

Title: International trade of flowers. Tendencies and policies

Author: Vítor João Pereira Domingues Martinho

Unidade de I&D do Instituto Politécnico de Viseu

Av. Cor. José Maria Vale de Andrade

Campus Politécnico

3504 - 510 Viseu

PORTUGAL

e-mail: vdmartinho@esav.ipv.pt

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Abstract

There are few papers about the international trade of flowers, so it is believed that this paper, with this topic, could be an important contribution to the international scientific community. It is intended to analyze if the international trade flowers tendencies and policies are adapted to the actual world global context. For that it was used data about the import and export of flowers, in different forms, between Portugal and the world. This is an approach to understand the international trade flowers tendencies and policies. To better understand the data analyzed it is made several estimations based in the absolute convergence theory and an analyze of the data volatility. As main conclusions, there is a tendency to the countries trade the flowers between the neighbors and is needed a more coherent policy for the international trade of flowers.

Keyword: Flowers, international trade, convergence, volatility.

1. Introduction

The climate in is an important resource for agrarian production, namely for the flowers productions, because, the territory of some countries, as the Mediterranean countries, has sun in the majority of the months, during the year.

Nevertheless, these productions are not totally explored in some countries landscape, because a lot of reasons.

The most important reason, in the European Union countries, is because the common agricultural policy. This European policy is totally oriented to the agricultural sector of the north countries and few oriented to the south and Mediterranean. In this way the Mediterranean farmers are induced to produce the agricultural products typical of the European north countries and not their products, like the flowers and others products from the horticulture and fruit production. The farmers are induced, because they receive more supports if they choose some productions in detriment of others. As, the agricultural productions have a lot of risks and uncertainties, the farmers opt for productions with at least one guarantee that is the public support, in form of subsidies.

In another way, it is needed some adjustments in the international and European policies for the flowers productions and commercialization and, of course, for the international trade of these productions. Because, it is needed to demonstrate to the farmers that despite the flowers productions can have few national and European supports, this sector well organized could be a profitable sector, with benefits to the rural populations and the countries.

The landscape of some countries origin small farms, but there are some works that demonstrate that is needed small area for be profitable the flowers production.

So, in this work, it is tried to analyze the data about the international trade of flowers with Portugal. This, because the international trade is the first step to become profitable the production of a sector with tradable products, like said the Keynesian theorist. From here it is analyzed, with the convergence theory and some test of stationary, the stability of the data.

This analyze is an approach to conclude about the evolution of the international flowers sector, the perspective for the future and some adjustments of policy need for become more profitable this sector with great possibility of grow in some countries. The data used are from 2006 to 2010 and were obtained from the INE (Statistics Portugal), gently given by the AICEP (Trade & Investment Agency).

The works available about the flower sector, analyze, this question, in different perspective. For example, Reinten et al. (2011) analyzed the cut flowers activity in the southern African and it

potential for the international trade. The influence of the United Kingdom retailers in the international trade of flowers was analyzed by (Hughes, 2000). The relationship between the international trade of flowers and some plant pest dissemination was studied by (Areal et al., 2007). The labor conditions in the cut flowers activities were considered by Riisgaard (2008). The African flowers growers potential in the European markets were researched by Cunden and Van Heck (2004). In another way, Vringer and Blok (2000) analyzed the environment implications of the decorative cut flowers.

2. Data analysis

In the tables 1 and 2, with absolute values, it is presented the countries with more than ninety per cent of import and export, together, of flowers, in different forms, with Portugal.

The majority of import comes from the Europe, namely from Netherlands, Spain, France, Italy and Belgium (table 1).

Table 1. Flowers, in different forms, import values (euros)

	Year	South Africa	Angola	Cape Verde	Brazil	USA	Swiss	China	Israel	Thailand	India	Germany	Belgium	Denmark	Spain	France	Netherlands	Italy	UK
Bulbs, tubers, roots, vegetation of flowers, etc., roots	2006	2.67	NA	NA	1274	372	NA	1647	7.986	138.327	NA	184.655	323.358	2.081	17.9.302	76.858	7.314.035	22.233	109
	2007	NA	NA	NA	NA	NA	NA	18.029	14.793	NA	218.944	420.957	13.790	1414.294	24.020	8.108.684	83.434	NA	NA
	2008	NA	NA	NA	NA	NA	NA	18.437	5.881	NA	172.713	263.807	5.610	979.793	121.48	7.380.338	208.148	5.262	NA
	2009	2.044	NA	NA	NA	NA	NA	18.18	15.538	3.095	45.533	20.095	5.599	3.1182	44.927	18.140.983	1762	NA	NA
	2010	799	NA	NA	NA	NA	NA	7.329	26.048	NA	158.095	44.527	NA	568.419	32.663	8.265.723	212	NA	NA
Other live plants (including roots), cuttings and slips, mushroom spawn	2006	31472	NA	NA	8.702	210.723	NA	33.211	46.549	2.643	NA	812.604	1935.345	155.717	10.648.803	1275.583	23.872.143	4.873.415	235.806
	2007	17.763	NA	NA	15.291	6.626	340	123.611	23.472	6.706	NA	958.877	1200.847	86.945	20.719.930	1557.055	24.984.372	4.956.950	296.460
	2008	33.954	NA	NA	2.232	38.996	NA	84.095	24.161	4.504	631	879.314	1577.302	12.1919	33.488.342	2.320.759	28.173.080	4.876.879	163.012
	2009	45.153	NA	NA	2.401	98.204	NA	43.796	25.149	NA	386	925.327	853.432	52.771	20.032.454	3.174.921	21.341.014	3.691.985	4.073
	2010	40.043	NA	NA	NA	6.831	NA	42.926	11871	7.831	35.339	947.652	725.835	16.206	14.275.770	3.008.624	25.605.736	5.801.943	181.842
Flowers and buds of p/branches / ornamental purposes, fresh, dried, etc.	2006	403.975	NA	NA	621467	NA	NA	4.768	747	NA	3.420	18.119	742.311	NA	3.184.189	19.959	15.564.755	23.234	307.593
	2007	411.523	NA	NA	600.341	841	NA	11067	2.263	9.908	4.552	58.322	703.287	NA	4.340.428	233.570	17.597.788	57.1456	47.485
	2008	351874	NA	NA	394.230	NA	NA	377	3.461	9.243	13.745	63.523	296.022	NA	4.511.597	183.583	17.554.637	34.120	7.330
	2009	94.730	NA	NA	269.030	NA	NA	10.439	NA	54.422	11.952	53.344	NA	NA	5.881.775	47.1971	11.289.615	18.563	NA
	2010	32.594	NA	NA	120.340	NA	NA	7.348	7.350	56.163	23.714	83.297	NA	NA	3.699.776	1096.432	14.337.539	38.959	1309
Foliage, branches and other parts of plants, s / flowers / buttons, etc.	2006	16.553	NA	NA	4.229	4.290	2.100	10.791	1362	NA	72.208	44.484	11.946	9.682	694.007	233.900	2.701.25	39.742	104.062
	2007	100.953	NA	NA	13.542	5.583	NA	38.982	NA	NA	66.024	64.743	24.685	NA	885.546	38.878	2.786.677	49.211	17.746
	2008	86.019	NA	NA	33.422	2.562	NA	56.646	3.864	165	25.814	11.323	98.458	26	2.183.000	5.744	2.990.013	8.428	22.888
	2009	23.300	NA	NA	66.852	482	NA	11.543	NA	168	NA	35.927	231.100	NA	1.109.228	4.997	2.125.187	22.937	NA
	2010	21.388	NA	NA	50.288	556	NA	6.239	NA	550	73.237	92.800	85.399	NA	1.460.915	4.768	2.134.191	61.688	140

