIC: 1.140441508

Observation	Predicted Y	Residuals
1	45556.68712	-4203.687118

2	47809.97139	-575.9713891
3	51330.72295	3922.277055
4	53587.88811	6028.111887
5	54765.16611	7636.833891
6	47927.05067	-4272.050667
7	53541.44526	-1642.445259
8	57809.98458	2725.015419
9	59032.84585	484.1541488
10	59186.12722	-779.1272237
11	59711.13051	-1942.130507
12	61631.98024	-7380.980236

Appendix A.17

Table A.23. The regression analysis of the real imports of France in function of exports of the other EU countries (million of Euro)



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.967817933
R Square	0.936671552
Adjusted R Square	0.930338707

Standard Error	13679.70087
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	27678444842	27678444842	147.9069165	2.57562E-07
Residual	10	1871342159	187134215.9		
Total	11	29549787001			

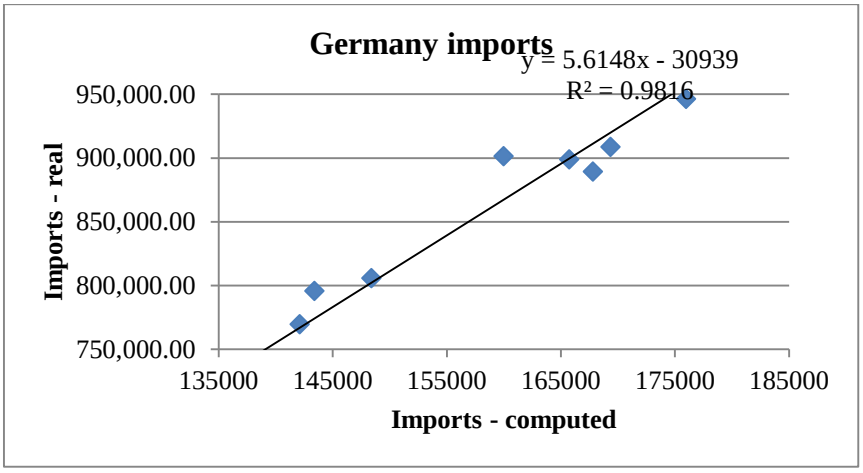
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95.0%*	*Upper 95.0%*
Intercept	133956.0736	27698.48771	4.836223371	0.00068536	72239.997	195672.1502
X Variable 1	1.686655166	0.13868582	12.16169875	2.57562E-07	1.377643901	1.99566643

RESIDUAL OUTPUT DURBIN-WATSON STATISTIC: 1.012440681

Observation	Predicted Y	Residuals
1	385524.3347	-7018.334738
2	407102.4564	-1938.456399
3	440674.6359	-9072.635942
4	460292.1559	22.84409356
5	469146.151	18203.849
6	407547.902	-3449.902029
7	457522.3139	3418.686073
8	497158.1706	20103.82941
9	508435.6024	16482.39758
10	514930.9621	-1816.962066
11	519996.4261	-10697.42606
12	540175.8889	-24237.88892

Appendix A.18

Table A.24. The regression analysis of the real imports of Germany in function of exports of the other EU countries (million of Euro)



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.990771488
R Square	0.981628142
Adjusted R Square	0.979790956
Standard Error	17536.24845
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	1.64311E+11	1.64311E+11	534.3107566	5.1906E-10
Residual	10	3075200096	307520009.6		
Total	11	1.67386E+11			

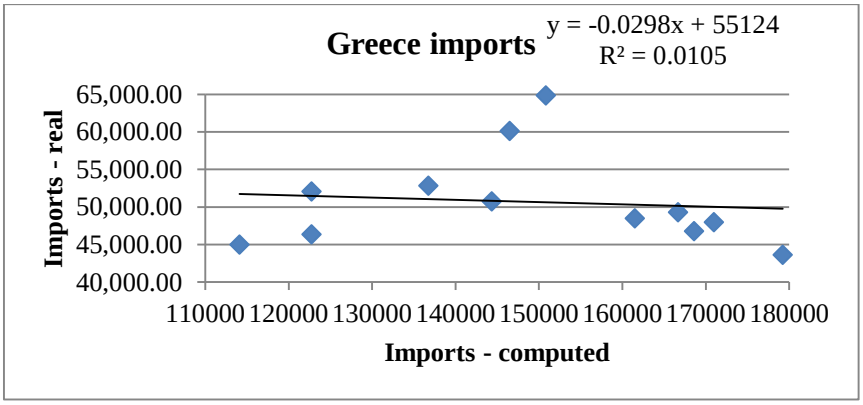
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 59.0%*	*Upper 59.0%*
Intercept	-30938.86458	35951.85188	-0.860563864	0.409636602	-61852.86799	-24.86116572
X Variable 1	5.614782359	0.242904728	23.11516292	5.1906E-10	5.4059153	5.823649419

RESIDUAL OUTPUT DURBIN-WATSON STATISTIC: 0.859251646

Observation	Predicted Y	Residuals
1	588772.9181	-13682.91813
2	643581.4477	-19116.44769
3	718629.4148	3482.585233
4	766984.0889	2794.911112
5	802171.9299	3558.070068
6	652406.7626	11736.2374
7	774194.3678	21471.6322
8	867226.1459	34260.85411
9	899566.6747	-709.6746559
10	911192.25	-21776.24997
11	919928.1776	-11353.17755
12	957119.8221	-10665.82212

Appendix A.19

Table A.24. The regression analysis of the real imports of Greece in function of exports of the other EU countries (million of Euro)



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.102395208
R Square	0.010484779
Adjusted R Square	-0.088466744
Standard Error	6494.473544
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	4469147.475	4469147.475	0.105958739	0.751501439
Residual	10	421781866.2	42178186.62		
Total	11	426251013.7			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 24.0%*	*Upper 24.0%*
Intercept	55123.63841	13754.46566	4.007690287	0.002487297	50805.23017	59442.04665
X Variable 1	-0.029818583	0.09160488	-0.325513043	0.751501439	-0.058579225	-0.001057941

