

The Euro Area north-south structural economic divide: an input-output perspective

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Abstract. The great recession of 2008/2009 and the subsequent sovereign debt crises highlighted the existence of deep structural imbalances in the Euro Area: the large differences of competitiveness and growth potential between its northern and southern countries. In this paper, an input-output approach is used to study several facets of this phenomenon, namely the connection between current account (trade) imbalances and domestic final demand levels, as well as the sectoral specialization of tradable goods and services production. In the uncompetitive (current account deficit) economies of southern euro area, domestic final demand levels are in excess of its equilibrium values and the opposite occurs in the strong, competitive economies of the north. These external unbalances are parallel to, and in good measure explained by, a different geographic pattern of specialization favourable to the northern euro-area countries (sectors with higher value added and more intensive technological activities). The external dependency and value added generation capacity of the productive sectors of these economies are also quantified, with a new treatment of inter-industry output multipliers which follows closely Amaral et al (2011). The (gross) output growth potential given by the column sums of the Leontief inverse matrix (backward linkage indicators) results from three terms: inter-industry flows, value added and imported inputs. After a convenient arrangement of these terms, the evolution of backward linkage indicators can be used to detect structural changes, particularly quantifying a (net) growth effect (more value-added generation) and an external dependency effect (more imported inputs), and to classify the productive sectors accordingly. The empirical results of the paper are based on input-output tables for several years: 1995, 2000, 2005 and 2008, available in the World Input Output Database. The northern euro-area group is formed by Germany, Netherlands, Finland and Ireland. The southern is the so-called GIPS group (Greece, Italy, Portugal and Spain).

Keywords: input-output linkages, external dependency, structural change, Euro Area countries

JEL classification: C67, D57

1. Introduction

The great recession of 2008/2009 and the subsequent sovereign debt crises highlighted the existence of deep structural imbalances in the Euro Area: the large differences of competitiveness and growth potential between its northern and southern countries. In this paper, an input-output approach is used to study several facets of this phenomenon, namely the connection between current account (trade) imbalances and domestic final demand levels, as well as the sectoral specialization of tradable goods and services production.

In the uncompetitive (that is originating significant and persistent current account deficits) economies of southern euro area, domestic final demand levels are in excess of its equilibrium values and the opposite occurs in the strong, competitive economies of the north. These external unbalances are parallel to, and in good measure explained by, a different geographic pattern of specialization favourable to the northern euro-area countries (sectors with higher value added and more intensive technological activities).

The external dependency and value added generation capacity of the productive sectors of these economies are also quantified, with a new treatment of inter-industry output multipliers which follows closely Amaral et al (2011). The (gross) output growth potential given by the column sums of the Leontief inverse matrix (backward linkage indicators) results from three terms: inter-industry flows, value added and imported inputs. After a convenient arrangement of these terms, the evolution of backward linkage indicators can be used to detect structural changes, particularly quantifying a (net) growth effect (more value-added generation) and an external dependency effect (more imported inputs), and to classify the productive sectors accordingly.

For a clear exposition of the basic structure and main results of the classical Leontief model, see Miller and Blair (2009). An interesting survey and discussion of the widely applied concepts of backward and forward linkages, based on the pioneering work of Rasmussen (1956) and Hirschman (1958) is made in Drejer (2002). Sophisticated methods to deal with structural change at the sectoral level have been proposed, among others, by Ditzgenbacher (1992, 2005), Sonis *et al* (1995), Dietzenbacher and van der Linden (1997), Dridi and Hewings (2002).

In this paper, a different strategy is chosen, based on a simple, but suggestive, treatment of basic input-output concepts, namely output multipliers, value added and imported intermediates coefficients, domestic final demand and export structures, industries supply and demand equilibrium relations, which can give a meso-economic (sectoral) content to important macroeconomic imbalances and unsustainable structural paths of some countries in the extremely open and globalized world economy of our days.

An empirical application is made to eight euro-area countries, based on input-output tables for several years: 1995, 2000, 2005 and 2008, available in the World Input Output Database. These countries were divided in two groups: a northern one formed by Germany, the Netherlands, Finland and Ireland, and a southern one, the so-called GIPS (Greece, Italy, Portugal and Spain).

2. Methodology

2.1 Trade unbalances and domestic final demand excess or insufficiency

In this subsection a relation is made between the international trade unbalances and the levels of domestic final demands and exports. Countries with a trade deficit (surplus)

have an excessive (insufficient) level of domestic final demand, or, correspondently insufficient (excessive) level of goods and services exports.

If va_D is the value added content of domestic final demand (D) and va_E is the same content for (goods and services) Exports (E), we can write:

$$(1) Y = va_D + va_E,$$

where Y is the Gross Domestic Product (GDP).

If the international trade relations are balanced, we would have:

$$E = (1 - va_D) D + (1 - va_E) E,$$

where the right member of (2) corresponds, of course, to (goods and services) imports.

That is to say, in (external) equilibrium (with trade account balanced), the relation between exports and domestic final demand must be:

$$(2) E^*/D^* = (1 - va_D)/va_E$$

If E/D is the relation actually verified, then the difference $E^*/D^* - E/D$ gives, if positive, the excess of domestic final demand (or insufficiency of exports) relative to the situation of trade balance (exports = imports), and gives, if negative, the insufficiency of domestic final demand (or excess of exports), of course. These deviations can be expressed as percentages and calculated for each year or for an average of an entire period as the summation $\sum_I^T (E^*/D^* - E/D)$, divided by T .

2.2 Export contribution to GDP: a sectoral analysis

The contribution of sector's i exports to GDP , EY_i (direct + indirect) can be calculated as follows:

$$(3) EY_i = a^V L_i E_i,$$

where:

\mathbf{a}^V is the (row) vector of value added coefficients (VA/GO) of the n industries of the economy, being GO the gross output;

L_i is the vector of the output multipliers matrix (Leontief inverse) corresponding to column i , which gives the output of each sector needed to fulfill one additional unit of final demand directed to sector i ;

E_i is the value of exports of sector i .

The contribution of sector i exports to GDP can be measured in relative terms, i.e., divided by the value of GDP (Y), through the following indicator:

$$(4) \mathbf{EYR}_i = \mathbf{EY}_i / Y = \mathbf{a}^V L_i E_i / \mathbf{a}^V \mathbf{x},$$

where \mathbf{x} is the (column) vector of gross output (GO) values of the n industries.

This indicator can be formulated as follows:

$$(5) \mathbf{EYR}_i = (\mathbf{v}_i^*) (E_i/E) (E/Y),$$

where E is the value of total exports of the economy and $\mathbf{v}_i^* = \mathbf{a}^V L_i$.

The first factor of the product in (6) depends on meso-economic policies (for example, cluster policies) of reinforcement of the industrial network; the second depends on sectoral measures for improving the exports of each industry i ; the third depends on macroeconomic policies for improving the exports of all sectors.

Each industry can be classified according to the value of \mathbf{EYR}_i and, with more detail, by each one of the two first factors (as the third is equal for all). It is particularly interesting to see the “export specialization” of each country and its evolution in time.

2.3 Net growth (or efficiency) and external dependency effects

The Rasmussen traditional method of using compact indicators from the output multipliers matrix (Leontief inverse) is one of the classical references for the analysis of intersectoral relations. It is well known that this matrix is obtained by solving an n

equations system that equates sector productions to possible uses: intermediate and final demand. This system can be represented as follows:

$$(6) \mathbf{x} = \mathbf{A} \mathbf{x} + \mathbf{y},$$

where \mathbf{A} is the (domestic) technical coefficients matrix; \mathbf{x} is the sectoral gross output vector and \mathbf{y} is the (domestic) sectoral final demand vector.

The solution of this system is:

$$(7) \mathbf{x} = \mathbf{L} \mathbf{y},$$

with $\mathbf{L} = (\mathbf{I} - \mathbf{A})^{-1}$

Each element of \mathbf{L} is an output multiplier, giving the total (direct plus indirect) effect in one's sector output of a unitary increase in domestic final demand of a given sector. That is, l_{ij} is the global impact on the sector i output when the domestic final demand of sector j increases by one unity.

Particular interest in this context has the notion of backward linkage indicators:

$$(8) l_{0j} = \sum_{i=1}^n l_{ij} \quad (j = 1, \dots, n)$$

This indicator results from summing up the n values of column j and gives the effect on total output (of all sectors) of a unitary change in the final demand directed to j sector. The larger the value of this coefficient, the larger will be the impact of this increase of the final demand on the sector concerned and on all the others.

The backward linkage indicators can be used to evaluate the gains in the capacity of an economy to generate value added and the changes in external dependency of an economy from one year to another.

The overall effect of a unity change of final demand is the sum of three terms: interindustry flows, value added and imported inputs. Moreover, an important property applies: the second and last terms sum up unity, exactly the value of the initial

(exogenous) stimulus, and this is so because in equilibrium the total value of sectoral final demand equals the gross value added plus imported inputs of all sectors.

Using this property, and after a convenient arrangement of terms, the evolution of backward linkage indicators, value added and imported input coefficients over time can be used to detect structural changes in the economy.

Particularly, we can quantify the capacity to generate more (or less) value-added by unity of final demand (what in some sense we can call an ‘efficiency effect’, although a peculiar one¹), and the need to import more (or less) intermediate inputs (a certain kind of ‘external dependency effect’). And we can classify the productive sectors according to the particular combination of both effects, finding a new kind of “key sectors”, those presenting a positive “efficiency” change and a negative “dependency” change.

One way to express formally these ideas is as follows. Considering a unitary increase in j sector’s final demand, $\Delta y_j = 1$, its effects on total production are:

$$(9) \quad \sum_i \Delta x_i = \sum_i l_{ij} = l_{0j}$$

By the equilibrium condition between total sectoral final demand and total primary inputs, we have:

$$(10) \quad \Delta y_j = 1 \Rightarrow \Delta (\sum_i v_i + \sum_i m_i) = 1,$$

where v_i and m_i are the value added and the value of imported inputs used by sector i .

Defining, and assuming as constants, the value-added coefficients ($a^v_i = v_i/x_i$) as well as the imported inputs coefficients ($a^m_i = m_i/x_i$), we have:

$$(11) \quad 1 = \sum_i l_{ij} a^v_i + \sum_i l_{ij} a^m_i$$

Dividing both sides of (12) by l_{0j} :

$$(12) \quad 1/l_{0j} = \sum_i (l_{ij} a^v_i) / \sum_i l_{ij} + \sum_i (l_{ij} a^m_i) / \sum_i l_{ij},$$

¹ In order to avoid terminological confusion we call this ‘efficiency effect’ a ‘net growth effect’.

and, representing by v^*_j and m^*_j the terms in the right hand side of (13) (the weighted average of value-added and imported inputs coefficients, respectively), we arrive finally at:

$$(13) \quad \mathbf{1} = l_{0j} (v^*_j + m^*_j).$$

This expression can be used in a dynamic (or, as in the present paper, in a comparative static) exercise to detect and quantify the changes in the productive structure of an economy.

Suppose that, for each sector j , we have, between two given years, a **decrease in l_{0j}** . This means that, in order to satisfy a unitary increase in sector j final demand it is necessary a smaller increase in the global production of the economy.

