



DOES TERTIARIZATION EXPLAIN DIFFERENCES IN LABOUR MARKET BEHAVIOUR?: A CROSS NATIONAL APPROACH TO EUROPEAN UNION.

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Abstract: In spite of the efforts made in the construction of a single labour market, the principal labour characteristic of the EU is the persistence of a high heterogeneity. Based on this reality, this paper attempts to check the degree in which labour differences (creation of employment and labour mobility) observed in the different European countries, can be explained by the different degrees and rhythms of employment tertiarization. Using data from the Eurostat Yearbook and the European Community Household Panel (Phogue) we conclude that although the presence of services is not the principal explicative factor of the dispersion observed, a positive relation does exist between tertiarization and labour behaviour in the EU countries. The main conclusion is that services will be related to labour markets with more intense processes of creation of employment and the increase of work flexibility.

1. INTRODUCTION.

There is already a notable quantity of literature concerning the comparative analysis of European labour markets, although the majority are only partial analysis both in terms of countries analysed and questions dealt with. (Contino *et al*,1995; Decressin and Fatás,1995, Werner,1996; Wyplosz,1996 for example). On the other hand, and in spite of the existence of valuable exceptions (Anxo and Storrie,2001; OCDE,2000. among others), there are still few studies which concentrate their attention on the study of the service sector from an European perspective, as well as, the processes of teriarization and the possible effects on national labour markets. By contrast to this reality is the fact that services are the activity which has contributed in the greatest degree to the creation of employment in Europe in the recent past. In fact, all our countries are economies largely marked by services. It is enough to remember that in 1995 employment in tertiary activities represented in average terms, something more than 64% of total employment in EU-15, when in 1960 it was only 39% (OECD, 1996)

Important labour disparities are a relevant characteristic of EU countries. By way of example, employment in Ireland and Spain grew notably between 1994 and 2000 (37 and 23% respectively), whilst in Austria and Germany the growth registered was very slight (0.9 and 3% respectively). Important differences can also be noticed in labour flexibility, functioning of national labour markets and the weight of service industries employment. With reference to the latter, 74% of employment in Holland was dedicated to services whilst only a little more than 56% of employment was dedicated in Greece and Portugal.

Following on from previous analysis (Cuadrado, Iglesias and Llorente,2000) the aim of this paper consists in finding out to what extent the processes of tertiarization are heading towards a leadership of services in the dynamics of labour markets, and that the different degree of terziarization in the EU countries constitutes a relevant explicative factor of the heterogeneity observed both in terms of employment creation and in labour flexibility within the EU.

For this, and using the data given by the Eurostat Yearbook (1989-1999) and the European Community Household Panel (Phogue, 1994-1997), the paper organises its analysis as follow. Section 2 revises the evolution of employment in the EU-12 countries, from both an aggregate point of view and for sectors of the activity, concluding with differences or similarities among countries of the Community. In section 3, the different labour markets of the EU countries are characterised from the point of view of their degree

of flexibility, using data relative to the processes of labour mobility. Section 4 studies the degree in which services are responsible for creation of employment, and consequently, in what measure national differences observed in the terciarization level can explain the intensity differences in the increase of occupation in European countries. A similar analysis, although in relation to labour mobility is made in section 5. The objective is to know the degree in which services explain the differences observed in Europe in terms of functioning of national labour markets. The paper ends with a summary of principal results reached (section 6).

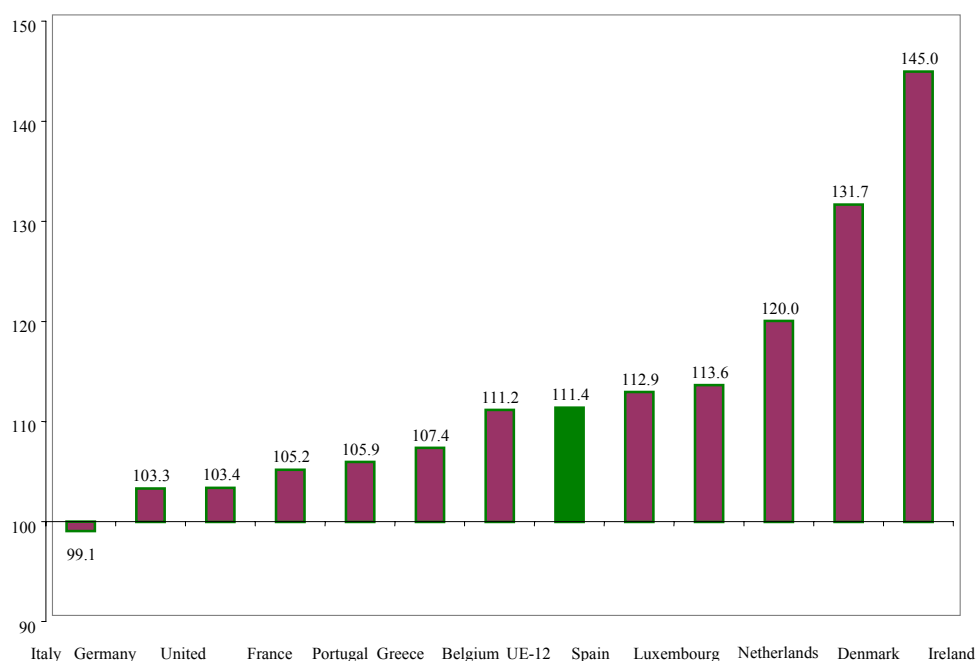
2. EVOLUTION IN EMPLOYMENT AND ITS SECTORAL DISTRIBUTION IN THE EUROPEAN UNION.