Portugal export flowers, also, namely, to the Europe. Netherlands, Spain, France, United Kingdom, Italy and Germany are the most important destinations of the Portuguese flowers (table 2).

Table 2. Flowers, in different forms, export values (euros)

	Year	South Africa	Angola	Cape Verde	Brazil	USA	Swiss	China	Israel	Thailand	India	Germany	Belgium	Denmark	Spain	France	Netherlands	Italy	UK
Bulbs, tubers, roots, vegetation of flowers, etc., roots	2006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12.708	NA	1079.522	NA	NA
	2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	585	NA	NA	NA	67.904	14.871	1.375.967	NA	NA
	2008	NA	NA	NA	NA	NA	NA	NA	NA	NA	620	NA	39	NA	63.563	NA	830.373	NA	NA
	2009	NA	222	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.230.676	NA	780.195	NA	NA
	2010	NA	804	NA	NA	NA	NA	NA	NA	NA	NA	1.250	NA	NA	NA	10.280	1090.755	NA	NA
Other live plants (including roots), cuttings and slips, mushroom spawn	2006	2.009	24.638	3.586	6.014	152.809	201.578	11.466	NA	NA	NA	2.520.958	524.812	95	5.228.290	5.094.387	7.853.049	339.464	2.523.495
	2007	14.629	20.104	5.367	3.085	188.855	78.588	18.110	12.16	NA	NA	2.404.217	566.594	NA	8.195.069	5.416.216	9.087.990	509.067	2.694.163
	2008	90	68.185	5.808	5.031	69.720	73.130	NA	1.265	NA	NA	1.168.196	556.362	13.743	6.155.503	5.717.727	9.803.493	787.499	2.527.302
	2009	NA	7.1048	3.838	NA	77.862	44.287	NA	NA	NA	NA	1.131.320	1030.193	918.16	4.954.271	6.197.957	9.432.277	1.400.801	2.219.833
	2010	NA	57.885	3.484	NA	112.294	29.904	NA	NA	NA	NA	456.796	716.690	102.716	5.046.533	6.361.183	11.731.354	2.948.997	3.061.114
Flowers and buds of p/branches / ornamental purposes, fresh, dried, etc.	2006	NA	17.738	7.189	NA	NA	1572	NA	NA	NA	NA	314.610	163.381	NA	162.320	175.185	4.724.390	10.188	5.819
	2007	NA	22.538	3.228	NA	NA	1370	NA	NA	NA	NA	243.326	21.188	NA	289.375	210.492	4.751.432	13.529	NA
	2008	NA	10.987	1.260	NA	NA	877	NA	NA	NA	NA	253.031	277.834	NA	318.687	6.004	5.256.735	NA	27.029
	2009	NA	11.726	3.822	NA	1368	840	NA	NA	NA	NA	63.184	331.742	NA	618.525	35.044	7.508.691	NA	153.114
	2010	NA	50.352	11.272	NA	NA	1.152	NA	NA	NA	NA	NA	123.427	NA	330.097	3.537	3.218.584	NA	94.047
Foliage, branches and other parts of plants, s / flowers / buttons, etc.	2006	NA	1.360	602	NA	NA	NA	NA	NA	NA	NA	504.076	202.770	NA	12.496.917	603.765	2.136.748	2.099.778	98.945
	2007	NA	2.631	NA	NA	NA	20	NA	NA	NA	NA	539.568	228.525	NA	15.937.919	58.797	4.981.932	4.505.754	102.114
	2008	NA	4.785	NA	NA	NA	NA	NA	NA	NA	NA	576.795	262.566	NA	8.864.672	38.611	2.467.610	15.49.003	208.783
	2009	NA	4.344	31	NA	NA	NA	NA	NA	NA	NA	387.664	289.549	NA	9.353.731	44.199	1.806.112	2.468.492	166.980
	2010	NA	5.439	1696	NA	NA	NA	NA	NA	NA	NA	636.750	296.178	NA	16.586.061	30.447	1.294.269	5.235.820	131.597

From South Africa Portugal import particularly other live plants (including roots), cuttings and slips and mushroom spawn, and flowers and buds cut for branches and ornamental purposes, fresh, dried, etc. (table 3). Do not import any flowers from Angola and Cape Verde. From Brazil import in particular flowers and buds cut for branches and ornamental purposes, fresh, dried, etc. The United States of America send to Portugal namely other live plants (including roots), cuttings and slips and mushroom spawn. The Swiss few importance has in the Portuguese flowers importations. The majority of imports from China are other live plants (including roots), cuttings and slips and mushroom spawn. From Israel are bulbs, tubers, roots, vegetation or flowers, etc. and roots and other live plants (including roots), cuttings and slips and mushroom spawn. From Thailand the majority are flowers and buds cut for branches and ornamental purposes, fresh, dried, etc. From India Portugal import namely flowers and buds cut for branches and ornamental purposes, fresh, dried, etc. and foliage, branches and other parts of plants, without flowers and buttons, etc. From the European countries Portugal import in particular other live plants (including roots), cuttings and slips and mushroom spawn. The differences in the import of flowers from different countries are normal, because their availability depend from their natural and climate conditions.