It is also true that, in this case, we must have $\Delta m^*_j + \Delta v^*_j > 0$, and so four situations are possible, in a two dimensional space with axes Δv^*_j and Δm^*_j :

- when $\Delta v^*_j > 0$ and $\Delta m^*_j < 0$, the decrease in b_{0j} goes with a larger capacity to generate value added (a beneficial ‘net’ growth effect) and a lower necessity of imported inputs (a reduced external dependency effect) – let’s call this **area A**, the most virtuous one;
- if $\Delta v^*_j > 0$, $\Delta m^*_j > 0$ and $\Delta v^*_j / \Delta m^*_j > 1$, there is a simultaneous increase in ‘net growth effect’ and ‘external dependency’, with the first dominating the second (**area B**);
- with $\Delta m^*_j > 0$, $\Delta v^*_j > 0$, but $\Delta m^*_j / \Delta v^*_j > 1$, the increase in ‘external dependency’ is relatively more significant than the increase in ‘net growth effect’ (**area C**);
- finally, with $\Delta m^*_j > 0$ and $\Delta v^*_j < 0$, the decrease in b_{0j} is totally due to an increase in ‘external dependency’, with a simultaneous decrease in the capacity to generate value added (**area D**, the most disadvantageous situation).

For the case of a l_{0j} **increase** we must have $\Delta m^*_{j} + \Delta v^*_{j} < 0$, a worse situation for the economy, at least from the ‘capacity to generate more value added’ point of view. The four possible areas now are (in a descending order):

- **Area A’**: $\Delta v^*_{j} > 0$ and $\Delta m^*_{j} < 0$, with $\Delta v^*_{j} < |\Delta m^*_{j}|$
- **Area B’**: $\Delta v^*_{j} < 0$ and $\Delta m^*_{j} < 0$, with $|\Delta v^*_{j}| < |\Delta m^*_{j}|$
- **Area C’**: $\Delta v^*_{j} < 0$ and $\Delta m^*_{j} < 0$, with $|\Delta v^*_{j}| > |\Delta m^*_{j}|$
- **Area D’**: $\Delta v^*_{j} < 0$ and $\Delta m^*_{j} > 0$, with $|\Delta v^*_{j}| > \Delta m^*_{j}$

In practical terms, a suggestive way of analysis is the graphical presentation of Δv^*_{j} and Δm^*_{j} values in the two-dimensional space above described, distributing the position of the sectors in the possible areas A, B, C, D (for a l_{0j} decrease) and A’, B’, C’, D’ (for a l_{0j} increase). The structural change is more beneficial to an economy when more sectors concentrate on A and A’ areas and less on areas D and D’.

3. Empirical application

In this section the methods and techniques described in section 2 are applied to a group of euro-area countries, divided in two subgroups, named North-EA (Germany, Netherlands, Finland and Ireland) and South-EA (Greece, Italy, Portugal and Spain).

The main purpose is to show, from an input-output perspective, the different structural conditions of productive efficiency and external competitiveness of both groups, a subject of major importance in all circumstances, but overwhelmingly so after the serious global economic crisis of 2008/2009 and subsequent sovereign debt crises of Eurozone periphery countries.

The main database used was the national input-output tables of these eight countries from WIOD and the period covered corresponds to all the years for which data

was available: 1995-2011. For a detailed description of this database see Timmer (2012).

The main results obtained are organized in the 3 subsections of section 2 and were the following.

3.1 Trade imbalances and domestic final demand excess or insufficiency in Euro-Area northern and southern countries

It is a fact well known that southern EA countries (particularly Greece and Portugal) have accumulated in several years before the great recession strong trade and current account imbalances. The other side of this coin is the corresponding large surplus of these accounts in the northern countries (particularly Germany). The numbers, in percentage of GDP, are illustrated in Table 1.

< Table 1 here >

The contribution of our input-output based analysis to this subject is to quantify the connection between these negative or positive trade imbalances and the respective excess or insufficiency of domestic final demand level, relative to the trade balanced situation. The suggestive results of Table 2 allow us to conclude that in Greece the average excess of domestic final demand is more than 14% of GDP and in Portugal it is almost 12%. This excess is much lower in Spain (4%) and it does not even exist in Italy, a country with no trade and current account problems. On the other side, Germany have had in this period a weak domestic final demand, around -5% of GDP relative to the value equilibrating its trade balance, and the situation is even more pronounced in the other northern countries (-10,3% in the Netherlands; -8,4% in Finland). Remarkable is the situation of one of the most punished countries by the sovereign debt crisis of 2010/2011, Ireland, with a large trade surplus of almost 14% of GDP, and a

corresponding “insufficiency” of domestic final demand of 26%, showing that this country is in fact “northern” and not “southern” (or “peripheral”) in efficiency and competitiveness matters, and will recover easily after its bank crisis is resolved.

< Table 2 here >

3.2 Export contribution to GDP: a sectoral analysis of Euro-Area northern and southern countries

According to the methodology proposed in sub-section 2.2, the relative contribution of each sector’s export to GDP is measured by $EYR_i = (v_i^*) (E_i/E) (E/Y)$, depending on three factors: the value added associated with an unitary increase in sector’s i exports, the weight of sector’s i exports in total exports and the weight of total exports in GDP.

Starting by the last factor - the least interesting as it is common to all sectors in each country - the results of Table 3 show that the southern countries are considerably less open to international trade, as far as exports is concerned, particularly Greece, with a ratio of only 15%, and the other countries always under 30%, while the northern countries are very open, including Germany, a relatively large economy, mainly after 2000, but especially Ireland, with more than 100% in 2011.

< Table 3 here >

The first indicator in the right hand product, v_i^* , is also not very informative, because it tends to be similar in all countries, with service sectors at the top of the scale. This can be confirmed in the results presented on Table 4, showing the top 10 sectors for each of the eight countries studied here.

< Table 4 here >

Let us look carefully, then, to the second right hand factor of the product, direct export specialization of the countries, and emphasize that the northern countries have an

advantage in this context, with a larger role played by technologically advanced sectors, particularly in Germany (Transport Equipment; Electrical and Optical Equipment; Machinery; Chemicals), while in southern, more peripheral countries (Greece and Portugal) the so-called traditional sectors prevail (Textiles, Food, Beverages and Tobacco, Pulp, Paper and Printing). However, particularly in Portugal, an upgrade along the exports quality ladder has been made between 1995 and 2011.

< Table 5 here >

Combining the three previous factors, everything converges to a worse export specialization in the southern countries, measured by the relative contribution of export sectors to GDP, EYR_i , as it is well illustrated in the results of Table 6.

< Table 6 here >

In this context, as the value added multiplier tends to be larger in the case of traditional sectors, the predominant role of these sectors in Euro-Area southern countries is even clearer. For example, in Portugal the main exporting sector since 2005 is Transport Equipment, with Textiles in the second position, while in terms of export contribution to GDP Textiles comes first in all years and Transport Equipment falls to fourth in 2011.

3.3 Net growth (or efficiency) and external dependency effects in Euro-Area countries

In order to better understand and compare the evolution of the productive structure at the sectoral level in southern and northern Euro Area Countries, the methodology presented in sub-section 2.3 was applied to these cases, considering changes for the entire period under consideration, 1995-2011.

The results for each country are shown in Tables 7 to 12. As Italy and Ireland are in a certain sense atypical countries, in its respective sub-groups, for economy of space its results are omitted.

< Tables 7 to 12 here >

According to this method, the improvement of sectoral productive conditions is expected to provoke declines in output multipliers (\mathbf{l}_{0j}), in the sense that the same level of final demand requires lower gross output values, associated to increases in value added indicators, ν^*_j and decreases in imported inputs indicators, \mathbf{m}_{0j} . This means that the more virtuous area is A.

The surprising result obtained in this application to several Euro area countries is the remarkable absence of sectors in this virtuous area in most of the northern countries, and the apparent better performance of Greece, with eight sectors in this area, and Portugal with three. One possible explanation for this puzzling outcome is the effect of greater imported input coefficients in northern, more competitive, economies due to a more intense integration in global value chains, and delocalization of intermediate inputs production to eastern European countries (Timmer et al, 2012; 2013), but this conjecture needs more, and careful, research.

4. Concluding remarks

In this paper, an input-output approach was used to study the large differences of competitiveness and growth potential between several northern and southern countries of the Euro area, namely the connection between current account (trade) imbalances and domestic final demand levels, as well as the sectoral specialization of tradable goods and services production.

The empirical results of the paper are based on input-output tables for several years: 1995, 2000, 2005 and 2008, available in the World Input Output Database. The northern euro-area group is formed by Germany, Netherlands, Finland and Ireland. The southern is the so-called GIPS group (Greece, Italy, Portugal and Spain).

In the uncompetitive (current account deficit) economies of southern euro area, domestic final demand levels are in excess of its equilibrium values and the opposite occurs in the strong, competitive economies of the north. Particularly serious imbalances were found, and quantified, in Greece and Portugal, in the southern side, and in Ireland, The Netherlands, Finland and Germany, in the northern.

These external imbalances were accompanied and explained by a different geographic pattern of specialization favorable to the northern euro-area countries, in which prevail an export pattern based on sectors with higher value added and more intensive technological activities. The southern countries, Portugal and above all Greece, but not so much Spain and Italy, have the bulk of their exports made by traditional sectors. This is even more pronounced when the ranking of export sectors is based on an input-output indicator proposed in this paper, given the higher domestic value added content of these labor intensive sectors, and not so dependent of imported intermediate inputs, given its lower integration in global value chains.

The external dependency and value added generation capacity of the productive sectors of these economies were also quantified, with a new treatment of inter-industry output multipliers which follows closely Amaral et al (2011). The (gross) output growth potential given by the column sums of the Leontief inverse matrix (backward linkage indicators) results from three terms: inter-industry flows, value added and imported inputs. After a convenient arrangement of these terms, the evolution of backward linkage indicators can be used to detect structural changes, particularly quantifying a

(net) growth effect (more value-added generation) and an external dependency effect (more imported inputs), and to classify the productive sectors accordingly.

External dependency is not necessarily bad. It may be the result of increased benefits from international division of labour and a more intense integration in global value chains. What is not *a priori* desirable is that the decrease in production needed to satisfy an increase in domestic demand should be a consequence of domestic production being supplanted by imports. However, one of the main results of this paper, and a somewhat puzzling, is that in the more competitive economies of the Euro area, namely Germany, no sectors appear in the more virtuous area of greater value added generation and lower external dependency.

This results calls for more, and careful, research and one of the possible ways to do so is using a concept of multiplier that is immune to variations in the structure of final demand: the singular value decomposition method proposed in Ciaschini (1993) and refined with the notion of Euclidean distance multiplier proposed in Amaral et al (2012).

It is important to emphasise that, although conditioned by the well-known limitations of the traditional gross multipliers (Oosterhaven and Stelder, 2002), the methods proposed in this paper can be used as simple, but suggestive, devices to study the structural changes of the economies along those development paths and to quantify its external imbalances.