RESIDUAL OUTPUT

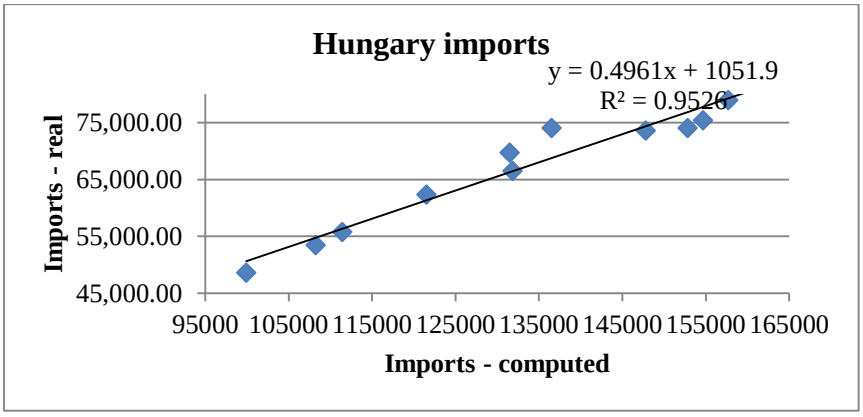
DURBIN-WATSON STATISTIC: 0.818344406

Observation	Predicted Y	Residuals
1	51721.06138	-6723.061382
2	51463.75236	-5081.752356

		57
3	51045.92245	1801.077554
4	50755.59769	9374.40231
5	50625.7142	14231.2858
6	51463.61996	623.380037
7	50819.40439	-78.40438784
8	50308.19758	-1834.197584
9	50153.29959	-862.2995874
10	50096.93084	-3288.930836
11	50025.54903	-2021.549025
12	49778.95054	-6139.950537

Appendix A.20

Table A.25. The regression analysis of the real imports of Hungary in function of exports of the other EU countries (million of Euro)



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.975993593
R Square	0.952563493
Adjusted R Square	0.947819842
Standard Error	2479.675346
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	1234726815	1234726815	200.8081021	6.03157E-08
Residual	10	61487898.24	6148789.824		
Total	11	1296214713			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 16.0%*	*Upper 16.0%*

Intercept	1051.909516	4777.947433	0.22015929	0.830176567	61.84283104	2041.976202
X Variable 1	0.496123629	0.035010579	14.17067755	6.03157E-08	0.48886888	0.503378378

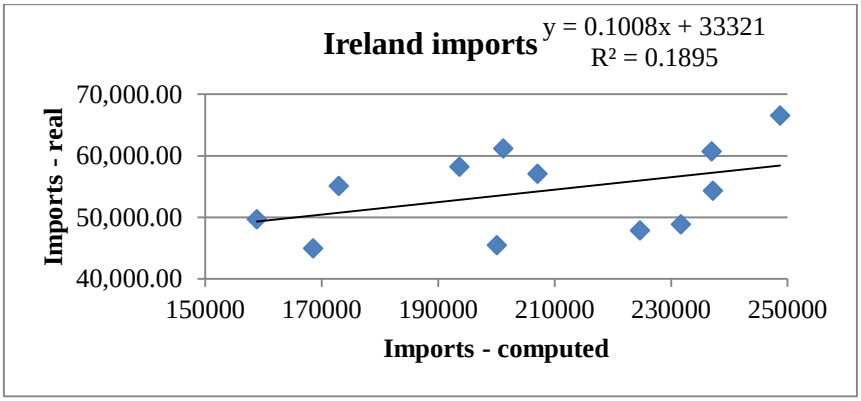
RESIDUAL OUTPUT

DURBIN-WATSON STATISTIC: 0.973656826

Observation	Predicted Y	Residuals
1	50613.52391	-2033.52391
2	54740.96987	-1294.969866
3	61345.69009	985.3099069
4	66284.37756	3445.622438
5	68772.24903	5296.750966
6	56322.22998	-572.2299796
7	66452.96533	61.03466758
8	74373.16728	-781.1672835
9	76871.00588	-2793.005879
10	77782.9208	-2403.920798
11	79287.80268	-309.802679
12	83087.09758	399.9024166

Appendix A.21

Table A.26. The regression analysis of the real imports of Ireland in function of exports of the other EU countries (million of Euro)



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.435345178
R Square	0.189525424
Adjusted R Square	0.108477967
Standard Error	6488.265024
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	98443091.49	98443091.49	2.338449964	0.157209809
Residual	10	420975830.2	42097583.02		
Total	11	519418921.7			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 84.0%*	*Upper 84.0%*
Intercept	33320.92027	13758.69154	2.421808802	0.035950252	12436.63	54205.21053
X Variable 1	0.100805373	0.065920371	1.529199125	0.157209809	0.000744975	0.200865771

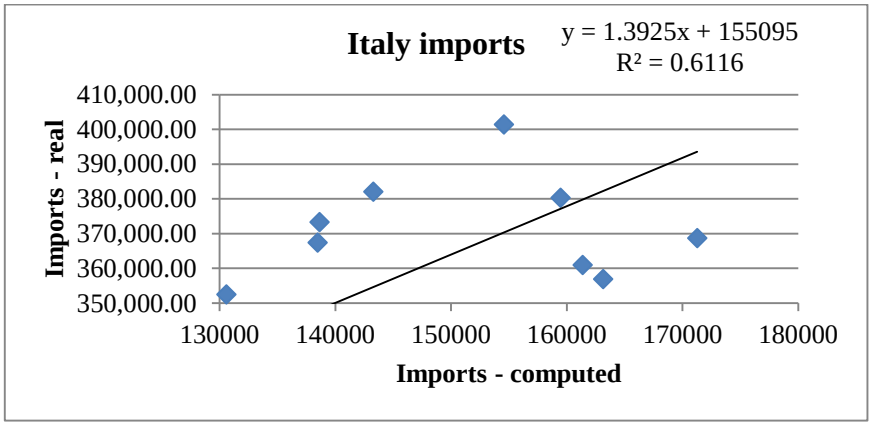
RESIDUAL OUTPUT DURBIN-WATSON STATISTIC: 0.48855042

Observation	Predicted Y	Residuals

1	49333.632	358.3679991
2	50750.262	4361.737995
3	52839.31223	5393.687766
4	53596.37772	7565.622278
5	54192.31489	2895.685106
6	50309.43204	-5354.432044
7	53490.77704	-8023.777037
8	55963.53889	-8114.538886
9	56675.25405	-7820.254054
10	57226.8036	-2912.803596
11	57208.67677	3512.323226
12	58391.61875	8138.381246