Figure 1 shows the evolution of the employed population in twelve countries of the European Union (1989-1999). It proves the existence of very different national intensities in the processes of creation of employment. Italy was the only country where the creation of employment was negative (0.9% less). At the other extreme, Ireland registered a spectacular growth in employment, with an increase of 45%. Spain, Luxembourg, Holland, Denmark as well as Ireland, produced an increase in volume of employment in more than average rates (11.4%). On the contrary, Italy as already mentioned, together with Germany, United Kingdom, France, Portugal, Greece and Belgium registered rates clearly inferior to the EU-12 average.

The European countries are also differentiated in the size of their services and in the intensity of the processes of terciarization (Table 1). Belgium, Germany, Luxembourg, Holland and the United Kingdom in 1999, presented levels of terciarization superior to those observed in the group of twelve countries (66.2% of total employment). On the other hand, it was Belgium, Denmark, Greece, Spain, France, Ireland, Luxembourg and the United Kingdom where the process of terciarization (growth in weight of employment in services) has been most intense.

However, this behaviour has not led to a process of convergence, as shown by figure 2, where the position of each country is compared with respect to the group in terms of weight of tertiary employment in both 1989 and 1999. All countries having a tertiary employment greater than the rest of the group continue to present the same characteristic ten years later. In that all countries situated below the aggregate in 1989 remain in the same position in 1999.

Figure 1. Employment in the EU countries from 1989 to 1999. (Index 1989=100).



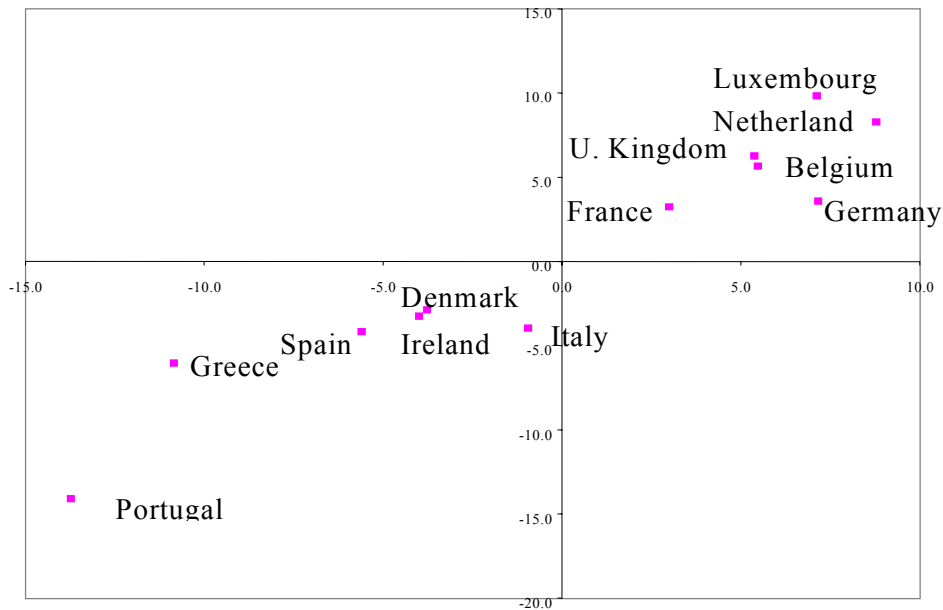
(Source: Eurostat Yearbook).