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APPENDIX: Tables

Table 1: Net exports / GDP (%) - Euroarea

Year	Euro - South				Euro - North			
	PRT	GRC	ESP	ITA	DEU	NLD	FIN	IRL
1995	-6,69	-8,12	0,00	3,84	0,60	5,67	7,49	9,25
1996	-7,11	-8,83	0,51	4,72	0,96	5,28	6,96	11,26
1997	-8,11	-8,42	0,83	3,93	1,29	5,67	7,36	16,18
1998	-9,21	-10,17	-0,21	3,22	1,37	4,69	8,06	11,80
1999	-10,32	-10,32	-1,76	1,92	0,88	4,22	9,16	13,89
2000	-10,98	-13,75	-2,97	0,95	0,31	5,55	9,15	13,35
2001	-10,21	-13,51	-2,40	1,39	1,98	5,79	9,33	15,49
2002	-8,28	-13,98	-2,03	0,94	4,50	6,51	9,26	17,14
2003	-6,78	-12,58	-2,27	0,54	3,92	6,29	6,80	16,00
2004	-8,29	-10,29	-3,83	0,70	5,05	7,37	6,50	14,87
2005	-9,38	-9,27	-5,07	-0,06	5,21	8,53	4,07	11,66
2006	-8,49	-11,46	-6,13	-0,82	5,62	7,74	4,70	9,63
2007	-7,72	-14,11	-6,46	-0,25	7,00	8,22	5,12	9,01
2008	-9,69	-14,49	-5,54	-0,83	6,30	8,31	3,77	9,05
2009	-7,28	-11,47	-2,07	-0,53	4,92	7,00	1,63	16,02
2010	-7,28	-9,27	-2,41	-1,99	5,62	8,06	1,34	18,66
2011	-7,28	-8,11	-1,12	-1,42	5,20	8,58	-0,74	21,65
Aver.	-8,42	-11,07	-2,53	0,96	3,57	6,68	5,88	13,82

Source: AMECO

Table 2: (E*/D*) - (E/D) (%) - Euroarea

Year	Euro - South				Euro - North			
	PRT	GRC	ESP	ITA	DEU	NLD	FIN	IRL
1995	9,37	11,18	0,57	-4,38	-0,48	-8,26	-10,32	-19,97
1996	9,86	11,81	-0,05	-5,46	-1,01	-7,64	-9,66	-20,28
1997	11,16	12,69	-0,39	-4,42	-1,45	-8,36	-10,37	-22,73
1998	12,52	13,65	0,96	-3,44	-1,61	-6,64	-11,25	-19,94
1999	13,66	13,43	2,98	-1,94	-0,98	-5,90	-12,92	-25,70
2000	14,95	17,81	4,87	-0,76	-0,30	-8,31	-13,71	-26,46
2001	13,89	17,92	4,00	-1,34	-2,50	-8,52	-13,60	-32,00
2002	11,43	17,40	3,37	-0,86	-5,93	-9,53	-13,33	-34,30
2003	9,58	15,33	3,61	-0,38	-5,16	-9,13	-9,50	-30,97
2004	11,58	13,24	5,59	-0,58	-6,88	-11,16	-9,35	-28,88
2005	13,05	12,56	7,19	0,43	-7,31	-13,41	-5,90	-21,52
2006	12,22	13,94	8,73	1,46	-8,12	-12,28	-7,15	-16,53
2007	11,21	16,07	9,20	0,69	-10,44	-13,13	-7,78	-15,26
2008	14,02	17,31	8,05	1,28	-9,47	-13,69	-5,65	-15,62
2009	10,02	13,25	3,18	0,82	-6,76	-10,83	-2,12	-29,51
2010	10,02	13,21	3,84	2,72	-7,97	-13,42	-1,61	-38,63
2011	10,09	13,25	2,26	2,16	-7,35	-15,29	1,40	-45,72
Aver.	11,69	14,36	4,00	-0,82	-4,92	-10,32	-8,40	-26,12

Source: WIOD and authors' calculations

Table 3: Exports/GDP (E/Y), %

	1995	2000	2005	2011
PRT	26,25	28,20	27,14	25,97
GRE	14,46	15,23	16,18	15,06
ESP	19,21	25,61	23,02	26,89
ITA	24,73	26,22	25,46	28,61
DEU	24,32	34,29	41,60	46,42
NLD	54,84	58,68	56,62	66,80
FIN	38,44	45,37	43,44	42,91
IRL	77,50	98,29	85,11	103,81

Source: AMECO

Table 4: Value added multiplier by sector, v_i^* (top ten sectors)

PORTUGAL 1995			GREECE 1995			SPAIN 1995		
c28	Financial Intermediation	0,941	c27	Post and Telecommunicati	0,971	c28	Financial Intermediation	0,955
c26	Oth. S. A. Transp. Activ.	0,937	c28	Financial Intermediation	0,968	c27	Post and Telecommunicati	0,953
c27	Post and Telecommunic.	0,901	c34	Other Community, Social ar	0,939	c20	Wholesale Trade and Com	0,933
c1	Agriculture, Hunting, F. F.	0,889	c30	Renting of M&Eq and Other	0,927	c34	Other Community, Social ar	0,931
c23	Inland Transport	0,874	c20	Wholesale Trade and Com	0,920	c22	Hotels and Restaurants	0,927
c20	Wholesale Trade	0,873	c17	Electricity, Gas and Water	0,919	c30	Renting of M&Eq and Other	0,922
c2	Mining and Quarrying	0,872	c1	Agriculture, Hunting, Fores	0,910	c1	Agriculture, Hunting, Fores	0,917
c30	Renting M&Eq, O. Bus. A.	0,869	c2	Mining and Quarrying	0,907	c26	Other Supporting and Auxil	0,885
c17	Electricity, Gas and Water	0,865	c22	Hotels and Restaurants	0,903	c23	Inland Transport	0,885
c22	Hotels and Restaurants	0,849	c11	Other Non-Metallic Mineral	0,861	c2	Mining and Quarrying	0,879
PORTUGAL 2000			GREECE 2000			SPAIN 2000		
c28	Financial Intermediation	0,926	c28	Financial Intermediation	0,931	c28	Financial Intermediation	0,930
c26	Oth. S. A. Transp. Activ.	0,892	c34	Other Community, Social ar	0,904	c22	Hotels and Restaurants	0,904
c30	Renting M&Eq, O. Bus. A.	0,877	c27	Post and Telecommunicati	0,889	c20	Wholesale Trade and Com	0,899
c27	Post and Telecommunic.	0,866	c20	Wholesale Trade and Com	0,882	c34	Other Community, Social ar	0,893
c20	Wholesale Trade	0,864	c22	Hotels and Restaurants	0,882	c30	Renting of M&Eq and Other	0,886
c1	Agriculture, Hunting, F. F.	0,853	c1	Agriculture, Hunting, Fores	0,879	c1	Agriculture, Hunting, Fores	0,883
c22	Hotels and Restaurants	0,846	c30	Renting of M&Eq and Other	0,870	c27	Post and Telecommunicati	0,867
c2	Mining and Quarrying	0,838	c2	Mining and Quarrying	0,863	c23	Inland Transport	0,835
c23	Inland Transport	0,827	c17	Electricity, Gas and Water	0,832	c26	Other Supporting and Auxil	0,822
c24	Water Transport	0,805	c11	Other Non-Metallic Mineral	0,814	c24	Water Transport	0,811
PORTUGAL 2005			GREECE 2005			SPAIN 2005		
c28	Financial Intermediation	0,933	c28	Financial Intermediation	0,951	c28	Financial Intermediation	0,931
c26	Oth. S. A. Transp. Activ.	0,887	c27	Post and Telecommunicati	0,951	c22	Hotels and Restaurants	0,907
c30	Renting M&Eq, O. Bus. A.	0,883	c34	Other Community, Social ar	0,903	c34	Other Community, Social ar	0,901
c20	Wholesale Trade	0,865	c17	Electricity, Gas and Water	0,888	c30	Renting of M&Eq and Other	0,901
c22	Hotels and Restaurants	0,859	c22	Hotels and Restaurants	0,886	c20	Wholesale Trade and Com	0,900
c27	Post and Telecommunic.	0,856	c20	Wholesale Trade and Com	0,886	c1	Agriculture, Hunting, Fores	0,880
c34	Oth. Community, S. P. Ser.	0,847	c30	Renting of M&Eq and Other	0,884	c27	Post and Telecommunicati	0,863
c1	Agriculture, Hunting, F. F.	0,839	c1	Agriculture, Hunting, Fores	0,881	c26	Other Supporting and Auxil	0,830
c23	Inland Transport	0,800	c26	Other Supporting and Auxil	0,852	c23	Inland Transport	0,815
c2	Mining and Quarrying	0,796	c2	Mining and Quarrying	0,840	c11	Other Non-Metallic Mineral	0,804
PORTUGAL 2011			GREECE 2011			SPAIN 2011		
c28	Financial Intermediation	0,940	c27	Post and Telecommunicati	0,956	c28	Financial Intermediation	0,914
c20	Wholesale Trade	0,881	c28	Financial Intermediation	0,942	c22	Hotels and Restaurants	0,899
c30	Renting M&Eq, O. Bus. A.	0,877	c34	Other Community, Social ar	0,911	c20	Wholesale Trade and Com	0,899
c26	Oth. S. A. Transp. Activ.	0,868	c22	Hotels and Restaurants	0,900	c30	Renting of M&Eq and Other	0,895
c27	Post and Telecommunic.	0,865	c26	Other Supporting and Auxil	0,897	c34	Other Community, Social ar	0,893
c22	Hotels and Restaurants	0,858	c20	Wholesale Trade and Com	0,896	c1	Agriculture, Hunting, Fores	0,865
c34	Oth. Community, S. P. Ser.	0,843	c17	Electricity, Gas and Water	0,889	c27	Post and Telecommunicati	0,860
c2	Mining and Quarrying	0,839	c30	Renting of M&Eq and Other	0,882	c26	Other Supporting and Auxil	0,833
c1	Agriculture, Hunting, F. F.	0,816	c2	Mining and Quarrying	0,851	c23	Inland Transport	0,805
c23	Inland Transport	0,807	c5	Leather, Leather and Foot	0,843	c11	Other Non-Metallic Mineral	0,792

Table 4: Value added multiplier by sector, v_i^* (top ten sectors) (cont.)