Appendix A.22

Table A.27. The regression analysis of the real imports of Italy in function of exports of the other EU countries (million of Euro)



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.782078665
R Square	0.611647039
Adjusted R Square	0.572811743
Standard Error	23728.52009
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	8867793310	8867793310	15.74977146	0.002649341
Residual	10	5630426658	563042665.8		
Total	11	14498219968			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95.0%*	*Upper 95.0%*
Intercept	155094.5257	50322.08011	3.082037257	0.011600318	42969.94394	267219.1076
X Variable 1	1.392543081	0.35089042	3.968598174	0.002649341	0.610710503	2.174375658

RESIDUAL OUTPUT

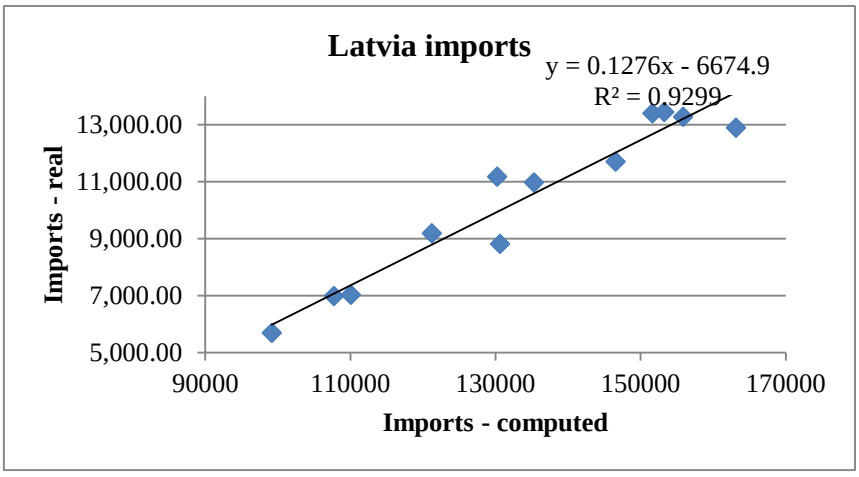
DURBIN-WATSON STATISTIC: 1.130386862

Observation	Predicted Y	Residuals
1	307048.1304	-21984.13042
2	318664.8084	-9632.808351
3	336933.95	15531.0429

	7	9
4	348140.0715	25199.92853
5	354618.8224	27431.17755
6	318911.8316	-21302.83157
7	347898.507	19491.49298
8	370317.1834	31110.8166
9	377129.8662	3162.13379
10	379794.2467	-18792.24674
11	382273.4608	-25334.46081
12	393595.1146	-24880.11456

Appendix A.23

Table A.28. The regression analysis of the real imports of Latvia in function of exports of the other EU countries (million of Euro)



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.964324436
R Square	0.929921617
Adjusted R Square	0.922913779
Standard Error	769.8415789
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	78643892.43	78643892.43	132.6973572	4.28652E-07
Residual	10	5926560.566	592656.0566		
Total	11	84570453			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-6674.882369	1497.675551	-4.456828025	0.001222129	-10011.91145	-3337.853285
X Variable 1	0.127585092	0.011075639	11.51943389	4.28652E-07	0.102907003	0.152263154

RESIDUAL OUTPUT

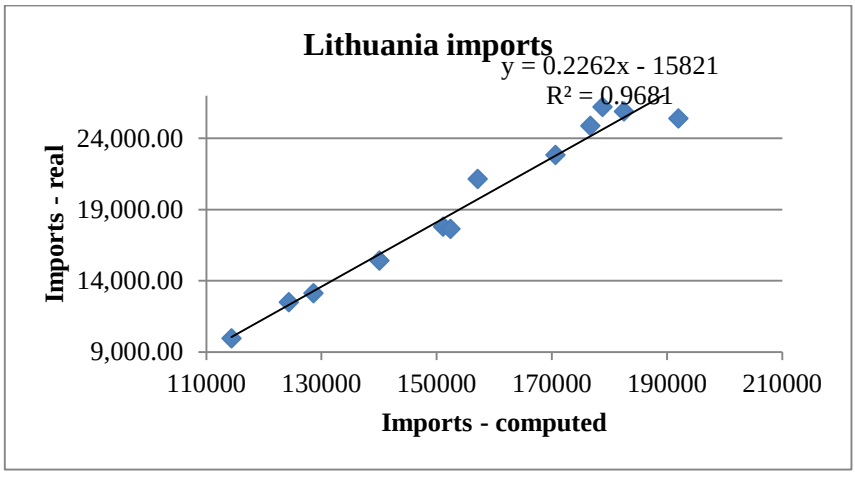
DURBIN-WATSON STATISTIC: 1.141337721

Observation	Predicted Y	Residuals
1	5976.054753	-275.0547531
2	7069.219133	-79.21913303
3	8788.799523	402.2004774

4	9942.104963	1237.895037
5	10586.4403	388.5597009
6	7367.936661	-333.936661
7	9991.54929	-1172.54929
8	12021.95631	-318.9563085
9	12670.55426	738.4457378
10	12878.08035	572.9196544
11	13207.62243	77.37756813
12	14137.68203	-1237.68203