Table 1. Relative sectoral specialisation (1999) and absolute variation of the weight of the services by country (1989-1999). Sectoral weight of employment for the whole of the EU-12 (1999).

| | Agriculture | Industry | Services | V. Abs. Serv. |
|---------------------|-------------|-------------|-------------|---------------|
| Belgium | -2.0 | -3.6 | 5.7 | 6.6 |
| Germany | -1.1 | -2.5 | 3.6 | 2.8 |
| Denmark | -1.6 | 4.4 | -2.9 | 7.3 |
| Greece | 12.6 | -6.5 | -6.0 | 11.2 |
| Spain | 3.0 | 1.2 | -4.2 | 7.8 |
| France | -0.2 | -3.1 | 3.3 | 6.6 |
| Ireland | 4.2 | -0.9 | -3.2 | 7.1 |
| Italy | 1.0 | 2.9 | -4.0 | 3.4 |
| Luxembourg | -2.7 | -7.1 | 9.8 | 9.1 |
| Netherlands | -1.2 | -7.1 | 8.3 | 5.9 |
| Portugal | 8.2 | 5.8 | -14.1 | 6.0 |
| United Kingdom | -2.9 | -3.4 | 6.3 | 7.3 |
| Weight UE-12 | 4.4 | 29.4 | 66.2 | 6.4 |

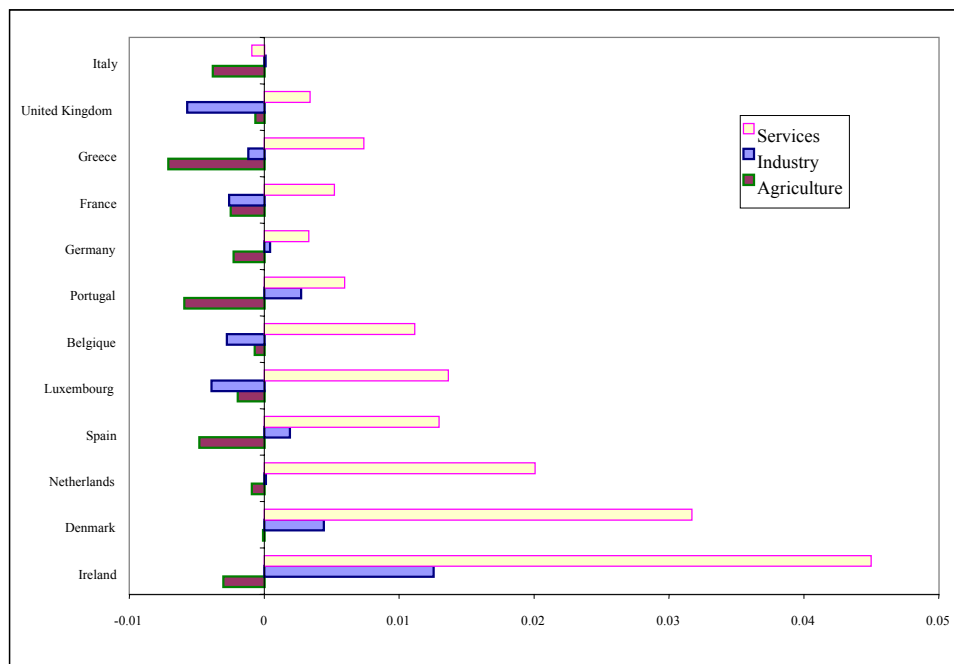
(Source: Own elaboration from data from Eurostat Yearbook).

Figure 2. Differences between the weight of the services by countries and for the EU-12, 1989-1999.



(Source: Own elaboration from data from Eurostat Yearbook).

Figure 3. Sectoral contributions of annual growth of employment by countries, 1989-1999. g



(Source: Eurostat Yearbook).

A final perspective from which we can characterise the differences existing among European countries from the employment point of view, is given by the different contribution effected by each one of the three big sectors¹ in total growth of employment.

The results obtained are shown in figure 3². Despite the fact that in all countries the greatest contributions to employment growth correspond to the service sector, their intensity also varies considerably. The fact is that different national situations can be observed. In Italy, where the net balance of the period has implied a slight destruction in jobs, agriculture is the area that presents the greatest contribution. In Ireland, Denmark, Holland, Spain, Portugal and Germany, although it is the service sector that best explains the employment growth, it shares its position with Industry, which also presents positive contributions. On the contrary, in the United Kingdom, Greece, France, Belgium and Luxembourg all creation of jobs is explained by tertiary evolution.