GERMANY 1995			NETHERLANDS 1995			FINLAND 1995		
c30	Renting M&Eq, O. Bus. A.	0,962	c2	Mining and Quarrying	0,900	c34	Other Community, Social ar	0,903
c27	Post and Telecommunic.	0,956	c28	Financial Intermediation	0,888	c23	Inland Transport	0,898
c34	Oth. Community, S. P. Ser.	0,947	c23	Inland Transport	0,850	c28	Financial Intermediation	0,897
c20	Wholesale Trade	0,946	c27	Post and Telecommunicatic	0,837	c1	Agriculture, Hunting, Fores	0,892
c28	Financial Intermediation	0,939	c30	Renting of M&Eq and Other	0,833	c27	Post and Telecommunicatic	0,883
c23	Inland Transport	0,919	c20	Wholesale Trade and Com	0,831	c20	Wholesale Trade and Com	0,878
c17	Electricity, Gas and Water	0,910	c22	Hotels and Restaurants	0,803	c22	Hotels and Restaurants	0,861
c22	Hotels and Restaurants	0,907	c34	Other Community, Social ar	0,795	c30	Renting of M&Eq and Other	0,860
c2	Mining and Quarrying	0,892	c1	Agriculture, Hunting, Fores	0,784	c6	Wood and Products of Wo	0,853
c26	Oth. S. A. Transp. Activ.	0,890	c26	Other Supporting and Auxil	0,772	c25	Air Transport	0,847
GERMANY 2000			NETHERLANDS 2000			FINLAND 2000		
c30	Renting M&Eq, O. Bus. A.	0,945	c2	Mining and Quarrying	0,880	c28	Financial Intermediation	0,923
c34	Oth. Community, S. P. Ser.	0,927	c28	Financial Intermediation	0,846	c1	Agriculture, Hunting, Fores	0,878
c20	Wholesale Trade	0,911	c23	Inland Transport	0,833	c34	Other Community, Social ar	0,875
c28	Financial Intermediation	0,898	c20	Wholesale Trade and Com	0,818	c23	Inland Transport	0,860
c22	Hotels and Restaurants	0,893	c30	Renting of M&Eq and Other	0,816	c30	Renting of M&Eq and Other	0,852
c27	Post and Telecommunic.	0,886	c22	Hotels and Restaurants	0,804	c22	Hotels and Restaurants	0,851
c23	Inland Transport	0,875	c34	Other Community, Social ar	0,786	c26	Other Supporting and Auxil	0,842
c17	Electricity, Gas and Water	0,864	c27	Post and Telecommunicatic	0,781	c20	Wholesale Trade and Com	0,840
c1	Agriculture, Hunting, F. F.	0,858	c1	Agriculture, Hunting, Fores	0,748	c27	Post and Telecommunicatic	0,838
c26	Oth. S. A. Transp. Activ.	0,857	c26	Other Supporting and Auxil	0,740	c6	Wood and Products of Wo	0,803
GERMANY 2005			NETHERLANDS 2005			FINLAND 2005		
c30	Renting M&Eq, O. Bus. A.	0,947	c2	Mining and Quarrying	0,859	c28	Financial Intermediation	0,869
c34	Oth. Community, S. P. Ser.	0,927	c28	Financial Intermediation	0,850	c34	Other Community, Social ar	0,866
c20	Wholesale Trade	0,907	c27	Post and Telecommunicatic	0,829	c22	Hotels and Restaurants	0,862
c28	Financial Intermediation	0,903	c30	Renting of M&Eq and Other	0,827	c30	Renting of M&Eq and Other	0,859
c22	Hotels and Restaurants	0,898	c20	Wholesale Trade and Com	0,825	c1	Agriculture, Hunting, Fores	0,840
c27	Post and Telecommunic.	0,875	c23	Inland Transport	0,812	c23	Inland Transport	0,824
c23	Inland Transport	0,864	c22	Hotels and Restaurants	0,810	c20	Wholesale Trade and Com	0,820
c26	Oth. S. A. Transp. Activ.	0,859	c34	Other Community, Social ar	0,799	c27	Post and Telecommunicatic	0,815
c24	Water Transport	0,840	c26	Other Supporting and Auxil	0,764	c26	Other Supporting and Auxil	0,813
c17	Electricity, Gas and Water	0,830	c16	Manufacturing, Nec; Recyc	0,753	c3	Food, Beverages and Tob	0,789
GERMANY 2011			NETHERLANDS 2011			FINLAND 2011		
c30	Renting M&Eq, O. Bus. A.	0,944	c2	Mining and Quarrying	0,859	c34	Other Community, Social ar	0,860
c34	Oth. Community, S. P. Ser.	0,917	c30	Renting of M&Eq and Other	0,818	c28	Financial Intermediation	0,859
c20	Wholesale Trade	0,903	c28	Financial Intermediation	0,818	c30	Renting of M&Eq and Other	0,843
c28	Financial Intermediation	0,893	c20	Wholesale Trade and Com	0,806	c22	Hotels and Restaurants	0,838
c22	Hotels and Restaurants	0,879	c22	Hotels and Restaurants	0,787	c1	Agriculture, Hunting, Fores	0,819
c27	Post and Telecommunic.	0,858	c27	Post and Telecommunicatic	0,783	c27	Post and Telecommunicatic	0,816
c23	Inland Transport	0,856	c34	Other Community, Social ar	0,779	c20	Wholesale Trade and Com	0,804
c26	Oth. S. A. Transp. Activ.	0,848	c23	Inland Transport	0,766	c23	Inland Transport	0,801
c17	Electricity, Gas and Water	0,846	c26	Other Supporting and Auxil	0,754	c26	Other Supporting and Auxil	0,789
c2	Mining and Quarrying	0,805	c16	Manufacturing, Nec; Recyc	0,750	c6	Wood and Products of Wo	0,771

Source: WIOD and authors' calculations

Table 5: Weight of each sector's exports in total exports (E_i/E) (%)

PORTUGAL 1995			GREECE 1995			SPAIN 1995		
c4	Textiles and Textile Prod.	18,881	c24	Water Transport	16,040	c15	Transport Equipment	23,613
c14	Electrical and Optical Eq.	10,078	c4	Textiles and Textile Product	12,788	c9	Chemicals and Chemical Pr	8,349
c15	Transport Equipment	9,571	c3	Food, Beverages and Toba	12,670	c12	Basic Metals and Fabricate	7,753
c5	Leather and Footw are	6,416	c1	Agriculture, Hunting, Fores	12,543	c14	Electrical and Optical Equip	7,412
c25	Air Transport	5,129	c12	Basic Metals and Fabricate	8,591	c3	Food, Beverages and Toba	6,905
c3	Food, Beverages and T.	4,985	c20	Wholesale Trade and Comm	6,780	c1	Agriculture, Hunting, Fores	6,442
c7	Pulp, Paper, Printing	4,946	c9	Chemicals and Chemical Pr	2,842	c13	Machinery, Nec	5,426
c9	Chemicals	3,802	c11	Other Non-Metallic Mineral	2,490	c30	Renting of M&Eq and Other	3,883
c6	Wood and Cork	3,524	c8	Coke, Refined Petroleum ar	2,239	c4	Textiles and Textile Product	3,445
c11	Other Non-Metallic Mineral	3,402	c26	Other Supporting and Auxil	2,195	c11	Other Non-Metallic Mineral	3,200
PORTUGAL 2000			GREECE 2000			SPAIN 2000		
c4	Textiles and Textile Prod.	14,362	c24	Water Transport	37,042	c15	Transport Equipment	22,364
c15	Transport Equipment	11,889	c4	Textiles and Textile Product	6,132	c9	Chemicals and Chemical Pr	7,809
c14	Electrical and Optical Eq.	11,037	c1	Agriculture, Hunting, Fores	5,605	c14	Electrical and Optical Equip	7,740
c5	Leather and Footw are	4,940	c26	Other Supporting and Auxil	5,488	c12	Basic Metals and Fabricate	6,709
c3	Food, Beverages and T.	4,674	c3	Food, Beverages and Toba	5,120	c3	Food, Beverages and Toba	6,502
c12	Basic Metals, Fabr Metal	4,496	c12	Basic Metals and Fabricate	5,058	c13	Machinery, Nec	5,805
c25	Air Transport	4,437	c8	Coke, Refined Petroleum ar	4,402	c30	Renting of M&Eq and Other	5,773
c7	Pulp, Paper, Printing	4,225	c20	Wholesale Trade and Comm	4,322	c1	Agriculture, Hunting, Fores	5,114
c9	Chemicals	3,958	c30	Renting of M&Eq and Other	3,165	c4	Textiles and Textile Product	3,496
c13	Machinery, Nec	3,917	c9	Chemicals and Chemical Pr	2,785	c8	Coke, Refined Petroleum ar	3,474
PORTUGAL 2005			GREECE 2005			SPAIN 2005		
c15	Transport Equipment	10,875	c24	Water Transport	49,429	c15	Transport Equipment	20,884
c4	Textiles and Textile Prod.	10,026	c20	Wholesale Trade and Comm	5,526	c9	Chemicals and Chemical Pr	10,000
c14	Electrical and Optical Eq.	9,864	c12	Basic Metals and Fabricate	5,492	c12	Basic Metals and Fabricate	7,280
c12	Basic Metals, Fabr Metal	6,062	c8	Coke, Refined Petroleum ar	4,660	c3	Food, Beverages and Toba	6,916
c3	Food, Beverages and T.	5,366	c3	Food, Beverages and Toba	3,982	c30	Renting of M&Eq and Other	6,803
c9	Chemicals	4,745	c9	Chemicals and Chemical Pr	3,868	c14	Electrical and Optical Equip	6,797
c25	Air Transport	4,500	c1	Agriculture, Hunting, Fores	3,851	c1	Agriculture, Hunting, Fores	4,710
c13	Machinery, Nec	4,049	c4	Textiles and Textile Product	3,658	c13	Machinery, Nec	4,599
c23	Inland Transport	3,904	c30	Renting of M&Eq and Other	3,279	c8	Coke, Refined Petroleum ar	3,772
c30	Renting M&Eq, O. Bus. A.	3,741	c26	Other Supporting and Auxil	2,343	c4	Textiles and Textile Product	3,424
PORTUGAL 2011			GREECE 2011			SPAIN 2011		
c15	Transport Equipment	8,860	c24	Water Transport	42,070	c15	Transport Equipment	15,762
c4	Textiles and Textile Prod.	7,327	c20	Wholesale Trade and Comm	5,425	c9	Chemicals and Chemical Pr	10,404
c14	Electrical and Optical Eq.	7,083	c12	Basic Metals and Fabricate	5,362	c12	Basic Metals and Fabricate	9,263
c3	Food, Beverages and T.	6,850	c8	Coke, Refined Petroleum ar	4,956	c8	Coke, Refined Petroleum ar	8,173
c7	Pulp, Paper, Printing	6,614	c26	Other Supporting and Auxil	4,414	c30	Renting of M&Eq and Other	8,169
c12	Basic Metals, Fabr Metal	6,115	c3	Food, Beverages and Toba	4,239	c3	Food, Beverages and Toba	7,372
c25	Air Transport	5,261	c30	Renting of M&Eq and Other	3,656	c14	Electrical and Optical Equip	5,517
c30	Renting M&Eq, O. Bus. A.	4,827	c9	Chemicals and Chemical Pr	3,571	c13	Machinery, Nec	4,359
c13	Machinery, Nec	4,364	c1	Agriculture, Hunting, Fores	3,549	c1	Agriculture, Hunting, Fores	4,185
c23	Inland Transport	4,271	c25	Air Transport	3,466	c4	Textiles and Textile Product	3,823

Table 5: Weight of each sector's exports in total exports (E_i/E) (%) (cont.)