Appendix A.24

Table A.29. The regression analysis of the real imports of Lithuania in function of exports of the other EU countries (million of Euro)



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.983945782
R Square	0.968149302
Adjusted R Square	0.964964232
Standard Error	1080.90361
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	355138141.9	355138141.9	303.9648625	8.17599E-09
Residual	10	11683526.15	1168352.615		
Total	11	366821668			

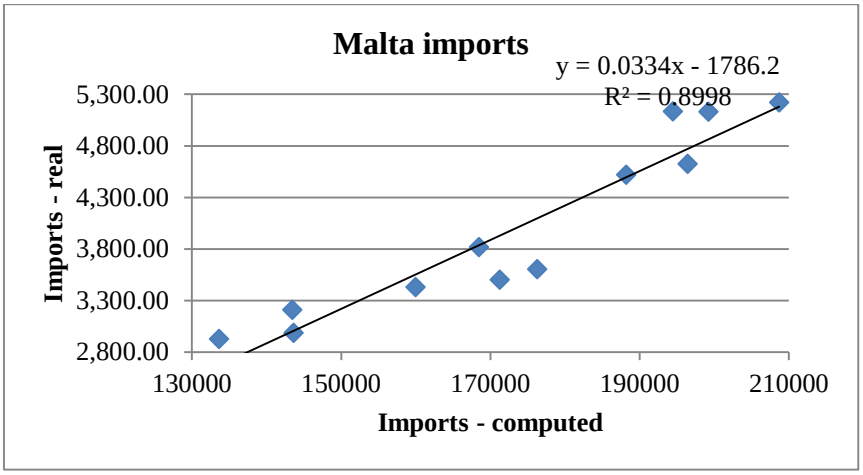
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-15820.96621	2044.18992	-7.739479613	1.57173E-05	-20375.70519	-11266.22723
X Variable 1	0.226224651	0.012975624	17.43458811	8.17599E-09	0.19731316	0.255136142

RESIDUAL OUTPUT DURBIN-WATSON STATISTIC: 1.552895926

Observation	Predicted Y	Residuals
1	10049.06238	-92.06237751
2	12294.10224	199.8977563
3	15852.80378	-423.8037755
4	18364.653	-551.6529955
5	19718.43108	1425.568922
6	13266.69405	-143.6940514
7	18653.88121	-1000.881212
8	22775.47945	50.52055412
9	24143.33096	735.6690356
10	24622.16485	1585.835152
11	25469.43951	419.5604898
12	27601.9575	-2204.957497

Appendix A.25

Table A.30. The regression analysis of the real imports of Malta in function of exports of the other EU countries (million of Euro)



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.948557034
R Square	0.899760446
Adjusted R Square	0.889736491
Standard Error	288.1224599
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	7451470.731	7451470.731	89.7610185	2.60181E-06
Residual	10	830145.5189	83014.55189		
Total	11	8281616.25			

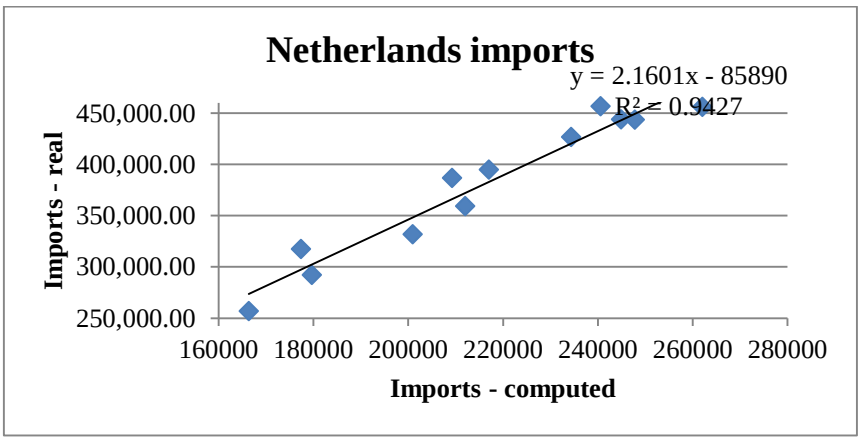
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-1786.180846	617.3334283	-2.893381054	0.01601414	-3161.685442	-410.6762495
X Variable 1	0.033376849	0.003522909	9.474229179	2.6018E-06	0.025527318	0.04122638

RESIDUAL OUTPUT DURBIN-WATSON STATISTIC: 1.746023383

Observation	Predicted Y	Residuals
1	2673.432437	252.5675629
2	3007.990956	-19.99095574
3	3552.362688	-122.3626879
4	3930.200299	-427.200299
5	4096.792162	-492.7921621
6	3001.400697	208.5993031
7	3836.849592	-18.84959169
8	4495.128499	24.87150139
9	4703.68741	431.3125898
10	4770.578954	-145.5789543
11	4863.14831	268.8516905
12	5179.427997	40.57200309

Appendix A.26

Table A.31. The regression analysis of the real imports of Netherlands in function of exports of the other EU countries (million of Euro)



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.970946929
R Square	0.942737939
Adjusted R Square	0.937011733
Standard Error	17219.81974
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	48818138004	48818138004	164.635698	1.55262E-07
Residual	10	2965221918	296522191.8		
Total	11	51783359922			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-85890.2647	36701.05671	-2.340266804	0.041320763	-167665.3151	-4115.214327
X Variable 1	2.160112435	0.168350477	12.83104431	1.55262E-07	1.785004195	2.535220674