3. LABOUR MOBILITY IN THE WORK MARKETS OF EUROPEAN COUNTRIES.

The EU countries are also differentiated in terms of the performance of their labour markets, in what refers to degree of labour flexibility. For the study of this, the concept of labour flexibility has been approximated by means of the calculation of different indicators of mobility, broken down by sector. Using the Phogue data (1994-1996) three break down gross labour flows have been measured; flows of hiring, of firing and of total mobility (individuals who have participated in any of the two previous gross flows). The indicators have been calculated in two different ways, depending on whether only internal movements are taken into account (from job to job or to unemployment, or from job or unemployment to job, meaning that the origin or destination is always within the working population) or also the external movements (work mobility from job to job, or to unemployment or inactivity). From a contrary perspective, there are also movements from employment, unemployment or inactivity to employment. We are dealing with movements within both the active population as well as the non-active. The data is expressed always as averages of annual data for the whole period³.

Figure 4 shows the difference existing between indicators of total mobility⁴ for each country and the EU-12, breaking down the results for the four main sectors of activity⁵. With the help of this, the evident heterogeneity is proved which defines the European labour markets. From this point of view:

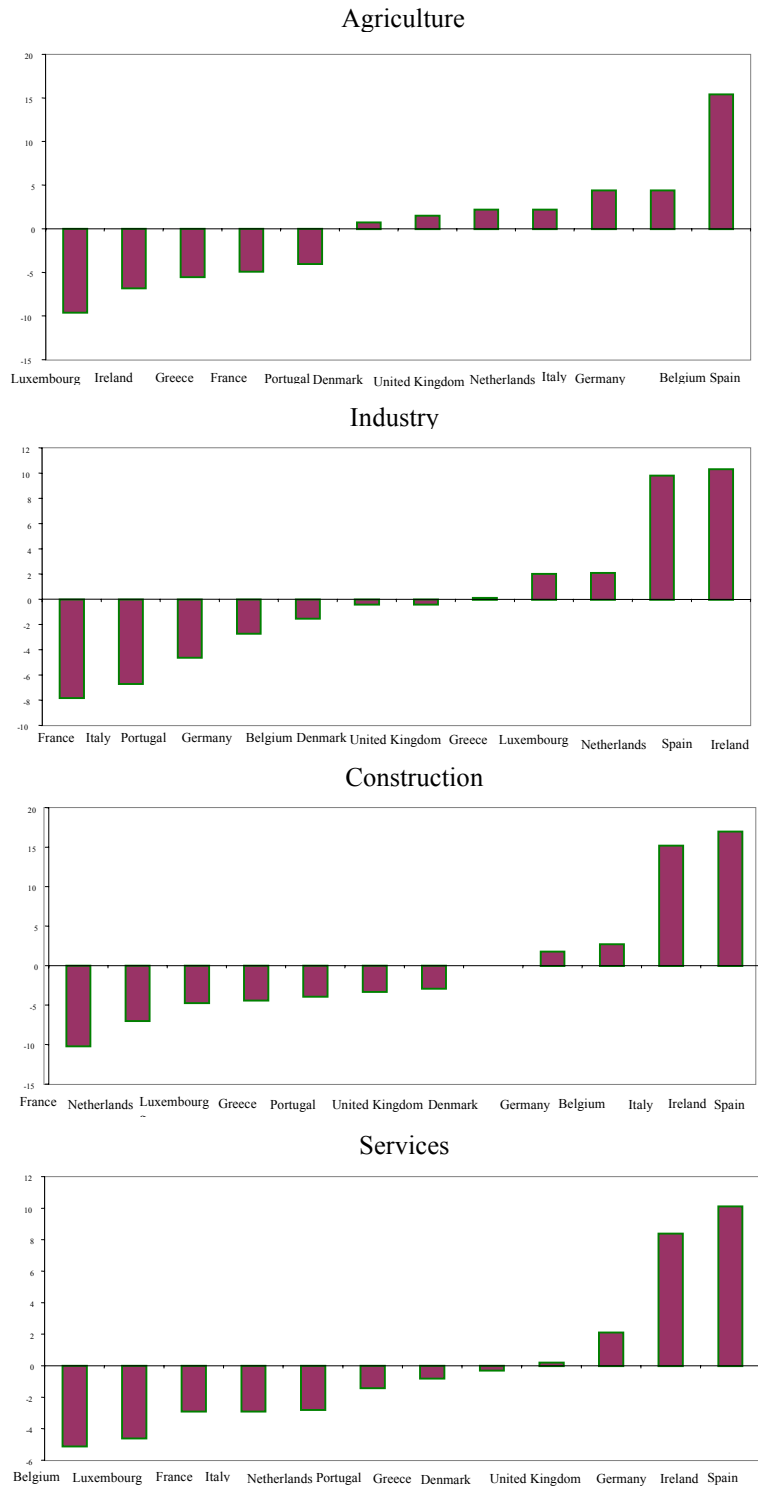
- Spain is the country with greatest labour flexibility and with mobility indicators superior to those of the EU-12 for the four sectors of activity. In addition, it presents the greatest differences with the other countries in Agriculture, Construction and Services.
- Ireland also stands out in importance in gross labour flows, presenting levels higher than the EU-12 in Industry, Construction, and Services.
- On the contrary, France and Greece are always below the levels of mobility for sectors of the EU-12.