GERMANY 1995			NETHERLANDS 1995			FINLAND 1995		
c15	Transport Equipment	18,612	c3	Food, Beverages and Toba	14,759	c7	Pulp, Paper, Paper , Printing	23,009
c13	Machinery, Nec	14,759	c9	Chemicals and Chemical Pr	14,586	c14	Electrical and Optical Equip	14,754
c14	Electrical and Optical Eq.	13,804	c14	Electrical and Optical Equip	7,642	c13	Machinery, Nec	12,564
c9	Chemicals	12,510	c1	Agriculture, Hunting, Fores	6,902	c12	Basic Metals and Fabricate	8,905
c12	Basic Metals, Fabr Metal	9,485	c30	Renting of M&Eq and Other	6,767	c6	Wood and Products of Wo	6,358
c3	Food, Beverages and T.	4,191	c12	Basic Metals and Fabricate	6,375	c30	Renting of M&Eq and Other	4,523
c7	Pulp, Paper, Printing	3,556	c15	Transport Equipment	5,261	c9	Chemicals and Chemical Pr	4,186
c4	Textiles and Textile Prod.	3,464	c13	Machinery, Nec	4,745	c15	Transport Equipment	4,017
c10	Rubber and Plastics	3,249	c8	Coke, Refined Petroleum ar	3,552	c24	Water Transport	3,407
c30	Renting M&Eq, O. Bus. A.	2,548	c7	Pulp, Paper, Paper , Printing	3,148	c3	Food, Beverages and Toba	2,768
GERMANY 2000			NETHERLANDS 2000			FINLAND 2000		
c15	Transport Equipment	20,864	c9	Chemicals and Chemical Pr	13,740	c14	Electrical and Optical Equip	25,273
c14	Electrical and Optical Eq.	15,406	c3	Food, Beverages and Toba	12,269	c7	Pulp, Paper, Paper , Printing	18,703
c13	Machinery, Nec	12,746	c30	Renting of M&Eq and Other	9,175	c13	Machinery, Nec	9,571
c9	Chemicals	11,133	c14	Electrical and Optical Equip	7,378	c12	Basic Metals and Fabricate	8,328
c12	Basic Metals, Fabr Metal	8,409	c1	Agriculture, Hunting, Fores	6,021	c6	Wood and Products of Wo	5,565
c3	Food, Beverages and T.	3,802	c12	Basic Metals and Fabricate	5,742	c9	Chemicals and Chemical Pr	4,910
c7	Pulp, Paper, Printing	3,530	c13	Machinery, Nec	5,636	c30	Renting of M&Eq and Other	4,792
c30	Renting M&Eq, O. Bus. A.	3,189	c8	Coke, Refined Petroleum ar	5,579	c15	Transport Equipment	4,701
c10	Rubber and Plastics	3,148	c15	Transport Equipment	5,425	c8	Coke, Refined Petroleum ar	3,519
c4	Textiles and Textile Prod.	2,916	c25	Air Transport	2,903	c3	Food, Beverages and Toba	2,337
GERMANY 2005			NETHERLANDS 2005			FINLAND 2005		
c15	Transport Equipment	20,980	c9	Chemicals and Chemical Pr	15,157	c14	Electrical and Optical Equip	25,283
c14	Electrical and Optical Eq.	13,178	c3	Food, Beverages and Toba	11,386	c7	Pulp, Paper, Paper , Printing	13,264
c13	Machinery, Nec	12,655	c30	Renting of M&Eq and Other	9,163	c13	Machinery, Nec	11,091
c9	Chemicals	11,424	c8	Coke, Refined Petroleum ar	7,335	c12	Basic Metals and Fabricate	10,716
c12	Basic Metals, Fabr Metal	9,129	c1	Agriculture, Hunting, Fores	5,914	c30	Renting of M&Eq and Other	7,218
c3	Food, Beverages and T.	3,971	c13	Machinery, Nec	5,894	c9	Chemicals and Chemical Pr	5,275
c30	Renting M&Eq, O. Bus. A.	3,945	c14	Electrical and Optical Equip	5,482	c6	Wood and Products of Wo	4,363
c7	Pulp, Paper, Printing	3,583	c12	Basic Metals and Fabricate	4,855	c8	Coke, Refined Petroleum ar	3,918
c10	Rubber and Plastics	3,251	c15	Transport Equipment	4,583	c15	Transport Equipment	3,485
c4	Textiles and Textile Prod.	2,331	c2	Mining and Quarrying	3,546	c24	Water Transport	2,046
GERMANY 2011			NETHERLANDS 2011			FINLAND 2011		
c15	Transport Equipment	19,494	c9	Chemicals and Chemical Pr	15,156	c14	Electrical and Optical Equip	15,356
c14	Electrical and Optical Eq.	12,793	c3	Food, Beverages and Toba	12,407	c7	Pulp, Paper, Paper , Printing	13,153
c13	Machinery, Nec	12,711	c8	Coke, Refined Petroleum ar	10,674	c12	Basic Metals and Fabricate	12,407
c9	Chemicals	11,541	c30	Renting of M&Eq and Other	9,301	c13	Machinery, Nec	12,132
c12	Basic Metals, Fabr Metal	10,460	c13	Machinery, Nec	5,675	c30	Renting of M&Eq and Other	9,393
c3	Food, Beverages and T.	4,746	c2	Mining and Quarrying	5,319	c9	Chemicals and Chemical Pr	7,915
c30	Renting M&Eq, O. Bus. A.	3,921	c12	Basic Metals and Fabricate	5,056	c8	Coke, Refined Petroleum ar	7,032
c10	Rubber and Plastics	3,426	c14	Electrical and Optical Equip	4,431	c6	Wood and Products of Wo	2,895
c7	Pulp, Paper, Printing	3,063	c15	Transport Equipment	4,078	c24	Water Transport	2,386
c24	Water Transport	1,937	c1	Agriculture, Hunting, Fores	3,888	c15	Transport Equipment	2,284

Source: WIOD and authors' calculations

Table 6: Sectoral export contribution to GDP, EYR_i

PORTUGAL 1995			GREECE 1995			SPAIN 1995		
c4	Textiles and Textile Prod.	3,569	c1	Agriculture, Hunting, Forestry and Fish	0,887	c15	Transport Equipment	3,056
c14	Electrical and Optical Eq.	1,524	c24	Water Transport	0,871	c9	Chemicals and Chemical Products	1,255
c15	Transport Equipment	1,348	c3	Food, Beverages and Tobacco	0,827	c12	Basic Metals and Fabricated Metal	1,172
c5	Leather and Footware	1,191	c4	Textiles and Textile Products	0,719	c1	Agriculture, Hunting, Forestry and	1,135
c7	Pulp, Paper, Printing	1,042	c20	Wholesale Trade and Commission Trade	0,485	c3	Food, Beverages and Tobacco	1,112
c3	Food, Beverages and T.	1,010	c12	Basic Metals and Fabricated Metal	0,449	c14	Electrical and Optical Equipment	1,068
c25	Air Transport	0,959	c11	Other Non-Metallic Mineral	0,167	c13	Machinery, Nec	0,828
c11	Other Non-Metallic Mineral	0,731	c9	Chemicals and Chemical Products	0,157	c30	Renting of M&Eq and Other Business	0,688
c9	Chemicals	0,706	c26	Other Supporting and Auxiliary Transport	0,142	c11	Other Non-Metallic Mineral	0,534
c6	Wood and Cork	0,706	c30	Renting of M&Eq and Other Business	0,133	c4	Textiles and Textile Products	0,526
PORTUGAL 2000			GREECE 2000			SPAIN 2000		
c4	Textiles and Textile Prod.	2,802	c24	Water Transport	3,200	c15	Transport Equipment	3,304
c15	Transport Equipment	1,803	c1	Agriculture, Hunting, Forestry and Fish	0,751	c9	Chemicals and Chemical Products	1,415
c14	Electrical and Optical Eq.	1,682	c4	Textiles and Textile Products	0,633	c3	Food, Beverages and Tobacco	1,346
c3	Food, Beverages and T.	0,999	c3	Food, Beverages and Tobacco	0,626	c30	Renting of M&Eq and Other Business	1,311
c5	Leather and Footware	0,963	c26	Other Supporting and Auxiliary Transport	0,614	c14	Electrical and Optical Equipment	1,297
c28	Financial Intermediation	0,918	c20	Wholesale Trade and Commission Trade	0,581	c12	Basic Metals and Fabricated Metal	1,220
c25	Air Transport	0,911	c12	Basic Metals and Fabricated Metal	0,477	c1	Agriculture, Hunting, Forestry and	1,156
c7	Pulp, Paper, Printing	0,910	c30	Renting of M&Eq and Other Business	0,419	c13	Machinery, Nec	1,099
c12	Basic Metals, Fabr Metal	0,782	c9	Chemicals and Chemical Products	0,289	c4	Textiles and Textile Products	0,673
c6	Wood and Cork	0,738	c27	Post and Telecommunications	0,278	c23	Inland Transport	0,629
PORTUGAL 2005			GREECE 2005			SPAIN 2005		
c4	Textiles and Textile Prod.	2,002	c24	Water Transport	5,648	c15	Transport Equipment	2,914
c15	Transport Equipment	1,536	c20	Wholesale Trade and Commission Trade	0,792	c9	Chemicals and Chemical Products	1,636
c14	Electrical and Optical Eq.	1,295	c1	Agriculture, Hunting, Forestry and Fish	0,549	c30	Renting of M&Eq and Other Business	1,410
c3	Food, Beverages and T.	1,113	c12	Basic Metals and Fabricated Metal	0,542	c3	Food, Beverages and Tobacco	1,275
c12	Basic Metals, Fabr Metal	0,966	c3	Food, Beverages and Tobacco	0,532	c12	Basic Metals and Fabricated Metal	1,187
c25	Air Transport	0,919	c30	Renting of M&Eq and Other Business	0,469	c14	Electrical and Optical Equipment	1,012
c30	Renting M&Eq, O. Bus. A.	0,896	c4	Textiles and Textile Products	0,456	c1	Agriculture, Hunting, Forestry and	0,954
c23	Inland Transport	0,848	c9	Chemicals and Chemical Products	0,411	c13	Machinery, Nec	0,799
c9	Chemicals	0,830	c26	Other Supporting and Auxiliary Transport	0,323	c4	Textiles and Textile Products	0,601
c7	Pulp, Paper, Printing	0,735	c8	Coke, Refined Petroleum and Nuclear Fuel	0,232	c23	Inland Transport	0,589
PORTUGAL 2011			GREECE 2011			SPAIN 2011		
c4	Textiles and Textile Prod.	1,450	c24	Water Transport	5,551	c15	Transport Equipment	2,479
c7	Pulp, Paper, Printing	1,316	c20	Wholesale Trade and Commission Trade	4,147	c30	Renting of M&Eq and Other Business	1,966
c3	Food, Beverages and T.	1,305	c26	Other Supporting and Auxiliary Transport	4,034	c9	Chemicals and Chemical Products	1,927
c15	Transport Equipment	1,257	c12	Basic Metals and Fabricated Metal	3,780	c12	Basic Metals and Fabricated Metal	1,698
c14	Electrical and Optical Eq.	1,113	c3	Food, Beverages and Tobacco	2,998	c3	Food, Beverages and Tobacco	1,561
c30	Renting M&Eq, O. Bus. A.	1,099	c30	Renting of M&Eq and Other Business	1,719	c1	Agriculture, Hunting, Forestry and	0,973
c12	Basic Metals, Fabr Metal	0,997	c1	Agriculture, Hunting, Forestry and Fish	1,593	c14	Electrical and Optical Equipment	0,940
c25	Air Transport	0,986	c9	Chemicals and Chemical Products	1,094	c13	Machinery, Nec	0,856
c23	Inland Transport	0,895	c25	Air Transport	1,092	c4	Textiles and Textile Products	0,730
c13	Machinery, Nec	0,733	c4	Textiles and Textile Products	0,721	c28	Financial Intermediation	0,588

Source: WIOD and authors' calculations

Table 6: Sectoral export contribution to GDP, EYR_i (cont.)