Table 3. Flowers, in different forms, import percentage relatively to the total of each country

	Year	South Africa	Angola	Cape Verde	Brazil	USA	Swiss	China	Israel	Thailand	India	Germany	Belgium	Denmark	Spain	France	Netherlands	Italy	UK
Bulbs, tubers, roots, vegetation or flowers, etc., roots	2006	NA	NA	NA	NA	NA	NA	NA	4120	47.10	NA	6.83	17.91	13.69	5.17	1.30	15.16	147	NA
	2007	NA	NA	NA	NA	NA	NA	NA	36.94	29.71	NA	6.33	11.60	4.40	2.38	4.60	13.16	3.83	2.65
	2008	124	NA	NA	NA	NA	NA	NA	4187	22.16	20.05	4.30	1.62	9.59	1.14	1.22	34.29	0.05	NA
	2009	0.84	NA	NA	NA	NA	NA	NA	27.60	28.75	NA	2.33	5.20	NA	2.84	0.79	16.42	0.00	NA
	2010	NA	NA	NA	NA	NA	NA	NA	4.95	NA	NA	9.50	24.19	NA	3.79	2.07	18.35	0.01	NA
Other live plants (including roots), cuttings and slips, mushroom spawn	2006	3.35	NA	NA	2.43	50.77	100.00	71.18	53.63	21.35	NA	73.71	51.10	86.31	75.73	84.01	46.72	87.56	81.96
	2007	7.20	NA	NA	0.52	93.84	NA	59.59	48.39	22.76	157	78.03	70.55	95.58	81.36	88.20	50.22	89.74	82.13
	2008	27.33	NA	NA	0.71	99.51	NA	66.58	58.13	NA	2.50	87.28	77.26	90.41	73.29	85.88	40.34	98.84	100.00
	2009	42.23	NA	NA	NA	92.47	NA	75.96	44.71	8.64	26.71	73.93	84.82	100.00	71.36	72.63	50.86	98.29	99.21
	2010	85.74	NA	NA	12.32	99.47	NA	27.36	95.05	3.73	47.86	80.52	55.27	97.77	69.26	84.48	44.94	92.16	95.54
Flowers and buds of p/branches / ornamental purposes, fresh, dried, etc.	2006	77.61	NA	NA	95.42	6.44	NA	6.37	5.17	3155	6.45	4.48	29.93	NA	6.86	12.60	32.91	10.09	13.13
	2007	74.57	NA	NA	91.71	NA	NA	0.27	6.93	46.70	34.20	5.64	13.24	NA	10.96	6.98	31.29	6.28	3.69
	2008	57.33	NA	NA	79.53	NA	NA	15.87	NA	77.60	77.44	5.03	NA	NA	21.52	12.77	21.34	0.50	NA
	2009	34.37	NA	NA	70.53	NA	NA	13.00	27.68	62.00	17.93	6.50	NA	NA	18.49	26.47	28.48	0.66	0.71
	2010	8.06	NA	NA	86.52	NA	NA	0.12	NA	96.23	NA	2.86	8.31	NA	17.43	13.28	30.10	2.02	2.02
Foliage, branches and other parts of plants, s / flowers / buttons, etc.	2006	19.04	NA	NA	2.15	42.78	NA	22.45	NA	NA	93.55	4.98	1.05	NA	3.24	2.10	5.21	0.87	4.91
	2007	18.23	NA	NA	7.77	6.16	NA	40.14	7.74	0.83	64.23	1.00	4.40	0.02	5.30	0.22	5.33	0.16	11.53
	2008	14.10	NA	NA	18.76	0.49	NA	17.55	NA	0.24	NA	3.39	20.92	NA	4.06	0.14	4.02	0.61	NA
	2009	22.56	NA	NA	29.47	7.53	NA	11.04	NA	0.61	55.36	7.24	9.98	NA	7.30	0.12	4.24	1.05	0.08
	2010	6.20	NA	NA	1.16	0.53	NA	72.73	NA	0.03	52.14	7.12	1.23	2.23	9.52	0.17	6.61	5.81	2.44

Portugal exports namely other live plants (including roots), cuttings and slips and mushroom spawn. However the Portuguese export has little importance to South Africa, Brazil, United States of America, China, Israel, India, Thailand and Denmark (table 4).

Table 4. Flowers, in different forms, export percentage relatively to the total of each country