RESIDUAL OUTPUT

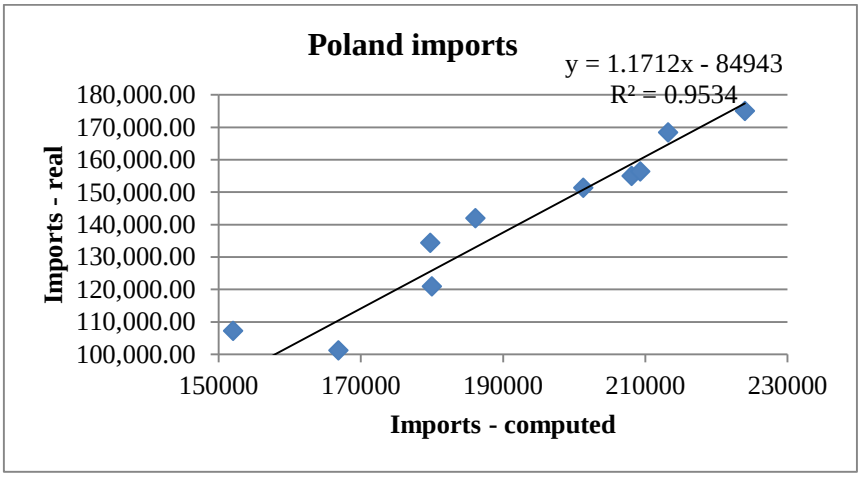
DURBIN-WATSON STATISTIC: 0.710585387

Observation	Predicted Y	Residuals
1	273477.7262	-16533.72617
2	302176.656	-9761.655965

3	348163.8728	-16184.87282
4	372044.3478	-12601.34781
5	382811.1258	12168.87417
6	297234.8155	20483.18446
7	365971.6453	20862.35468
8	420234.2097	6752.790283
9	433727.7841	23096.21594
10	442990.2166	1024.783422
11	449302.9508	-5613.950759
12	480062.6494	-23692.64942

Appendix A.27

Table A.32. The regression analysis of the real imports of Poland in function of exports of the other EU countries (million of Euro)



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.976437597
R Square	0.95343038
Adjusted R Square	0.948773418
Standard Error	7644.271041
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	11963505379	11963505379	204.7322666	5.49815E-08
Residual	10	584348797.6	58434879.76		
Total	11	12547854177			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-84942.89661	15213.03076	-5.583561747	0.000232955	-118839.6415	-51046.15172
X Variable 1	1.171183896	0.081852499	14.30846835	5.49815E-08	0.988805162	1.353562663

RESIDUAL OUTPUT

DURBIN-WATSON STATISTIC: 0.782022365

Observation	Predicted Y	Residuals
1	76228.73203	-4141.732035
2	89136.64255	-7439.642553
3	110471.05	-9333.05723

	72	9
4	125822.7367	-4910.736652
5	133036.0817	8929.918307
6	93114.80289	14040.19711
7	125600.036	8705.963966
8	150763.7419	527.2581238
9	158713.34	-3779.339962
10	160143.6366	-3824.636584
11	164751.402	3614.598036
12	177378.7905	-2388.790515

Table A.33. The regression analysis of the real imports of Poland, after eliminating the autoregression, in function of exports of the other EU countries (million of Euro)

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.944686139
R Square	0.892431902
Adjusted R Square	0.880479891
Standard Error	5690.583195
Observations	11

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	2417951919	2417951919	74.66792914	1.18963E-05
Residual	9	291444633.9	32382737.1		
Total	10	2709396553			

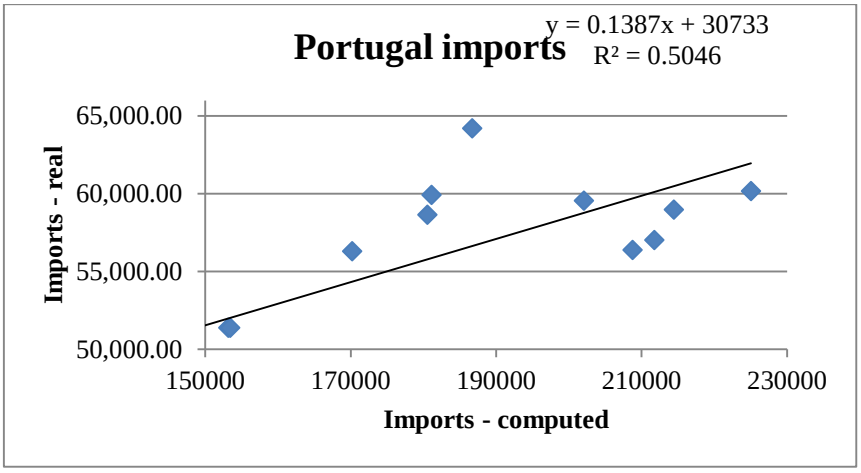
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 93.0%*	*Upper 93.0%*
Intercept	-20068.47485	9402.232871	-2.13443712	0.061575723	-39393.77596	-743.1737398
X Variable 1	1.000800811	0.115819209	8.641060649	1.18963E-05	0.762746604	1.238855018

RESIDUAL OUTPUT DURBIN-WATSON STATISTIC: 1.436233874

Observation	Predicted Y	Residuals
1	45949.02735	-7557.807708
2	57553.48109	-5494.404303
3	59719.83899	434.1878135
4	58003.04456	11325.88475
5	20186.53508	1683.34536
6	68439.32694	1494.027587
7	73266.01888	-2658.444963
8	67141.38838	-3094.438965
9	64282.69985	-1039.258185
10	67485.89124	6972.520998
11	75910.87041	-2065.61239

Appendix A.28

Table A.34. The regression analysis of the real imports of Portugal in function of exports of the other EU countries (million of Euro)



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.710324874
R Square	0.504561426
Adjusted R Square	0.455017569
Standard Error	3913.92976
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	156009226.6	156009226.6	10.18413669	0.009633532
Residual	10	153188461.7	15318846.17		
Total	11	309197688.3			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95.0%*	*Upper 95.0%*
Intercept	30732.58421	8154.668729	3.768710321	0.003669301	12562.84999	48902.31843
X Variable 1	0.138715782	0.043467441	3.191259454	0.009633532	0.041864358	0.235567206