GERMANY 1995			NETHERLANDS 1995			FINLAND 1995		
c15	Transport Equipment	3,461	c3	Food, Beverages and Tobacco	5,442	c7	Pulp, Paper, Paper , Printing and	7,281
c13	Machinery, Nec	2,943	c9	Chemicals and Chemical Products	4,962	c14	Electrical and Optical Equipment	3,689
c14	Electrical and Optical Eq.	2,681	c30	Renting of M&Eq and Other Business A	3,093	c13	Machinery, Nec	3,373
c9	Chemicals	2,483	c1	Agriculture, Hunting, Forestry and Fish	2,968	c12	Basic Metals and Fabricated Meta	2,269
c12	Basic Metals, Fabr Metal	1,785	c14	Electrical and Optical Equipment	2,429	c6	Wood and Products of Wood and	2,085
c3	Food, Beverages and T.	0,860	c12	Basic Metals and Fabricated Metal	2,020	c30	Renting of M&Eq and Other Busin	1,495
c7	Pulp, Paper, Printing	0,733	c13	Machinery, Nec	1,599	c9	Chemicals and Chemical Products	1,186
c10	Rubber and Plastics	0,634	c15	Transport Equipment	1,482	c15	Transport Equipment	1,084
c4	Textiles and Textile Prod.	0,625	c7	Pulp, Paper, Paper , Printing and Publis	1,194	c24	Water Transport	0,906
c30	Renting M&Eq, O. Bus. A.	0,596	c20	Wholesale Trade and Commission Trad	1,115	c3	Food, Beverages and Tobacco	0,886
GERMANY 2000			NETHERLANDS 2000			FINLAND 2000		
c15	Transport Equipment	4,939	c3	Food, Beverages and Tobacco	4,512	c14	Electrical and Optical Equipment	7,648
c14	Electrical and Optical Eq.	3,909	c9	Chemicals and Chemical Products	4,436	c7	Pulp, Paper, Paper , Printing and	6,794
c13	Machinery, Nec	3,359	c30	Renting of M&Eq and Other Business A	4,394	c13	Machinery, Nec	2,879
c9	Chemicals	2,863	c1	Agriculture, Hunting, Forestry and Fish	2,644	c12	Basic Metals and Fabricated Meta	2,343
c12	Basic Metals, Fabr Metal	2,100	c14	Electrical and Optical Equipment	2,588	c6	Wood and Products of Wood and	2,027
c3	Food, Beverages and T.	1,057	c13	Machinery, Nec	1,950	c30	Renting of M&Eq and Other Busin	1,853
c30	Renting M&Eq, O. Bus. A.	1,033	c12	Basic Metals and Fabricated Metal	1,881	c9	Chemicals and Chemical Products	1,522
c7	Pulp, Paper, Printing	0,972	c15	Transport Equipment	1,654	c15	Transport Equipment	1,341
c10	Rubber and Plastics	0,816	c8	Coke, Refined Petroleum and Nuclear f	1,244	c3	Food, Beverages and Tobacco	0,841
c4	Textiles and Textile Prod.	0,724	c2	Mining and Quarrying	1,207	c24	Water Transport	0,596
GERMANY 2005			NETHERLANDS 2005			FINLAND 2005		
c15	Transport Equipment	5,776	c9	Chemicals and Chemical Products	4,581	c14	Electrical and Optical Equipment	7,125
c14	Electrical and Optical Eq.	3,942	c30	Renting of M&Eq and Other Business A	4,292	c7	Pulp, Paper, Paper , Printing and	4,410
c13	Machinery, Nec	3,924	c3	Food, Beverages and Tobacco	4,166	c13	Machinery, Nec	3,112
c9	Chemicals	3,535	c1	Agriculture, Hunting, Forestry and Fish	2,448	c30	Renting of M&Eq and Other Busin	2,692
c12	Basic Metals, Fabr Metal	2,583	c13	Machinery, Nec	2,084	c12	Basic Metals and Fabricated Meta	2,658
c30	Renting M&Eq, O. Bus. A.	1,555	c14	Electrical and Optical Equipment	1,772	c9	Chemicals and Chemical Products	1,544
c3	Food, Beverages and T.	1,314	c2	Mining and Quarrying	1,724	c6	Wood and Products of Wood and	1,441
c7	Pulp, Paper, Printing	1,191	c28	Financial Intermediation	1,672	c15	Transport Equipment	0,949
c10	Rubber and Plastics	0,995	c12	Basic Metals and Fabricated Metal	1,639	c20	Wholesale Trade and Commission	0,637
c4	Textiles and Textile Prod.	0,680	c8	Coke, Refined Petroleum and Nuclear f	1,522	c3	Food, Beverages and Tobacco	0,613
GERMANY 2011			NETHERLANDS 2011			FINLAND 2011		
c15	Transport Equipment	5,551	c22	Food, Beverages and Tobacco	5,198	c7	Pulp, Paper, Paper , Printing and	4,246
c13	Machinery, Nec	4,147	c7	Renting of M&Eq and Other Business A	5,080	c14	Electrical and Optical Equipment	3,634
c14	Electrical and Optical Eq.	4,034	c27	Chemicals and Chemical Products	4,949	c13	Machinery, Nec	3,410
c9	Chemicals	3,780	c13	Mining and Quarrying	3,054	c30	Renting of M&Eq and Other Busin	3,399
c12	Basic Metals, Fabr Metal	2,998	c15	Machinery, Nec	2,295	c12	Basic Metals and Fabricated Meta	2,708
c30	Renting M&Eq, O. Bus. A.	1,719	c34	Agriculture, Hunting, Forestry and Fish	1,806	c9	Chemicals and Chemical Products	2,256
c3	Food, Beverages and T.	1,593	c28	Basic Metals and Fabricated Metal	1,777	c6	Wood and Products of Wood and	0,957
c7	Pulp, Paper, Printing	1,094	c23	Financial Intermediation	1,760	c24	Water Transport	0,729
c10	Rubber and Plastics	1,092	c25	Electrical and Optical Equipment	1,566	c15	Transport Equipment	0,635
c24	Water Transport	0,721	c4	Transport Equipment	1,362	c20	Wholesale Trade and Commission	0,629

Source: WIOD and authors' calculations

Table 7: Changes in l_{0j} , v^*_j and m^*_j - PORTUGAL, 1995-2011

Sectors with $l_{0j} < 0$							
	Δl_{0j}	Δv^*_j	Δm^*_j	%GO11	%VA11	%M11	Sector
A	-0,0750	0,0385	-0,0168	2,30	3,37	3,18	c4 Textiles and Textile Products
	-0,0424	0,0313	-0,0071	4,87	7,40	0,72	c29 Real Estate Activities
	-0,0061	0,0069	-0,0027	3,83	6,20	0,55	c32 Education
				11,00	16,97	4,45	sub total
B	-0,133	0,0384	0,0039	0,65	1,02	1,18	c5 Leather, Leather and Footwear
	-0,063	0,0282	0,0111	2,01	0,01	13,35	c8 Coke, Refined Petroleum and Nuclear Fuel
	-0,107	0,0275	0,0126	1,72	0,57	5,72	c15 Transport Equipment
	-0,190	0,0559	0,0037	4,34	3,66	2,79	c22 Hotels and Restaurants
	-0,042	0,0153	0,0028	5,26	4,87	4,00	c33 Health and Social Work
			13,98	10,12	27,04	sub total	
D	-0,088	-0,004	0,023	4,05	2,40	5,72	c3 Food, Beverages and Tobacco
	-0,035	-0,012	0,022	1,61	1,91	2,29	c7 Pulp, Paper, Paper , Printing and Publishing
	-0,051	-0,001	0,020	1,14	0,82	2,76	c13 Machinery, Nec
			6,80	5,13	10,77	sub total	
Sectors with $l_{0j} > 0$							
	Δl_{0j}	Δv^*_j	Δm^*_j	%GO11	%VA11	%M11	Sector
A'	0,0119	0,0043	-0,0068	1,18	0,64	1,14	c6 Wood and Products of Wood and Cork
	0,0084	0,0084	-0,0110	2,92	1,87	2,40	c34 Other Community, Social and Personal Services
			4,11	2,51	3,54	sub total	
B'	0,1477	-0,0128	-0,0376	2,07	1,22	4,95	c14 Electrical and Optical Equipment
	0,0143	-0,0036	-0,0038	2,47	2,68	1,88	c19 Sale, Maintenance and Repair of Motor Vehicles
	0,0218	-0,0025	-0,0059	4,85	7,33	2,71	c20 Wholesale Trade and Commission Trade, Except
			9,39	11,23	9,53	sub total	
C'	0,0458	-0,0126	-0,0076	3,44	4,09	1,37	c21 Retail Trade, Except of Motor Vehicles and Moto
	0,1897	-0,0377	-0,0224	0,87	0,54	1,45	c25 Air Transport
	0,1143	-0,0573	-0,0031	5,40	6,27	1,58	c28 Financial Intermediation
	0,1072	-0,0284	-0,0094	7,80	6,16	4,69	c30 Renting of M&Eq and Other Business Activities
			17,51	17,05	9,08	sub total	
D'	0,1676	-0,0970	0,0353	2,58	5,80	2,40	c1 Agriculture, Hunting, Forestry and Fishing
	0,0481	-0,0374	0,0183	0,48	0,54	0,29	c2 Mining and Quarrying
	0,0546	-0,0514	0,0333	1,60	1,34	3,81	c9 Chemicals and Chemical Products
	0,0064	-0,0336	0,0314	0,89	0,56	2,27	c10 Rubber and Plastics
	0,1639	-0,0550	0,0061	1,52	1,91	1,54	c11 Other Non-Metallic Mineral
	0,0940	-0,0452	0,0151	2,54	1,78	5,96	c12 Basic Metals and Fabricated Metal
	0,0179	-0,0099	0,0049	1,06	0,89	1,70	c16 Manufacturing, Nec; Recycling
	0,3264	-0,1085	0,0282	4,44	2,92	4,06	c17 Electricity, Gas and Water Supply
	0,0705	-0,0180	0,0008	8,70	6,36	6,37	c18 Construction
	0,1755	-0,0998	0,0309	2,19	1,92	1,50	c23 Inland Transport
	0,1882	-0,0897	0,0309	0,25	0,13	0,35	c24 Water Transport
	0,2850	-0,1604	0,0337	1,47	1,35	1,01	c26 Other Supporting and Auxiliary Transport Activiti
	0,2910	-0,1267	0,0095	2,96	2,54	1,88	c27 Post and Telecommunications
0,0779	-0,0537	0,0091	6,07	8,24	2,44	c31 Public Admin and Defence; Compulsory Social S	
			36,74	36,28	35,58	sub total	