Within Services we can also detect important differences by countries in terms of labour mobility. If, in accordance with the information included in the annex, we divide the service sector in nine basic activities, it can be observed that for the group of the EU-12 the activities of Hotels and Restaurants, and Other Services, are those showing greater indicators of total mobility. On the contrary, the most reduced values are in Financial Activities and Public Administration.

By countries, this type of behaviour is generally so in the case of activities with greater mobility (with the exception of Portugal in the case of Hotels and Restaurants, and Italy with respect to Other Services) although they present enormous differences in the other activities considered. In table 2, the Pearson coefficient is calculated to measure the degree of dispersion existing by countries in terms of total mobility and for each of the nine tertiary activities considered. Hotels and restaurants, Other services and Business services are the industries where mobility varies most intensely among countries of the EU-12 (with coefficients of variation which double those obtained for the totality of the services), in that Transport and Communication and Financial Inter-mediation are the activities with a greater limitation in their variation.

A final analysis from which we can characterise the existing heterogeneity consists in determining the contribution effected by each one of the four big sectors of activity on the increase of labour mobility (Figure 5). The existence of very different national behaviour is proved. In half of these (Portugal, France, Holland, Germany, Denmark and the United Kingdom) the greater contribution (positive or negative) belonged to the tertiary sector. However, in Belgium, Spain, Italy, Greece, and Luxembourg the emphasis falls on industrial activities, whilst in Ireland this happens in Construction.

Figure 4. Difference between the total mobility by countries in the EU-12, 1994-1996.



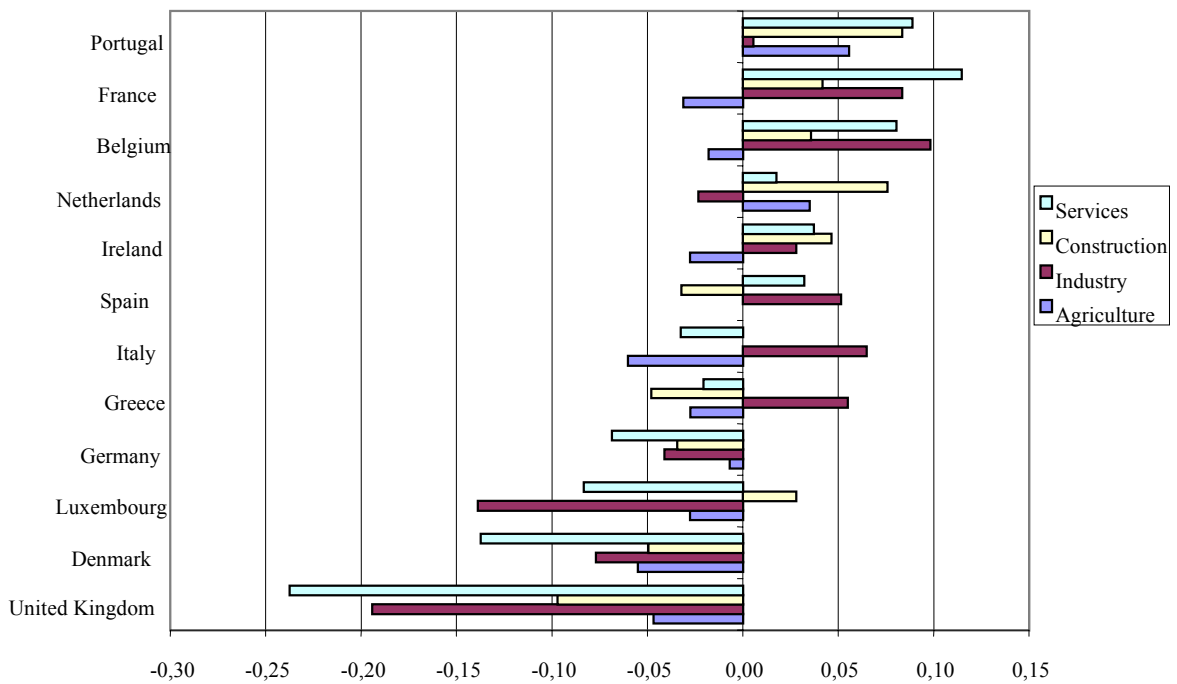
(Source: Own elaboration from Phogue).