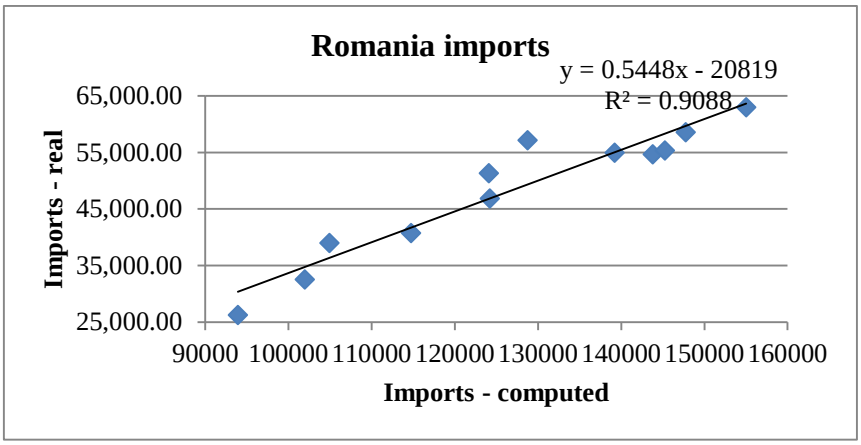
RESIDUAL OUTPUT

DURBIN-WATSON STATISTIC: 1.039918627

Observation	Predicted Y	Residuals
1	50495.17893	-6322.178932
2	51974.93231	-602.9323121
3	54342.11436	1952.885644
4	55854.20794	4072.792063
5	56632.89037	7561.109633
6	52014.95043	-635.9504281
7	55773.32138	2873.678623
8	58758.184	792.8160046
9	59691.29871	-3317.298706
10	60104.24449	-3091.244492
11	60475.25234	-1499.252336
12	61946.42476	-1784.424757

Appendix A.29

Table A.35. The regression analysis of the real imports of Romania in function of exports of the other EU countries (million of Euro)



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.953288032
R Square	0.908758071
Adjusted R Square	0.899633878
Standard Error	3603.9702
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	1293648255	1293648255	99.59873542	1.61911E-06
Residual	10	129886012	12988601.2		
Total	11	1423534267			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-20819.13675	7008.614944	-2.970506572	0.014033656	-36435.304	-5202.969494
X Variable 1	0.544796841	0.054589318	9.979916604	1.61911E-06	0.423164261	0.666429422

RESIDUAL OUTPUT DURBIN-WATSON STATISTIC: 0.705501918

Observation	Predicted Y	Residuals
1	30349.08694	-4114.086942
2	34722.73778	-2184.737775
3	41689.85584	-943.8558351
4	46783.76623	4521.233772
5	49324.4263	7823.573703
6	36341.67786	2606.32214
7	46851.00505	-1.00505436
8	55009.13073	-66.13072888
9	57515.93712	-2871.937122
10	58312.75698	-2984.756982
11	59670.89192	-1115.891924
12	63644.72725	-668.727251

Table A.36. The regression analysis of the real imports of Romania, after eliminating the autoregression, in function of exports of the other EU countries (million of Euro)

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.920872471
R Square	0.848006107
Adjusted R Square	0.831117897
Standard Error	2732.474342
Observations	11

ANOVA

	df	*SS*	*MS*	*F*	*Significanc*

					e F
Regression	1	374910442.2	374910442.2	50.21290546	5.75365E-05
Residual	9	67197744.27	7466416.03		
Total	10	442108186.5			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 93.0%*	*Upper 93.0%*
Intercept	-8887.5794	4289.126845	-2.072118573	0.0681298	-17703.42867	-71.73012926
X Variable 1	0.572256413	0.080757523	7.086106509	5.75365E-05	0.406267814	0.738245011

RESIDUAL OUTPUT

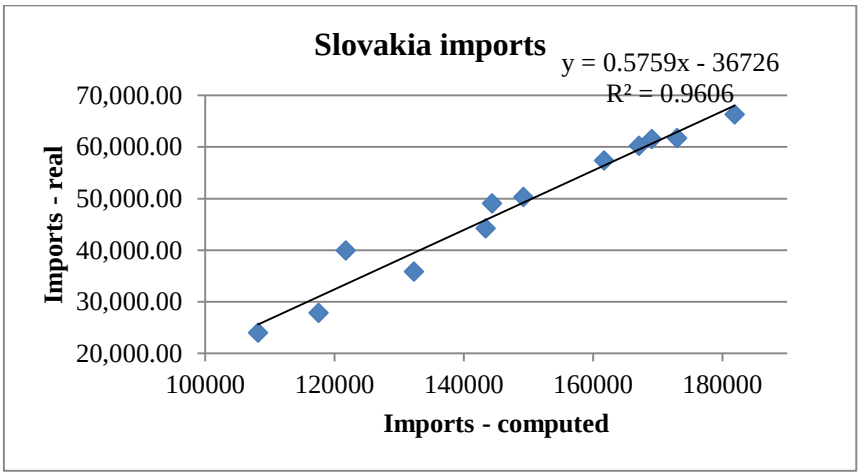
DURBIN-WATSON STATISTIC: 1.205288922

Observation	Predicted Y	Residuals
1	15823.32888	299.0445031
2	20267.01833	119.4749476
3	21038.52048	4771.10609
4	20359.25109	4686.453373
5	5052.27289	-1862.619747
6	24624.25362	-2144.591929
7	26286.2906	-658.0269061
8	23557.49695	-3292.142768
9	22746.8735	-

		1	1610.430617
10		23649.75083	285.7031652
11		26931.24259	-593.9701125

Appendix A.30

Table A.37. The regression analysis of the real imports of Slovakia in function of exports of the other EU countries (million of Euro)



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.980105871
R Square	0.960607518
Adjusted R Square	0.956668269
Standard Error	2916.724438
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	2074547738	2074547738	243.8555433	2.37367E-08