Source: WIOD and authors' calculations

Table 8: Changes in I_{0j} , v^*_j and m^*_j - GREECE, 1995-2011

Sectors with $I_{0j} < 0$							
	ΔI_{0j}	Δv^*_j	Δm^*_j	%GO11	%VA11	%M11	Sector
A	-0,1050	0,0724	-0,0239	1,12	2,02	1,82	c4 Textiles and Textile Products
	-0,2004	0,0841	-0,0161	0,11	0,16	0,10	c5 Leather, Leather and Footwear
	-0,1833	0,0713	-0,0054	0,20	0,38	0,23	c6 Wood and Products of Wood and Cork
	-0,1603	0,0747	-0,0152	1,08	0,78	1,46	c7 Pulp, Paper, Paper, Printing and Publishing
	-0,1405	0,0629	-0,0028	0,47	0,40	0,95	c10 Rubber and Plastics
	-0,0547	0,0211	-0,0010	0,52	0,37	0,95	c14 Electrical and Optical Equipment
	-0,0666	0,0390	-0,0003	2,02	2,69	0,53	c19 Sale, Maintenance and Repair of Motor Vehicles and Motorcycles; F
	-0,4264	0,1971	-0,0180	0,71	0,39	0,47	c26 Other Supporting and Auxiliary Transport Activities; Activities of Tra
			6,21	7,18	6,49	sub total	
B	-0,616	0,1256	0,0369	5,21	3,28	5,41	c3 Food, Beverages and Tobacco
	-0,125	0,0268	0,0219	1,04	0,88	2,30	c9 Chemicals and Chemical Products
	-0,119	0,0221	0,0163	0,81	0,76	0,66	c11 Other Non-Metallic Mineral
	-0,210	0,0765	0,0102	0,42	0,42	0,80	c13 Machinery, Nec
	-0,090	0,0400	0,0087	4,87	5,20	2,34	c21 Retail Trade, Except of Motor Vehicles and Motorcycles; Repair of H
	-0,353	0,1212	0,0153	6,87	6,55	3,54	c22 Hotels and Restaurants
	-0,514	0,2198	0,0477	3,95	0,37	9,12	c24 Water Transport
	-0,068	0,0474	0,0016	7,28	12,43	0,67	c29 Real Estate Activities
	-0,015	0,0073	0,0050	4,48	4,93	0,46	c32 Education
			34,92	34,82	25,29	sub total	
C	-0,0962	0,0126	0,0177	2,48	1,04	5,15	c12 Basic Metals and Fabricated Metal
	-0,0988	0,0041	0,0296	6,84	6,01	7,56	c18 Construction
	-0,1936	0,0164	0,0696	1,71	1,77	2,39	c23 Inland Transport
	-0,1206	-0,1081	0,1676	0,74	1,05	2,17	c25 Air Transport
			11,03	8,82	15,10	sub total	
D	-0,1136	-0,0065	0,0580	3,36	8,88	3,32	c1 Agriculture, Hunting, Forestry and Fishing
	-0,4385	-0,0850	0,3255	2,65	0,33	17,42	c8 Coke, Refined Petroleum and Nuclear Fuel
	-0,0435	-0,0578	0,0792	0,49	0,47	1,11	c15 Transport Equipment
	-0,0533	-0,0091	0,0293	4,45	3,72	3,10	c30 Renting of M&Eq and Other Business Activities
	-0,0201	-0,0557	0,0676	4,56	3,68	7,47	c33 Health and Social Work
	-0,0423	-0,0003	0,0200	4,30	3,80	2,17	c34 Other Community, Social and Personal Services
			19,82	20,88	34,58	sub total	
Sectors with $I_{0j} > 0$							
	ΔI_{0j}	Δv^*_j	Δm^*_j	%GO11	%VA11	%M11	Sector
B'	0,0640	-0,0134	-0,0242	8,86	8,52	6,32	c31 Public Admin and Defence; Compulsory Social Security
				8,86	8,52	6,32	sub total
D'	0,0281	-0,0509	0,0375	0,43	0,56	0,34	c2 Mining and Quarrying
	0,0197	-0,0308	0,0233	0,74	0,72	1,02	c16 Manufacturing, Nec; Recycling
	0,0957	-0,0689	0,0172	2,51	2,91	1,39	c17 Electricity, Gas and Water Supply
	0,0359	-0,0364	0,0162	7,47	7,74	5,13	c20 Wholesale Trade and Commission Trade, Except of Motor Vehicles
	0,0084	-0,0189	0,0127	2,02	2,37	0,62	c27 Post and Telecommunications
	0,0151	-0,0272	0,0190	4,70	4,13	1,55	c28 Financial Intermediation
			17,87	18,43	10,05	sub total	

Source: WIOD and authors' calculations

Table 9: Changes in I_{0j} , v_j^* and m_j^* - SPAIN, 1995-2011

Sectors with $I_{0j} < 0$							
	ΔI_{0j}	Δv_j^*	Δm_j^*	%GO11	%VA11	%M11	Sector
B	-0,3389	0,0304	0,0466	0,23	0,33	0,38	c5 Leather, Leather and Footwear
	-0,1014	0,0104	0,0171	1,61	1,59	1,96	c7 Pulp, Paper, Paper, Printing and Publishing
	-0,1402	0,0260	0,0206	6,11	6,93	2,55	c22 Hotels and Restaurants
	-0,2270	0,1181	0,0024	6,03	8,20	0,75	c29 Real Estate Activities
				13,99	17,05	5,64	sub total
C	-0,073	0,0036	0,0227	3,47	4,21	1,56	c20 Wholesale Trade and Commission Trade, Except of Motor Vehicle
				3,47	4,21	1,56	sub total
D	-0,0442	-0,0155	0,0244	5,12	3,01	5,15	c3 Food, Beverages and Tobacco
	-0,1954	-0,0030	0,0596	0,61	1,12	1,29	c4 Textiles and Textile Products
	-0,0167	-0,0257	0,0295	0,39	0,44	0,40	c6 Wood and Products of Wood and Cork
	-0,2218	-0,1369	0,2503	2,37	0,43	16,44	c8 Coke, Refined Petroleum and Nuclear Fuel
	-0,0647	-0,0367	0,0556	2,73	1,83	5,47	c9 Chemicals and Chemical Products
	-0,0169	-0,0305	0,0352	1,35	1,18	2,09	c13 Machinery, Nec
	-0,0426	-0,0546	0,0671	1,25	1,33	3,17	c14 Electrical and Optical Equipment
	-0,1002	-0,0295	0,0586	2,88	2,04	8,89	c15 Transport Equipment
	-0,0043	-0,0315	0,0325	0,93	0,85	1,24	c16 Manufacturing, Nec; Recycling
	-0,0235	-0,0068	0,0155	1,98	1,75	3,16	c19 Sale, Maintenance and Repair of Motor Vehicles and Motorcycles
	-0,1001	-0,0176	0,0451	0,16	0,14	0,16	c24 Water Transport
	-0,1779	-0,0259	0,0749	0,59	0,34	0,82	c25 Air Transport
	-0,0333	-0,0053	0,0178	7,24	5,67	3,92	c30 Renting of M&Eq and Other Business Activities
	-0,0126	-0,0020	0,0107	2,86	4,95	0,43	c32 Education
	-0,0355	-0,0032	0,0205	4,67	5,01	3,55	c33 Health and Social Work
0,0302	-0,0337	0,0223	3,94	4,35	2,08	c34 Other Community, Social and Personal Services	
			39,07	34,44	58,26	sub total	
Sectors with $I_{0j} > 0$							
	ΔI_{0j}	Δv_j^*	Δm_j^*	%GO11	%VA11	%M11	Sector
D'	0,0382	-0,0448	0,0303	2,25	5,45	1,42	c1 Agriculture, Hunting, Forestry and Fishing
	0,0719	-0,0722	0,0510	0,25	0,42	0,26	c2 Mining and Quarrying
	0,0106	-0,0318	0,0288	0,99	0,77	1,83	c10 Rubber and Plastics
	0,1582	-0,0734	0,0322	1,30	1,43	1,20	c11 Other Non-Metallic Mineral
	0,0486	-0,0640	0,0510	3,84	2,84	7,29	c12 Basic Metals and Fabricated Metal
	0,0850	-0,1088	0,0812	3,71	2,58	6,29	c17 Electricity, Gas and Water Supply
	0,0225	-0,0068	0,0017	11,79	7,50	5,48	c18 Construction
	0,0602	-0,0405	0,0128	3,78	5,34	1,04	c21 Retail Trade, Except of Motor Vehicles and Motorcycles; Rep
	0,0710	-0,0684	0,0435	2,71	2,79	2,43	c23 Inland Transport
	0,0455	-0,0365	0,0247	2,43	1,52	1,79	c26 Other Supporting and Auxiliary Transport Activities; Activitie
	0,2947	-0,1755	0,0493	2,16	2,36	1,69	c27 Post and Telecommunications
	0,0461	-0,0442	0,0251	3,72	4,85	1,82	c28 Financial Intermediation
	0,0129	-0,0279	0,0215	4,56	6,45	2,01	c31 Public Admin and Defence; Compulsory Social Security
			38,92	37,85	32,53	sub total	