	Year	South Africa	Angola	Cape Verde	Brazil	USA	Swiss	China	Israel	Thailand	India	Germany	Belgium	Denmark	Spain	France	Netherlands	Italy	UK
Bulbs, tubers, roots, vegetation or flowers, etc., roots	2006	NA	NA	NA	NA	NA	NA	NA	NA	NA	100.00	NA	NA	NA	0.28	0.26	8.00	NA	NA
	2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	100.00	NA	0.00	NA	0.41	NA	5.04	NA	NA
	2008	NA	0.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17.79	NA	4.00	NA	NA
	2009	NA	0.70	NA	NA	NA	NA	NA	NA	NA	NA	0.11	NA	NA	NA	0.16	6.29	NA	NA
	2010	NA	1.02	NA	NA	NA	NA	NA	NA	NA	NA	0.03	NA	NA	0.00	NA	3.80	NA	NA
Other live plants (including roots), cuttings and slips, mushroom spawn	2006	100.00	44.41	62.44	100.00	100.00	98.26	100.00	100.00	NA	NA	75.44	69.41	NA	33.46	95.02	52.85	10.12	96.35
	2007	100.00	81.21	82.17	100.00	100.00	98.81	NA	100.00	NA	NA	58.47	50.73	100.00	39.96	99.23	53.11	33.70	91.47
	2008	NA	81.35	49.90	NA	98.27	98.14	NA	NA	NA	NA	71.50	62.38	100.00	27.29	98.74	48.30	36.20	87.74
	2009	NA	50.56	21.18	NA	100.00	96.29	NA	NA	NA	NA	41.72	63.07	100.00	22.98	99.31	67.69	36.03	93.13
	2010	NA	59.94	44.58	NA	100.00	98.91	NA	NA	NA	100.00	35.66	62.07	100.00	22.42	99.51	74.20	24.13	98.17
Flowers and buds of p/branches / ornamental purposes, fresh, dried, etc.	2006	NA	49.78	37.56	NA	NA	1.71	NA	NA	NA	NA	7.63	2.60	NA	1.18	3.69	27.63	0.27	NA
	2007	NA	13.09	17.83	NA	NA	1.19	NA	NA	NA	NA	12.66	25.33	NA	2.07	0.10	28.48	NA	0.98
	2008	NA	13.43	49.69	NA	1.73	1.86	NA	NA	NA	NA	3.99	20.09	NA	3.41	0.56	38.45	NA	6.05
	2009	NA	43.98	68.51	NA	NA	3.71	NA	NA	NA	NA	NA	10.86	NA	1.50	0.06	18.54	NA	2.86
	2010	NA	24.26	54.08	NA	NA	1.09	NA	NA	NA	NA	NA	13.22	NA	5.15	NA	13.06	NA	0.48
Foliage, branches and other parts of plants, s / flowers / buttons, etc.	2006	NA	5.81	NA	NA	NA	0.03	NA	NA	NA	NA	16.93	27.99	NA	65.08	1.03	11.52	89.61	3.65
	2007	NA	5.70	NA	NA	NA	NA	NA	NA	NA	NA	28.87	23.94	NA	57.55	0.67	13.37	66.30	7.56
	2008	NA	4.97	0.40	NA	NA	NA	NA	NA	NA	NA	24.50	17.53	NA	51.52	0.70	9.25	63.80	6.20
	2009	NA	4.75	10.31	NA	NA	NA	NA	NA	NA	NA	58.16	26.07	NA	75.52	0.48	7.47	63.97	4.00
	2010	NA	14.77	1.34	NA	NA	NA	NA	NA	NA	NA	64.32	18.71	NA	72.43	0.49	8.94	75.87	1.35

The most important country for the Portuguese imports of flowers is clearly the Netherlands and after Spain (table 5).

Table 5. Flowers, in different forms, import percentage relatively to the total of each year

	Year	South Africa	Angola	Cape Verde	Brazil	USA	Swiss	China	Israel	Thailand	India	Germany	Belgium	Denmark	Spain	France	Netherlands	Italy	UK
Bulbs, tubers, roots, vegetation or flowers, etc., roots	2006	0.02	NA	NA	0.01	0.00	NA	0.02	0.08	1.41	NA	1.88	3.30	0.02	17.52	0.78	74.55	0.23	0.00
	2007	NA	NA	NA	NA	NA	NA	NA	0.17	0.14	NA	2.12	4.08	0.13	13.70	0.23	78.55	0.81	NA
	2008	NA	NA	NA	NA	NA	NA	NA	0.20	0.06	NA	1.89	2.88	0.06	10.69	1.32	80.55	2.27	0.06
	2009	0.01	NA	NA	NA	NA	NA	NA	0.10	0.08	0.02	0.24	0.11	0.03	1.67	0.24	97.48	0.01	NA
	2010	0.01	NA	NA	NA	NA	NA	NA	0.08	0.29	NA	1.74	0.49	NA	6.24	0.36	90.79	0.00	NA
Other live plants (including roots), cuttings and slips, mushroom spawn	2006	0.06	NA	NA	0.02	0.39	NA	0.06	0.09	0.00	NA	1.52	3.62	0.29	36.75	2.39	44.65	9.11	0.44
	2007	0.03	NA	NA	0.03	0.01	0.00	0.22	0.04	0.01	NA	1.71	2.14	0.16	37.01	2.78	44.63	8.85	0.53
	2008	0.05	NA	NA	0.00	0.05	NA	0.12	0.03	0.01	0.00	1.21	2.17	0.17	46.04	3.19	38.73	6.70	0.22
	2009	0.09	NA	NA	0.00	0.19	NA	0.09	0.05	NA	0.00	1.82	1.68	0.10	39.44	6.25	42.01	7.27	0.01
	2010	0.08	NA	NA	NA	0.01	NA	0.08	0.02	0.02	0.07	1.85	1.41	0.03	27.82	5.86	49.91	11.31	0.35
Flowers and buds of p/branches / ornamental purposes, fresh, dried, etc.	2006	1.63	NA	NA	2.52	NA	NA	0.02	0.00	NA	0.01	0.07	3.00	NA	12.89	0.08	75.14	0.09	1.24
	2007	1.60	NA	NA	2.33	0.00	NA	0.04	0.01	0.04	0.02	0.23	2.73	NA	16.87	0.91	68.40	2.22	0.18
	2008	1.40	NA	NA	1.57	NA	NA	0.00	0.01	0.04	0.05	0.25	1.18	NA	17.94	0.73	69.79	1.36	0.03
	2009	0.50	NA	NA	1.41	NA	NA	0.05	NA	0.28	0.06	0.28	NA	NA	30.74	2.47	59.01	0.10	NA
	2010	0.16	NA	NA	0.59	NA	NA	0.04	0.04	0.28	0.12	0.41	NA	NA	18.27	5.42	70.82	0.19	0.01
Foliage, branches and other parts of plants, s / flowers / buttons, etc.	2006	2.75	NA	NA	0.10	0.10	0.05	0.26	0.03	NA	1.72	1.06	2.66	0.23	16.51	5.56	64.25	0.95	2.48
	2007	2.40	NA	NA	0.32	0.13	NA	0.93	NA	NA	1.57	1.54	0.59	NA	21.04	0.82	66.21	1.17	0.42
	2008	1.53	NA	NA	0.60	0.05	NA	1.01	0.07	0.00	0.46	0.20	1.75	0.00	38.90	0.10	53.28	0.16	0.41
	2009	0.63	NA	NA	1.82	0.01	NA	0.31	NA	0.00	NA	0.98	6.30	NA	30.22	0.14	57.89	0.62	NA
	2010	0.53	NA	NA	1.24	0.01	NA	0.16	NA	0.01	1.81	2.30	2.11	NA	36.13	0.12	52.78	1.53	0.00

It can say the same to the Portuguese exports. The principal destination of the Portuguese flowers is the Netherlands and after Spain. However Spain is the first destination of Portuguese foliage, branches and other parts of plants, without flowers and buttons, etc (table 6).