Table 2. Degree of dispersion by countries of the EU-12 of the indexes of total mobility for tertiary activities.

| Service Sectors | Coefficient of Pearson variation |
|--|----------------------------------|
| Transport and Communications | 1.07 |
| Financial Intermediation | 1.23 |
| Total Services | 1.26 |
| Education | 1.34 |
| Wholesale, Retail Trade and Vehicle repair | 1.35 |
| Public Administration and Defence | 1.64 |
| Health and Social Work | 1.67 |
| Business services | 2.67 |
| Other Services | 3.02 |
| Hotels and Restaurants. | 4.07 |

(Source: Own elaboration from Phogue data 1994-1996).

Figure 5. Sectoral contribution to the annualised growth of the total work mobility⁶.



(Source: Own elaboration from Phogue data .1994-1996).

Box 1. Shift-share analysis on net employment growth.

Definition of terms.

- Annualised net employment growth in country i (EG_i):

$$EG_i = \frac{\sum_{j=1}^n (N_{ijT} - N_{ij0})}{(T * \sum_{j=1}^n N_{ij0})}$$

Where N_{ijt} denote employment in country i, sector j and year t.

- Sectoral contribution to annualised employment growth of sector j in country i (SC_{ij}):

$$SC_{ij} = EG_{ij} * W_{ij0}$$

Where EG_{ij} is employment growth in country i and sector j:

$$EG_{ij} = (N_{ijT} - N_{ij0}) / (T * N_{ij0})$$

And W_{ij0} is the share of sector j in total employment at the initial date:

$$W_{ij0} = N_{ij0} / \sum_{j=1}^n N_{ij0}$$

- Growth in country i assuming a common initial distribution (CID_i):

$$CID_i = \sum_{j=1}^n (EG_{ij} * \bar{W}_{j0})$$

Where \bar{W}_{j0} is the employment share of sector j in the overall sample at initial date:

$$\bar{W}_{j0} = \frac{\sum_{i=1}^m N_{ij0}}{\sum_{i=1}^m \sum_{j=1}^n N_{ij0}}$$

- Growth in country i assuming common sectoral growth rates (CSG_i):

$$CSG_i = \sum_{j=1}^n \bar{EG}_j * W_{ij0}$$

Where \bar{EG}_j is the annualised employment growth of sector j in the overall sample:

$$\bar{EG}_j = \left(\frac{\sum_{i=1}^m N_{ijT} - \sum_{i=1}^m N_{ij0}}{\sum_{i=1}^m N_{ij0}} \right)$$

Shift-share decomposition:

- Relative annualised employment growth in country i (REG_i): $REG_i = EG_i - \bar{EG}$ where \bar{EG} is the annualised employment growth in the overall sample.
- Competitive effect in country i (CE_i): $CE_i = CID_i - \bar{EG}$
- Sectoral-mix effect in country i (SE_i): $SE_i = CSG_i - \bar{EG}$
- Residual in country i (R_i): $R_i = REG_i - CE_i - SE_i$

(Source: OECD,2000).

4. DO THE DIFFERENT DEGREES OF TERTIARIZATION EXPLAIN THE NATIONAL DIFFERENCES OBSERVED IN THE EMPLOYMENT EVOLUTION?

By means of the shift-share analysis we can study the extent to which the national differences observed in the evolution of employment are related to sectoral structure (Ray and Harvey, 1995). For this, we have broken down the difference between employment growth observed and the employment in each country and the growth produced for the group of all countries in three effects (see Box):

a) A "competitive" effect, which measures the importance of the differences between growth of employment in one sector of each country and the group of countries in average terms (what would have been the differential growth of the employment of each country with the group if they had had a common initial sectoral distribution).

b) A "sectoral-mix composition" effect, which quantifies the contribution of the sectoral composition of employment (what would the growth differential of work have been in each country in comparison with the group, if it had had identical rates of work growth per sector):

c) A "residual" effect, which approximates the fact that employment behaves more favourably in the sectors in which each country is specialised in relation with the group of countries.