Residual	10	85072814.44	8507281.444			
Total	11	2159620553				

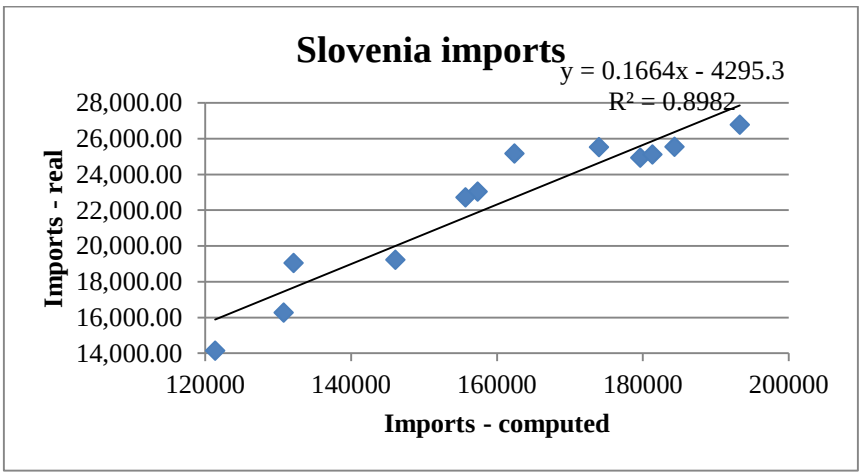
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-36725.87022	5502.185695	-6.674778398	5.53559E-05	-48985.50394	-24466.2365
X Variable 1	0.575900075	0.036879143	15.61587472	2.37367E-08	0.493728224	0.658071926

RESIDUAL OUTPUT DURBIN-WATSON STATISTIC: 0.780158349

Observation	Predicted Y	Residuals
1	25554.62458	-1566.624577
2	30938.97354	-3101.973535
3	39438.83248	-3610.83248
4	45849.69453	-1620.694528
5	49212.56511	1040.434886
6	33379.64381	6518.356187
7	46406.68204	2643.317956
8	56397.15467	960.8453281
9	59487.12925	753.8707514
10	60625.33816	917.6618427
11	62897.3273	-1208.327303
12	68015.03453	-1726.034527

Appendix A.31

Table A.38. The regression analysis of the real imports of Slovenia in function of exports of the other EU countries (million of Euro)



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.947756132
R Square	0.898241686
Adjusted R Square	0.888065854
Standard Error	1381.897333
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	168567893.3	168567893.3	88.27206816	2.80693E-06
Residual	10	19096402.38	1909640.238		
Total	11	187664295.7			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 83.0%*	*Upper 83.0%*
Intercept	-4295.3188	2858.475747	-	0.163830389	-	-

			1.502660572		8522.308915	68.32868483
X Variable 1	0.166358915	0.01770657	9.39532161	2.80693E-06	0.140175207	0.192542623

RESIDUAL OUTPUT			DURBIN-WATSON STATISTIC:	0.505807971
Observation	Predicted Y	Residuals		
1	15892.93613	-1733.936133		
2	17451.4713	-1178.471295		
3	20006.4215	-779.4214984		
4	21879.18037	1158.819629		
5	22718.27145	2461.728551		
6	17683.70002	1369.299977		
7	21603.93123	1116.068773		
8	24649.56371	875.4362943		
9	25589.77106	-655.7710604		
10	25865.74054	-736.7405379		
11	26374.06019	-823.0601853		
12	27862.95251	-1073.952515		

Table A.39. The regression analysis of the real imports of Slovenia, after eliminating the autoregression, in function of exports of the other EU countries (million of Euro)

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.927619251
R Square	0.860477475
Adjusted R Square	0.844974972
Standard Error	927.2219849
Observations	11

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	47720515.79	47720515.79	55.50571332	3.89126E-05
Residual	9	7737665.483	859740.6093		
Total	10	55458181.27			

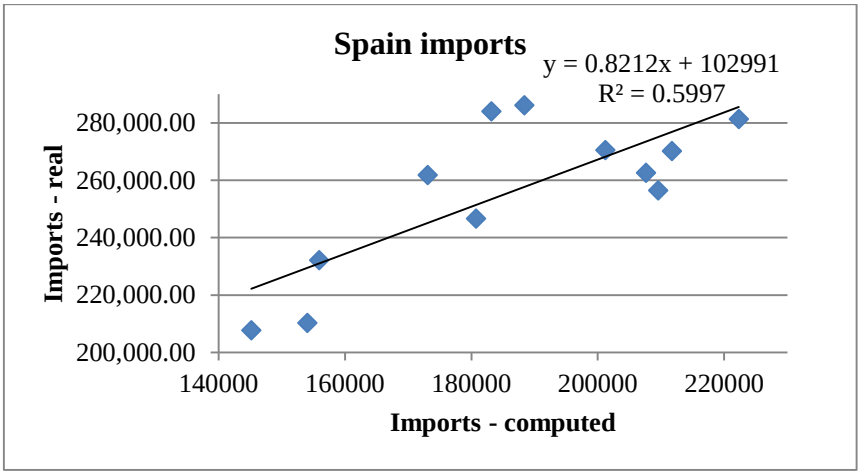
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 68.0%*	*Upper 68.0%*
Intercept	-1281.17168	1195.249742	-1.071886179	0.311671166	-2539.190547	-23.15281251
X Variable 1	0.169227716	0.022714472	7.450215656	3.89126E-05	0.145320382	0.19313505

RESIDUAL OUTPUT DURBIN-WATSON STATISTIC: 1.226522174

Observation	Predicted Y	Residuals
1	6147.61545	-4.848084362
2	7612.322455	-28.04267918
3	7657.882782	1623.920956
4	7148.44916	1548.727234
5	1416.36757	-378.7117142
6	9068.364526	19.92967628
7	9313.372284	-43.67883512
8	8053.180852	-1381.359536
9	7649.6261	-359.9664848
10	7965.860862	-393.7164218
11	9110.473403	-602.254111

Appendix A.32

Table A.40. The regression analysis of the real imports of Spain in function of exports of the other EU countries (million of Euro)