Table 6. Flowers, in different forms, export percentage relatively to the total of each year

	Year	South Africa	Angola	Cape Verde	Brazil	USA	Swiss	China	Israel	Thailand	India	Germany	Belgium	Denmark	Spain	France	Netherlands	Italy	UK
Bulbs, tubers, roots, vegetation or flowers, etc., roots	2006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.16	NA	98.51	NA	NA
	2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.04	NA	NA	NA	4.57	1.00	92.65	NA	NA
	2008	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.06	NA	0.00	NA	6.39	NA	93.54	NA	NA
	2009	NA	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	80.54	NA	19.45	NA	NA
	2010	NA	0.07	NA	NA	NA	NA	NA	NA	NA	NA	0.11	NA	NA	NA	0.93	98.26	NA	NA
Other live plants (including roots), cuttings and slips, mushroom spawn	2006	0.01	0.10	0.01	0.02	0.61	0.81	0.05	NA	NA	NA	10.11	2.10	0.00	20.96	20.42	31.48	1.36	10.12
	2007	0.05	0.07	0.02	0.01	0.64	0.26	0.06	0.00	NA	NA	8.09	1.91	NA	27.58	18.23	30.59	1.71	9.07
	2008	0.00	0.25	0.02	0.02	0.25	0.27	NA	0.00	NA	NA	4.26	2.03	0.05	22.46	20.87	35.78	2.87	9.22
	2009	NA	0.27	0.01	NA	0.29	0.17	NA	NA	NA	NA	4.22	3.64	0.34	16.49	23.13	35.20	5.23	8.28
	2010	NA	0.19	0.01	NA	0.52	0.10	NA	NA	NA	NA	1.48	2.33	0.33	16.40	20.67	38.12	9.58	9.95
Flowers and buds of p/branches / ornamental purposes, fresh, dried, etc.	2006	NA	0.31	0.12	NA	NA	0.03	NA	NA	NA	NA	5.47	2.84	NA	2.82	3.05	82.13	2.26	0.10
	2007	NA	0.40	0.06	NA	NA	0.02	NA	NA	NA	NA	4.34	0.38	NA	5.16	3.75	84.68	0.24	NA
	2008	NA	0.18	0.02	NA	NA	0.01	NA	NA	NA	NA	4.11	4.51	NA	5.18	0.10	85.37	NA	0.44
	2009	NA	0.13	0.04	NA	0.02	0.01	NA	NA	NA	NA	0.72	3.79	NA	7.07	0.40	85.81	NA	1.75
	2010	NA	1.30	0.29	NA	NA	0.03	NA	NA	NA	NA	NA	3.20	NA	8.55	0.09	83.23	NA	2.44
Foliage, branches and other parts of plants, s / flowers / buttons, etc.	2006	NA	0.01	0.00	NA	NA	NA	NA	NA	NA	NA	2.77	1.11	NA	68.62	3.32	12.06	11.53	0.54
	2007	NA	0.01	NA	NA	NA	0.00	NA	NA	NA	NA	2.31	0.98	NA	68.22	0.25	8.48	19.29	0.44
	2008	NA	0.03	NA	NA	NA	NA	NA	NA	NA	NA	4.12	1.88	NA	63.36	0.28	17.64	11.07	1.49
	2009	NA	0.03	0.00	NA	NA	NA	NA	NA	NA	NA	2.67	1.99	NA	64.30	0.30	12.42	16.97	1.08
	2010	NA	0.02	0.01	NA	NA	NA	NA	NA	NA	NA	2.62	1.22	NA	68.34	0.13	5.33	21.57	0.54

3. Estimations results for the neoclassical model with panel data

The estimations results presented in the following tables, were obtained with the informatics program stata12, and are obtained with different method of estimation. Are presented all values for the different methods and the statistics tests. The statistics tests allow us to find the correct method and the correct estimation values.

The model used is the traditional model of the neoclassical theory (absolute convergence) of Solow (1956) with the development to panel data of Islam (1995).

In the table 7, presented below, it is observed the importance of the fixed effects, analyzing the statistics tests and the value of the constant coefficient. In another way, it is found strong signs of convergence observing the coefficients obtained with the static and dynamic panel data

econometrics methods.

Table 7. Results from the absolute convergence model for flowers import (absolute values)

	Const. ¹	Coef. ²	F/Wald(mod.) ³	F(Fe_OLS) ⁴	Corr(u_i) ⁵	F(Re_OLS) ⁶	Hausman ⁷	R ² ⁸	N.O. ⁹	N.I. ¹⁰
Bulbs, tubers, roots, vegetation or flowers, etc. and roots										
FE ¹¹	7.077* (2.730)	-0.645* (-2.850)	8.140*	1.230	-0.890	-----	-----	0.246	36	-----
RE ¹²	0.521 (0.490)	-0.070 (-0.780)	0.600	-----	-----	0.000	7.710*	-----	36	-----
OLS	0.521 (0.490)	-0.070 (-0.780)	0.600	-----	-----	-----	-----	0.012	36	-----
DPD ¹³	21.938* (3.730)	-1.922* (-3.820)	18.020*	-----	-----	-----	-----	-----	17	5
Other live plants (including roots), cuttings and slips and mushroom spawn										
FE ¹¹	15.275* (6.640)	-1.235* (-6.670)	44.550*	3.990*	-0.963	-----	-----	0.533	55	-----
RE ¹²	1.594** (1.880)	-0.133* (-1.990)	3.970*	-----	-----	1.440	40.760*	0.533	55	-----
OLS	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DPD ¹³	29.127* (6.130)	-2.324* (-6.160)	71.810*	-----	-----	-----	-----	-----	25	5
Flowers and buds cut for branches and ornamental purposes, fresh, dried, etc.										
FE ¹¹	10.231* (5.050)	-0.867* (-5.030)	25.300*	2.900*	-0.914	-----	-----	0.450	45	-----
RE ¹²	2.572* (2.650)	-0.217* (-2.680)	7.170*	-----	-----	0.210	18.250*	0.450	45	-----
OLS	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DPD ¹³	17.944* (4.180)	-1.518* (-4.200)	39.410*	-----	-----	-----	-----	-----	19	5
Foliage, branches and other parts of plants, without flowers and buttons, etc.										
FE ¹¹	6.972* (4.530)	-0.664* (-4.620)	21.360*	2.790*	-0.895	-----	-----	0.400	46	-----
RE ¹²	1.047 (1.440)	-0.110 (-1.650)	2.720*	-----	-----	0.000	18.960*	0.400	46	-----
OLS	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DPD ¹³	13.480* (6.260)	-1.268* (-6.350)	47.120*	-----	-----	-----	-----	-----	20	5