Table 3 and figure 6 show the results obtained in this analysis . The data permits us to highlight the following conclusions:

a) The "competitive" effect is that which in greater measure explains the dispersion existing in countries in terms of creation of employment (coefficient of correlation of 0.98). The countries which have seen an increase in their rate of employment to that of the group are those which represent the greatest values. From this point of view, the most relevant fact is the national behaviours in terms of growth in the sectors, as opposed to that of sectoral composition.

b) On the contrary, the "sectoral-mix composition" effect explains only slightly the differences in the evolution of differential growth of employment (correlation coefficient of 4%).

c) The differential of employment growth by countries rests on the "sectoral-mix composition" effect, which reaches an average value of 0.27 (against 0.006 of

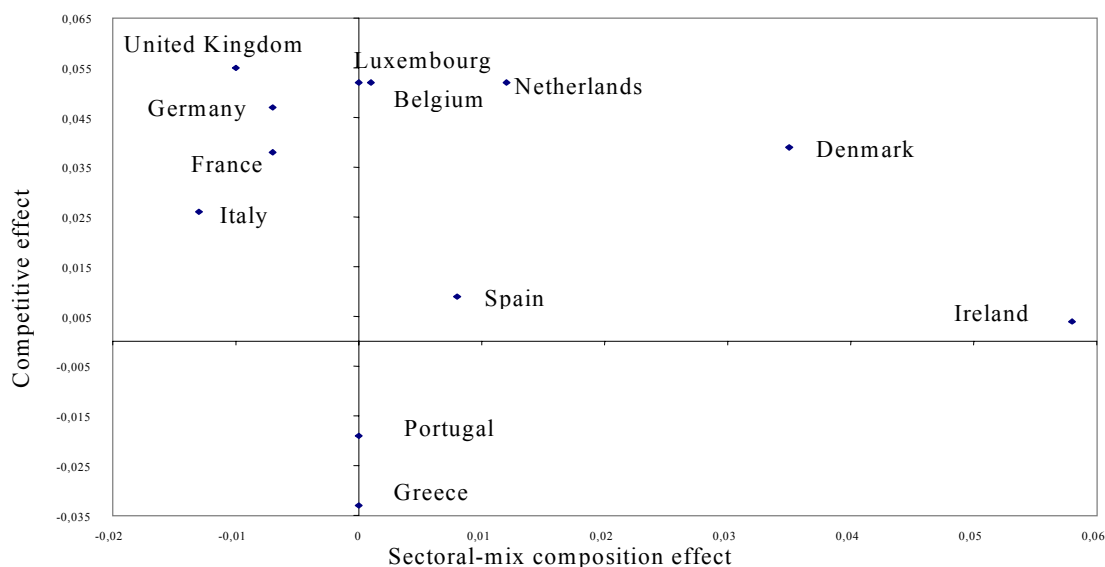
"competitive" effect"). United Kingdom, Holland, Belgium, Luxembourg, Germany, Denmark, and France are the countries that show the best results. These countries present the characteristic of being the group of countries with tertiarization levels above EU-12 group, with the only exception of Denmark (which shows a slightly lower tertiary). If all countries had increased their sectoral employment at the same rhythm, the best results would probably have been in those countries with higher weight of services.

Table 3. Shift-share analysis of employment growth, 1989-1999. Three main sectors.

| | Relative Annualised Growth | Competitive effect | Sectoral-mix Composition effect | Residual effect |
|--|-----------------------------------|---------------------------|--|------------------------|
| Ireland | 0,046 | 0,058 | 0,004 | -0,017 |
| Denmark | 0,027 | 0,035 | 0,039 | -0,046 |
| Netherlands | 0,010 | 0,012 | 0,052 | -0,053 |
| Spain | 0,001 | 0,008 | 0,009 | -0,015 |
| Belgium | -0,001 | 0,001 | 0,052 | -0,054 |
| Luxembourg | -0,001 | 0,000 | 0,052 | -0,054 |
| Portugal | -0,006 | 0,000 | -0,019 | 0,013 |
| Germany | -0,007 | -0,007 | 0,047 | -0,047 |
| France | -0,009 | -0,007 | 0,038 | -0,040 |
| Greece | -0,010 | 0,000 | -0,033 | 0,024 |
| United Kingdom | -0,012 | -0,010 | 0,055 | -0,056 |
| Italy | -0,014 | -0,013 | 0,026 | -0,027 |
| Average | 0,002 | 0,006 | 0,027 | -0,031 |
| C. Correlat. vs. Annual. Rel. Growth. | | 0,98 | -0,04 | -0,05 |

(Source: Own elaboration from Eurostat Yearbook data).

Figure 6. Shift-share analysis of employment growth, 1989-1999. Main sectors.



(Source: Own elaboration from Eurostat Yearbook data.)