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.774374347
R Square	0.599655629
Adjusted R Square	0.559621192
Standard Error	17798.54832
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	4745012409	4745012409	14.97849534	0.003108117
Residual	10	3167883223	316788322.3		
Total	11	7912895632			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95.0%*	*Upper 95.0%*
Intercept	102990.7901	39817.34326	2.586581164	0.027108502	14272.22059	191709.3596
X Variable 1	0.821238971	0.212195151	3.87020611	0.003108117	0.34843871	1.294039231

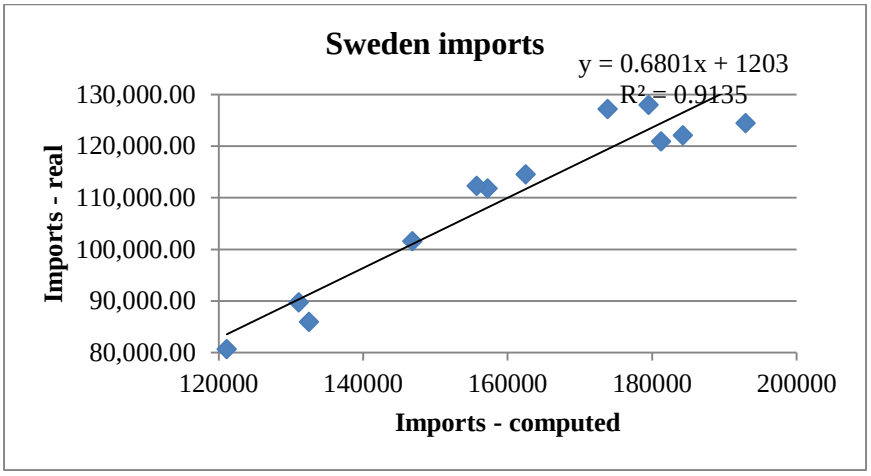
RESIDUAL OUTPUT DURBIN-WATSON STATISTIC: 1.13873941

Observation Predicted Y Residuals

1	222226.7144	-14570.71442
2	231022.1838	1086.816204
3	245120.886	16663.11405
4	253398.0878	30659.91216
5	257698.9492	28406.05082
6	229502.1197	-19280.11974
7	251419.0497	-4745.049742
8	268230.1071	2319.892879
9	273491.6784	-10930.67845
10	275098.0137	-18643.01366
11	276883.3051	-6710.305059
12	285553.9051	-4255.905051

Appendix A.33

Table A.41. The regression analysis of the real imports of Sweden in function of exports of the other EU countries (million of Euro)



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.955752837
R Square	0.913463486
Adjusted R Square	0.904809835
Standard Error	5128.545564
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	2776388481	2776388481	105.5581566	1.23988E-06
Residual	10	263019796	26301979.6		
Total	11	3039408277			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 8.0%*	*Upper 8.0%*
Intercept	1203.006923	10687.89191	0.112557924	0.912608491	102.1643655	2303.849481
X Variable 1	0.680095947	0.066194863	10.27414992	1.23988E-06	0.673277944	0.686913954

RESIDUAL OUTPUT

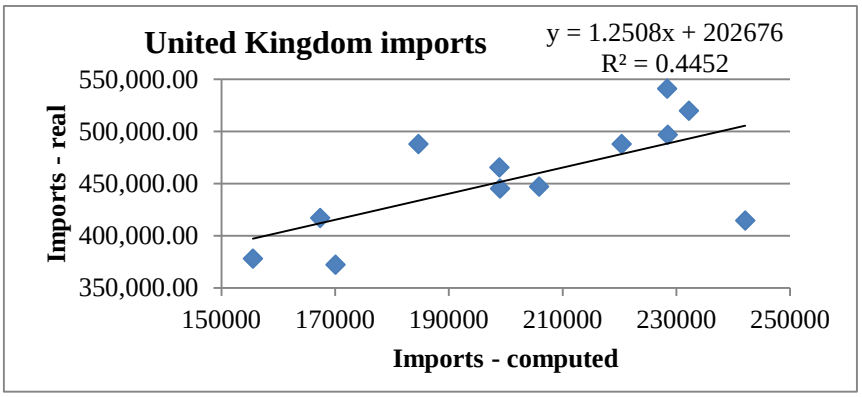
DURBIN-WATSON STATISTIC: 1.116353987

Observation	Predicted Y	Residuals
1	83585.30052	-2862.300518
2	90360.1443	-579.1443047
3	101059.427	523.57265

	3	33
4	108146.9929	3656.007148
5	111727.1947	2837.805258
6	91328.75055	-5383.750555
7	107120.184	5231.816009
8	119440.979	7733.021006
9	123298.5852	4686.41478
10	124455.1904	-3524.190393
11	126505.9449	-4373.944911
12	132412.3062	-7945.306173

Appendix A.34

Table A.42. The regression analysis of the real imports of United Kingdom in function of exports of the other EU countries (million of Euro)



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.667253679
R Square	0.445227472
Adjusted R Square	0.389750219
Standard Error	41803.54691
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	14024690012	14024690012	8.0254059	0.017762898
Residual	10	17475365342	1747536534		
Total	11	3039408277			

	Coefficients	*Standard Error*	*t Stat*	*.*	*Lower 8.0%*	*Upper 8.0%*
Intercept	202675.6936	90317.10797	2.244045432	0.048669026	1436.636311	403914.7509
X Variable 1	1.250750151	0.441506458	2.832914736	0.017762898	0.267012458	2.234487844

RESIDUAL OUTPUT

DURBIN-WATSON STATISTIC: 1.473229489

Observation	Predicted Y	Residuals
1	397190.7061	-18897.70614
2	411983.4282	5375.571758
3	433595.0275	54355.97246

4	451395.5411	14319.4589
5	460149.654	-12921.65398
6	415386.2566	-42805.25663
7	451533.9866	-6242.986633
8	478353.5845	9551.415513
9	488300.3252	52811.67484
10	488451.4783	8525.521688
11	493092.3742	26640.62576
12	505473.6375	-90712.63754