Note: 1, Constant; 2, Coefficient; 3, Test F for fixed effects model and test Wald for random effects and dynamic panel data models; 4, Test F for fixed effects or OLS (Ho is OLS); 5, Correlation between errors and regressors in fixed effects; 6, Test F for random effects or OLS (Ho is OLS); 7, Hausman test (Ho is GLS); 8, R square; 9, Number of observations; 10, Number of instruments; 11, Fixed effects model; 12, Random effects model; 13, Dynamic panel data model; *, Statically significant at 5%.

In the table 8, it is verified more or less the same referred for the table 7. To stress the results of the first estimations which is because a number of observations problem.

Table 8. Results from the absolute convergence model for flowers export (absolute values)

	Const. ¹	Coef. ²	F/Wald(mod.) ³	F(Fe_OLS) ⁴	Corr(u_i) ⁵	F(Re_OLS) ⁶	Hausman ⁷	R ² ⁸	N.O. ⁹	N.I. ¹⁰
Bulbs, tubers, roots, vegetation or flowers, etc. and roots										
FE ¹¹	0.929 (0.080)	-0.015 (-0.010)	0.000	0.880	0.361	-----	-----	0.073	9	-----
RE ¹²	1.995 (1.160)	-0.112 (-0.740)	0.550	-----	-----	0.000	0.010	0.073	9	-----
OLS	1.995 (1.160)	-0.112 (-0.740)	0.550	-----	-----	-----	-----	0.073	9	-----
DPD ¹³	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Other live plants (including roots), cuttings and slips and mushroom spawn										
FE ¹¹	14.922* (5.010)	-1.192* (-5.020)	25.190*	2.920*	-0.978	-----	-----	0.419	52	-----
RE ¹²	0.257 (0.360)	-0.021 (-0.370)	0.140	-----	-----	1.410	25.770*	0.419	52	-----
OLS	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DPD ¹³	8.711* (3.200)	-0.683* (-3.220)	22.470*	-----	-----	-----	-----	-----	22	5
Flowers and buds cut for branches and ornamental purposes, fresh, dried, etc.										
FE ¹¹	11.467* (4.580)	-1.058* (-4.650)	21.660*	3.320*	-0.938	-----	-----	0.485	34	-----
RE ¹²	2.379	-0.233	3.890*	-----	-----	0.820	18.020*	0.485	34	-----

	(1.770)	(-1.970)								
OLS	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DPD¹³	15.450* (4.630)	-1.427* (-4.660)	41.910*	-----	-----	-----	-----	-----	15	5
Foliage, branches and other parts of plants, without flowers and buttons, etc.										
FE¹¹	11.092* (7.540)	-0.878* (-7.460)	55.720*	20.970*	-0.943	-----	-----	0.708	33	-----
RE¹²	6.002* (5.590)	-0.473* (-5.560)	30.920*	-----	-----	4.040*	24.360*	0.708	33	-----
OLS	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DPD¹³	18.512* (6.000)	-1.450* (-5.990)	38.690*	-----	-----	-----	-----	-----	16	5

In the table 9 to stress the fact of the first estimations have results statistically less significant.

Table 9. Results from the absolute convergence model for flowers import (percentage values relatively to the total of each country)

	Const. ¹	Coef. ²	F/Wald(mod.) ³	F(Fe_OLS) ⁴	Corr(u_i) ⁵	F(Re_OLS) ⁶	Hausman ⁷	R ² ⁸	N.O. ⁹	N.I. ¹⁰
Bulbs, tubers, roots, vegetation or flowers, etc. and roots										
FE¹¹	0.632 (1.720)	-0.533* (-2.870)	8.230*	1.380	-0.791	-----	-----	0.286	34	-----
RE¹²	-0.142 (-0.510)	-0.065 (-0.600)	0.360	-----	-----	0.000	9.580*	0.286	34	-----
OLS	-0.142 (-0.510)	-0.065 (-0.600)	0.360	-----	-----	-----	-----	0.020	34	-----
DPD¹³	1.569* (4.360)	-1.150* (-6.340)	50.420*	-----	-----	-----	-----	-----	15	5
Other live plants (including roots), cuttings and slips and mushroom spawn										
FE¹¹	1.337* (2.940)	-0.326* (-2.750)	7.540*	3.450*	-0.535	-----	-----	0.162	55	-----
RE¹²	0.630* (2.130)	-0.149* (-2.010)	4.030*	-----	-----	1.760	3.610	0.162	55	-----
OLS	0.578* (2.500)	-0.127* (-2.180)	4.740*	-----	-----	-----	-----	0.065	55	-----
DPD¹³	2.282* (4.110)	-0.525* (-3.680)	48.600*	-----	-----	-----	-----	-----	25	5
Flowers and buds cut for branches and ornamental purposes, fresh, dried, etc.										
FE¹¹	2.940* (5.410)	-1.138* (-5.950)	35.350*	2.890*	-0.805	-----	-----	0.549	43	-----
RE¹²	0.603 (1.460)	-0.281* (-2.100)	4.390*	-----	-----	0.000	39.280*	0.549	43	-----
OLS	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DPD¹³	5.961* (9.880)	-2.185* (-10.250)	118.920*	-----	-----	-----	-----	-----	19	5
Foliage, branches and other parts of plants, without flowers and buttons, etc.										
FE¹¹	1.241* (4.660)	-0.992* (-5.990)	35.880*	3.690*	-0.772	-----	-----	0.521	47	-----
RE¹²	0.576 (1.800)	-0.470* (-3.620)	13.120*	-----	-----	0.090	25.690*	0.521	47	-----
OLS	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DPD¹³	2.165* (4.510)	-1.839* (-5.010)	27.710*	-----	-----	-----	-----	-----	21	5

For the table 10, of referring, again, the problem of the number of observations.