Source: WIOD and authors' calculations

Table 10: Changes in I_{0j} , v^*_j and m^*_j - GERMANY, 1995-2011

Sectors with $I_{0j} < 0$							
	ΔI_{0j}	Δv^*_j	Δm^*_j	%GO11	%VA11	%M11	Sector
B	-0,2639	0,0638	0,0257	1,48	1,41	0,81	c22 Hotels and Restaurants
	-0,2703	0,0377	0,0302	2,21	1,02	1,45	c26 Other Supporting and Auxiliary Transport A
	-0,0982	0,0484	0,0068	7,13	11,21	0,67	c29 Real Estate Activities
				10,82	13,64	2,93	sub total
C	-0,197	0,0096	0,0710	0,06	0,07	0,13	c5 Leather, Leather and Footw ear
	-0,066	0,0090	0,0236	1,14	1,51	0,55	c19 Sale, Maintenance and Repair of Motor Veh
	-0,080	0,0153	0,0275	5,31	6,27	2,94	c33 Health and Social Work
				6,51	7,85	3,61	sub total
D	-0,012	-0,050	0,054	1,29	1,27	1,48	c1 Agriculture, Hunting, Forestry and Fishing
	-0,090	-0,025	0,056	0,20	0,59	0,20	c2 Mining and Quarrying
	-0,141	-0,033	0,070	2,95	2,07	4,41	c3 Food, Beverages and Tobacco
	-0,126	-0,010	0,060	0,43	0,58	0,96	c4 Textiles and Textile Products
	-0,070	-0,052	0,073	0,44	0,50	0,69	c6 Wood and Products of Wood and Cork
	-0,064	-0,029	0,050	1,61	1,75	2,20	c7 Pulp, Paper, Paper , Printing and Publishing
	-0,129	-0,031	0,079	3,24	2,38	6,38	c9 Chemicals and Chemical Products
	-0,139	-0,032	0,086	1,36	1,12	2,82	c10 Rubber and Plastics
	-0,039	-0,047	0,060	0,80	1,07	0,96	c11 Other Non-Metallic Mineral
	-0,122	-0,063	0,108	5,56	2,99	12,75	c12 Basic Metals and Fabricated Metal
	-0,093	-0,045	0,077	5,01	3,29	8,01	c13 Machinery, Nec
	-0,150	-0,031	0,090	4,38	3,07	8,93	c14 Electrical and Optical Equipment
	-0,017	-0,080	0,086	7,77	2,92	16,06	c15 Transport Equipment
	-0,039	-0,052	0,065	0,82	0,70	1,24	c16 Manufacturing, Nec; Recycling
	-0,062	-0,036	0,058	4,89	6,76	5,27	c18 Construction
	-0,016	-0,022	0,028	3,81	5,26	1,73	c20 Wholesale Trade and Commission Trade, E
	-0,001	-0,041	0,041	0,64	0,14	0,58	c24 Water Transport
	-0,088	-0,064	0,090	0,61	0,29	1,13	c25 Air Transport
			45,82	36,75	75,79	sub total	
Sectors with $I_{0j} > 0$							
	ΔI_{0j}	Δv^*_j	Δm^*_j	%GO11	%VA11	%M11	Sector
B'	0,2190	-0,0138	-0,0466	1,67	0,12	2,59	c8 Coke, Refined Petroleum and Nuclear Fuel
				1,67	0,12	2,59	sub total
D'	0,0022	-0,0404	0,0396	2,74	2,16	2,11	c17 Electricity, Gas and Water Supply
	0,0432	-0,0379	0,0197	3,18	4,13	1,20	c21 Retail Trade, Except of Motor Vehicles and
	0,0686	-0,0594	0,0349	1,56	1,79	1,04	c23 Inland Transport
	0,3766	-0,2310	0,0515	1,70	2,42	1,27	c27 Post and Telecommunications
	0,2157	-0,0937	0,0205	5,01	4,61	2,54	c28 Financial Intermediation
	0,0182	-0,0211	0,0123	10,04	10,59	2,55	c30 Renting of M&Eq and Other Business Activi
	0,0220	-0,0478	0,0363	4,24	6,74	2,44	c31 Public Admin and Defence; Compulsory Soc
	0,0710	-0,0533	0,0089	2,83	4,33	0,58	c32 Education
	0,0184	-0,0273	0,0193	3,72	4,58	1,35	c34 Other Community, Social and Personal Serv
			35,02	41,34	15,07	sub total	

Source: WIOD and authors' calculations

Table 11: Changes in l_{0j} , v^*_j and m^*_j - NETHERLANDS, 1995-2011

Sectors with $l_{0j} < 0$								
	Δl_{0j}	Δv^*_j	Δm^*_j	%GO11	%VA11	%M11		Sector
A	-0,0318	0,0278	-0,0107	0,81	1,14	0,77	c16	Manufacturing, Nec; Recycling
	-0,0315	0,0126	-0,0013	6,42	5,43	5,06	c18	Construction
				6,42	5,43	5,06		sub total
B	-0,089	0,0178	0,0172	1,54	1,85	0,91	c22	Hotels and Restaurants
	-0,096	0,0200	0,0218	1,49	1,33	1,33	c26	Other Supporting and Auxiliary Transport Activities; Activities of Tra
	-0,028	0,0113	0,0054	6,10	7,49	2,06	c33	Health and Social Work
			9,14	10,68	4,30		sub total	
C	-0,056	0,0003	0,0380	1,88	2,69	0,96	c2	Mining and Quarrying
	-0,146	0,0039	0,0403	5,67	3,23	6,65	c3	Food, Beverages and Tobacco
	-0,048	0,0084	0,0148	10,30	10,38	6,30	c30	Renting of M&Eq and Other Business Activities
			17,85	16,29	13,91		sub total	
D	-0,003	-0,054	0,055	2,21	3,48	2,07	c1	Agriculture, Hunting, Forestry and Fishing
	-0,005	-0,020	0,022	0,03	0,06	0,04	c5	Leather, Leather and Footwear
	-0,007	-0,002	0,005	1,63	2,17	1,84	c7	Pulp, Paper, Paper, Printing and Publishing
	-0,437	-0,226	0,472	3,89	0,30	15,88	c8	Coke, Refined Petroleum and Nuclear Fuel
	-0,045	-0,079	0,101	5,26	2,95	11,35	c9	Chemicals and Chemical Products
	-0,012	-0,007	0,012	1,49	0,82	3,06	c15	Transport Equipment
	-0,168	-0,023	0,083	3,39	1,80	4,60	c17	Electricity, Gas and Water Supply
	-0,036	-0,002	0,021	6,36	7,08	4,31	c20	Wholesale Trade and Commission Trade, Except of Motor Vehicles
	0,001	-0,062	0,061	1,75	2,48	1,46	c23	Inland Transport
	-0,052	-0,027	0,049	6,79	6,31	4,00	c28	Financial Intermediation
	-0,016	-0,005	0,011	3,20	2,83	2,00	c34	Other Community, Social and Personal Services
			36,00	30,28	50,61		sub total	
Sectors with $l_{0j} > 0$								
	Δl_{0j}	Δv^*_j	Δm^*_j	%GO11	%VA11	%M11		Sector
B'	0,044719	-0,00385	-0,0176	0,32	0,42	0,54	c4	Textiles and Textile Products
	0,027518	0,006182	-0,01834	0,23	0,25	0,29	c6	Wood and Products of Wood and Cork
				0,54	0,67	0,82		sub total
D'	0,022821	-0,03756	0,026641	0,62	0,57	1,13	c10	Rubber and Plastics
	7,99E-05	-0,02597	0,025937	0,54	0,67	0,65	c11	Other Non-Metallic Mineral
	0,045321	-0,0484	0,026086	2,46	2,05	4,70	c12	Basic Metals and Fabricated Metal
	0,000778	-0,00643	0,006068	2,03	1,32	3,12	c13	Machinery, Nec
	0,033436	-0,04034	0,026293	1,79	1,49	3,40	c14	Electrical and Optical Equipment
	0,016106	-0,0094	0,001339	1,43	1,61	1,15	c19	Sale, Maintenance and Repair of Motor Vehicles and Motorcycles; P
	0,060577	-0,05077	0,022584	2,48	4,28	1,06	c21	Retail Trade, Except of Motor Vehicles and Motorcycles; Repair of H
	0,003903	-0,05189	0,049855	0,43	0,42	0,94	c24	Water Transport
	0,155429	-0,19674	0,122721	0,69	0,67	1,79	c25	Air Transport
	0,057157	-0,05668	0,030866	1,99	2,00	1,43	c27	Post and Telecommunications
	0,143881	-0,08511	0,022746	5,67	7,51	1,70	c29	Real Estate Activities
	0,056813	-0,05422	0,02793	6,03	7,94	2,87	c31	Public Admin and Defence; Compulsory Social Security
	0,025714	-0,03326	0,016766	2,88	4,62	0,60	c32	Education
			29,04	35,14	24,53		sub total	

Source: WIOD and authors' calculations

Table 12: Changes in I_{0j} , v^*_j and m^*_j - FINLAND, 1995-2011							
Sectors with $I_{0j} < 0$							
	ΔI_{0j}	Δv^*_j	Δm^*_j	%GO11	%VA11	%M11	Sector
C	-0,180	0,0177	0,0516	0,04	0,11	0,06	c5 Leather, Leather and Footwear
	-0,051	0,0009	0,0154	1,63	1,47	0,85	c22 Hotels and Restaurants
	-0,045	0,0051	0,0134	7,41	4,95	5,02	c30 Renting of M&Eq and Other Business Activities
				9,08	6,53	5,93	sub total
D	-0,019	-0,039	0,046	2,35	4,49	1,55	c1 Agriculture, Hunting, Forestry and Fishing
	-0,048	-0,032	0,044	3,03	2,57	2,66	c3 Food, Beverages and Tobacco
	-0,258	-0,138	0,283	2,71	0,29	13,47	c8 Coke, Refined Petroleum and Nuclear Fuel
	-0,077	-0,024	0,052	2,40	1,65	3,89	c9 Chemicals and Chemical Products
	-0,024	-0,039	0,048	0,81	0,76	1,30	c10 Rubber and Plastics
	0,112	-0,067	0,031	0,81	0,69	0,82	c11 Other Non-Metallic Mineral
	-0,163	-0,057	0,110	4,74	2,92	11,59	c12 Basic Metals and Fabricated Metal
			16,84	13,35	35,27	sub total	
Sectors with $I_{0j} > 0$							
	ΔI_{0j}	Δv^*_j	Δm^*_j	%GO11	%VA11	%M11	Sector
B'	0,117321	-0,01865	-0,02603	0,67	0,62	0,81	c24 Water Transport
				0,67	0,62	0,81	sub total
D'	0,100829	-0,06373	0,03111	0,58	0,36	0,57	c2 Mining and Quarrying
	0,020337	-0,02665	0,018382	0,24	0,56	0,38	c4 Textiles and Textile Products
	0,16514	-0,07049	0,032368	1,55	1,39	1,02	c6 Wood and Products of Wood and Cork
	0,045017	-0,04511	0,033499	4,71	6,66	4,01	c7 Pulp, Paper, Paper, Printing and Publishing
	0,176989	-0,06178	0,00636	4,73	2,92	6,23	c13 Machinery, Nec
	0,086	-0,07453	0,045723	5,14	3,22	11,32	c14 Electrical and Optical Equipment
	0,001952	-0,03249	0,031808	0,85	1,04	1,39	c15 Transport Equipment
	0,147827	-0,09409	0,047219	0,54	0,62	0,65	c16 Manufacturing, Nec; Recycling
	0,074173	-0,0881	0,053316	2,25	2,72	2,91	c17 Electricity, Gas and Water Supply
	0,090938	-0,03565	0,008985	7,99	4,85	6,45	c18 Construction
	0,125653	-0,06955	0,021421	1,68	1,44	1,14	c19 Sale, Maintenance and Repair of Motor Vehicles and
	0,071575	-0,06537	0,040123	4,59	4,59	3,63	c20 Wholesale Trade and Commission Trade, Except of
	0,153139	-0,09657	0,033665	3,09	3,52	1,81	c21 Retail Trade, Except of Motor Vehicles and Motorcy
	0,182569	-0,13679	0,053378	2,48	3,42	1,66	c23 Inland Transport
	0,17834	-0,13012	0,071712	0,71	0,60	0,76	c25 Air Transport
	0,308088	-0,10971	0,011599	2,92	2,46	1,89	c26 Other Supporting and Auxiliary Transport Activities
	0,197652	-0,10217	0,030203	1,75	1,98	1,09	c27 Post and Telecommunications
	0,175931	-0,09852	0,016265	2,35	4,41	1,31	c28 Financial Intermediation
	-0,02712	-0,00143	0,013447	8,11	9,72	1,83	c29 Real Estate Activities
	0,084804	-0,06375	0,029096	4,28	5,42	2,85	c31 Public Admin and Defence; Compulsory Social Sec
0,017171	-0,01265	0,003675	3,19	5,25	0,84	c32 Education	
0,099603	-0,07021	0,01722	6,32	8,53	2,58	c33 Health and Social Work	
0,071361	-0,05292	0,023845	3,30	3,77	1,65	c34 Other Community, Social and Personal Services	
			73,36	79,45	57,99	sub total	

Source: WIOD and authors' calculations