Table 10. Results from the absolute convergence model for flowers export (percentage values relatively to the total of each country)

	Const. ¹	Coef. ²	F/Wald(mod.) ³	F(Fe_OLS) ⁴	Corr(u_i) ⁵	F(Re_OLS) ⁶	Hausman ⁷	R ² ⁸	N.O. ⁹	N.I. ¹⁰
Bulbs, tubers, roots, vegetation or flowers, etc. and roots										
FE¹¹	0.339 (0.400)	-0.003 (-0.000)	0.000	1.530	0.273	-----	-----	0.049	10	-----
RE¹²	0.356 (0.580)	-0.070 (-0.260)	0.070	-----	-----	0.000	0.000	0.049	10	-----
OLS	0.417 (0.890)	-0.145 (-0.640)	0.410	-----	-----	-----	-----	0.071	10	-----
DPD¹³	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Other live plants (including roots), cuttings and slips and mushroom spawn										
FE¹¹	3.752*	-0.901*	44.580*	2.810*	-0.851	-----	-----	0.567	50	-----

	(6.660)	(-6.680)								
RE ¹²	0.993* (2.940)	-0.239* (-2.960)	8.780*	-----	-----	0.000	37.420*	0.567	50	-----
OLS	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DPD ¹³	6.280* (5.800)	-1.523* (-5.860)	40.180*	-----	-----	-----	-----	-----	23	5
Flowers and buds cut for branches and ornamental purposes, fresh, dried, etc.										
FE ¹¹	2.491* (7.180)	-1.359* (-7.990)	63.820*	9.610*	-0.873	-----	-----	0.744	32	-----
RE ¹²	0.533 (1.280)	-0.357* (-2.180)	4.750*	-----	-----	0.060	482.300*	0.744	32	-----
OLS	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DPD ¹³	4.391* (3.460)	-2.296* (-3.540)	24.580*	-----	-----	-----	-----	-----	14	5
Foliage, branches and other parts of plants, without flowers and buttons, etc.										
FE ¹¹	3.309* (7.910)	-1.360* (-7.980)	63.750*	8.470*	-0.947	-----	-----	0.727	34	-----
RE ¹²	0.447 (1.540)	-0.171 (-1.700)	2.880	-----	-----	1.050	75.260*	0.727	34	-----
OLS	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DPD ¹³	2.299 (1.420)	-0.964 (-1.460)	4.210	-----	-----	-----	-----	-----	16	5

Table 11 presents, again, the problem of the results statistically less significant for the first estimations.

Table 11. Results from the absolute convergence model for flowers import (percentage values relatively to the total of each year)

	Const. ¹	Coef. ²	F/Wald(mod.) ³	F(Fe_OLS) ⁴	Corr(u_i) ⁵	F(Re_OLS) ⁶	Hausman ⁷	R ² ⁸	N.O. ⁹	N.I. ¹⁰
Bulbs, tubers, roots, vegetation or flowers, etc. and roots										
FE ¹¹	-0.446 (-1.840)	-0.751* (-3.480)	12.120*	1.420	-0.879	-----	-----	0.327	36	-----
RE ¹²	-0.298 (-1.190)	-0.123 (-1.220)	1.490	-----	-----	0.000	10.850*	0.327	36	-----
OLS	-0.298 (-1.190)	-0.123 (-1.220)	1.490	-----	-----	-----	-----	0.014	36	-----
DPD ¹³	8.233 (1.500)	-0.735 (-1.600)	6.560*	-----	-----	-----	-----	-----	10	5
Other live plants (including roots), cuttings and slips and mushroom spawn										
FE ¹¹	-1.087* (-5.460)	-1.207* (-6.610)	43.710*	4.050*	-0.962	-----	-----	0.529	55	-----
RE ¹²	-0.177 (-0.790)	-0.147* (-2.120)	4.510*	-----	-----	1.160	39.350*	0.529	55	-----
OLS	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DPD ¹³	-1.682* (-6.340)	-2.243* (-6.530)	76.030*	-----	-----	-----	-----	-----	25	5
Flowers and buds cut for branches and ornamental purposes, fresh, dried, etc.										
FE ¹¹	-0.443* (-2.450)	-0.854* (-5.040)	25.410*	2.970*	-0.910	-----	-----	0.451	45	-----
RE ¹²	-0.074 (-0.310)	-0.221* (-2.700)	7.290*	-----	-----	0.160	18.190*	0.451	45	-----
OLS	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DPD ¹³	-0.718* (-2.890)	-1.462* (-4.020)	40.340*	-----	-----	-----	-----	-----	19	5
Foliage, branches and other parts of plants, without flowers and buttons, etc.										
FE ¹¹	-0.117 (-0.990)	-0.683* (-4.730)	22.370*	2.930*	-0.890	-----	-----	0.411	46	-----
RE ¹²	-0.130 (-0.750)	-0.139 (-1.950)	3.810*	-----	-----	0.000	18.740*	0.411	46	-----
OLS	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DPD ¹³	-0.104 (-0.950)	-1.315* (-6.600)	52.290*	-----	-----	-----	-----	-----	20	5

In the table 12, more one time the problem of the number of observations in the first estimations.

Table 12. Results from the absolute convergence model for flowers export (percentage values relatively to the total of each year)

	Const. ¹	Coef. ²	F/Wald(mod.) ³	F(Fe_OLS) ⁴	Corr(u_i) ⁵	F(Re_OLS) ⁶	Hausman ⁷	R ²⁸	N.O. ⁹	N.I. ¹⁰
Bulbs, tubers, roots, vegetation or flowers, etc. and roots										
FE ¹¹	1.590 (1.650)	-0.601 (-0.900)	0.810	0.760	-0.897	-----	-----	0.455	9	-----
RE ¹²	1.084 (2.490*)	-0.215 (-1.770)	3.130	-----	-----	0.440	0.350	0.455	9	-----
OLS	1.090 (2.570*)	-0.217 (-1.820)	3.320	-----	-----	-----	-----	0.225	9	-----
DPD ¹³	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Other live plants (including roots), cuttings and slips and mushroom spawn										
FE ¹¹	-0.044 (-0.430)	-1.167* (-4.910)	24.120*	2.850*	-0.978	-----	-----	0.408	52	-----
RE ¹²	-0.061 (-0.400)	-0.020 (-0.370)	0.140	-----	-----	1.330	24.640*	0.408	52	-----
OLS	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DPD ¹³	0.127 (0.088)	-0.705* (-3.210)	22.030*	-----	-----	-----	-----	-----	22	5
Flowers and buds cut for branches and ornamental purposes, fresh, dried, etc.										
FE ¹¹	-0.150 (-0.870)	-0.981* (-4.110)	16.900*	2.870*	-0.932	-----	-----	0.424	34	-----
RE ¹²	-0.120 (-0.380)	-0.228 (-1.920)	3.670	-----	-----	0.620	13.220*	0.424	34	-----
OLS	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DPD ¹³	-0.281 (-1.610)	-1.462* (-4.580)	32.900*	-----	-----	-----	-----	-----	15	5
Foliage, branches and other parts of plants, without flowers and buttons, etc.										
FE ¹¹	0.461* (4.880)	-0.953* (-6.790)	46.160*	12.790*	-0.955	-----	-----	0.667	33	-----
RE ¹²	0.205 (0.580)	-0.404* (-4.630)	21.480*	-----	-----	1.860	24.630*	0.667	33	-----
OLS	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DPD ¹³	1.121* (6.130)	-1.556* (-6.500)	48.480*	-----	-----	-----	-----	-----	16	5

Tables 13, 14 and 15, present the same data, but more aggregated. Give us another perspective of the data.

Table 13. Results from the absolute convergence model for all flowers (absolute values)

	Const. ¹	Coef. ²	F/Wald(mod.) ³	F(Fe_OLS) ⁴	Corr(u_i) ⁵	F(Re_OLS) ⁶	Hausman ⁷	R ²⁸	N.O. ⁹	N.I. ¹⁰
Import										
FE ¹¹	9.590* (9.000)	-0.833* (-9.110)	82.930*	2.390*	-0.927	-----	-----	0.390	182	-----
RE ¹²	1.138* (2.830)	-0.106* (-3.140)	9.880*	-----	-----	2.220	73.110*	0.390	182	-----
OLS	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DPD ¹³	19.238* (9.590)	-1.653* (-9.700)	147.870*	-----	-----	-----	-----	-----	81	5
Export										
FE ¹¹	12.048* (7.820)	-1.001* (-7.800)	60.890*	3.580*	-0.956	-----	-----	0.409	128	-----
RE ¹²	2.238* (3.720)	-0.185* (-3.720)	13.830*	-----	-----	0.130	47.580*	0.409	128	-----
OLS	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DPD ¹³	14.249* (6.390)	-1.160* (-6.390)	91.770*	-----	-----	-----	-----	-----	56	5

Table 14. Results from the absolute convergence model for all flowers (percentage values relatively to the total of each country)

	Const. ¹	Coef. ²	F/Wald(mod.) ³	F(Fe_OLS) ⁴	Corr(u_i) ⁵	F(Re_OLS) ⁶	Hausman ⁷	R ²⁸	N.O. ⁹	N.I. ¹⁰
Import										
FE ¹¹	1.940* (8.550)	-0.810* (-9.340)	87.300*	2.570*	-0.854	-----	-----	0.407	179	-----
RE ¹²	0.211	-0.115*	6.220*	-----	-----	0.670	89.410*	0.407	179	-----

	(1.470)	(-2.490)								
OLS	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DPD¹³	3.557* (11.000)	-1.440* (-11.480)	161.100*	-----	-----	-----	-----	-----	80	5
Export										
FE¹¹	3.586* (11.970)	-1.263* (-12.110)	146.580*	5.750*	-0.946	-----	-----	0.628	126	-----
RE¹²	0.610* (3.020)	-0.218* (-3.650)	13.340*	-----	-----	1.340	149.030*	0.628	126	-----
OLS	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DPD¹³	5.338* (6.590)	-1.845* (-6.610)	83.070*	-----	-----	-----	-----	-----	55	5

Table 15. Results from the absolute convergence model for all flowers (percentage values relatively to the total of each year)

	Const. ¹	Coef. ²	F/Wald(mod.) ³	F(Fe_OLS) ⁴	Corr(u_i) ⁵	F(Re_OLS) ⁶	Hausman ⁷	R ² ⁸	N.O. ⁹	N.I. ¹⁰
Import										
FE¹¹	-0.466* (-5.380)	-0.848* (-9.480)	89.840*	2.430*	-0.919	-----	-----	0.409	182	-----
RE¹²	-0.132 (-1.400)	-0.123* (-3.570)	12.770*	-----	-----	2.010	77.080*	0.409	182	-----
OLS	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DPD¹³	-0.739* (-7.790)	-1.714* (-9.820)	161.170*	-----	-----	-----	-----	-----	81	5
Export										
FE¹¹	0.211* (2.910)	-0.986* (-7.960)	63.290*	3.590*	-0.953	-----	-----	0.418	128	-----
RE¹²	0.042 (0.270)	-0.196* (-3.900)	15.180*	-----	-----	0.320	48.570*	0.418	128	-----
OLS	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DPD¹³	0.566* (5.810)	-1.287* (-7.570)	99.180*	-----	-----	-----	-----	-----	56	5

Using tests of stationary, it is analyzed the volatility of the data, and it is verified that all the results for all the tests are not significant, so we can conclude about no stationary of the data.

4. Conclusions

The most important relationship of Portugal with the world in the international trade of flowers is with the Europe, namely with Netherlands and Spain. So, there is a tendency to trade flowers with the neighbors, to economize costs of transport. Portugal import and export in particular other live plants (including roots), cuttings and slips and mushroom spawn.

There are strong signs of convergence in this international trade of flowers. In the majority of the results the values have statistical significance. So, we have convergence in the import and export of flowers.

In terms of stationary of the results we find a preoccupant volatility of the values for the different forms of flowers imports and exports. These results can compromise the conclusions presented before. This means that we do not have a coherent Policy for the international trade of flowers.

When we speak about tradable products like the flowers, is important to have a good policy for the international trade, because, as said by the Keynesian theory the external demand (exports) are the engine of the national product.

Anyway, this is a contribution to the international trade flowers sector understanding, using Portugal as the central country.

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