5. DOES TERTIARIZATION ACCOUNT FOR THE NATIONAL DIFFERENCES OBSERVED IN THE EVOLUTION OF LABOUR MOBILITY?

Applying the methodology used in the previous section, we can also analyse to what extent national differences in terms of labour mobility are related or not, with the different sectoral structures of employment. Table 4 and Figure 7 show the main results derived from the breakdown and from which conclusions can be drawn:

- a) The "competitive " effect and the "residual" effect share the explicative leadership of the existing dispersion by countries in terms of labour mobility, although they do so in opposite ways. The mobility by countries shows a positive relation with the importance of the "residual" effect and negative with the "competitive" one.
- b) Those countries that have increased their labour mobility to a larger degree, have done so either because of an increase of mobility in the relatively specialised sectors ("competitive" effect), or because mobility has increased in some other sector ("residual" effect).
- c) The differences in sectoral composition of employment by countries explains relatively little about the dispersion observed in terms of labour mobility (correlation coefficient of -0.24).

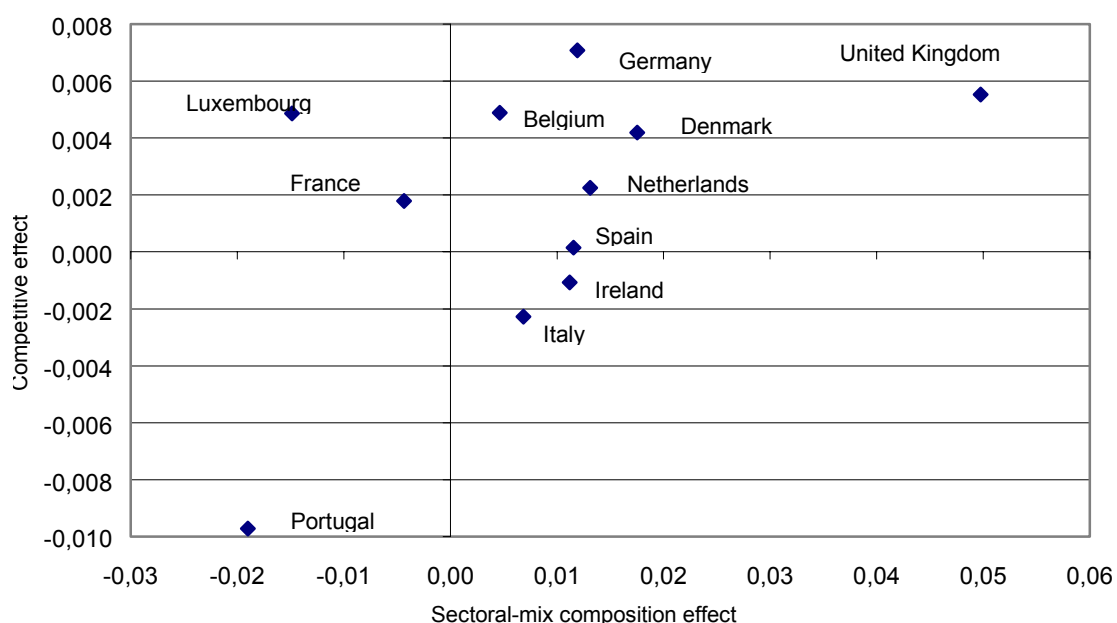
Table 4. Shift-share analysis of annualised growth of the total labour mobility⁶

| | Relative Annualised Growth | Competitive effect | Sectoral-mix Composition effect | Residual effect |
|---|-----------------------------------|---------------------------|--|------------------------|
| Germany | -0,01 | 0,012 | 0,0071 | -0,03 |
| Denmark | -0,04 | 0,018 | 0,0042 | -0,06 |
| Netherlands | -0,02 | 0,013 | 0,0023 | -0,04 |
| Belgium | 0,06 | 0,005 | 0,0049 | 0,05 |
| Luxembourg | 0,27 | -0,015 | 0,0049 | 0,28 |
| France | 0,15 | -0,004 | 0,0018 | 0,15 |
| United Kingdom | -0,34 | 0,050 | 0,0055 | -0,40 |
| Ireland | 0,00 | 0,011 | -0,0011 | -0,01 |
| Italy | 0,04 | 0,007 | -0,0023 | 0,04 |
| Greece | -0,06 | 0,017 | -0,0105 | -0,07 |
| Spain | 0,00 | 0,012 | 0,0002 | -0,02 |
| Portugal | 0,26 | -0,019 | -0,0097 | 0,29 |
| Average | 0,026 | 0,009 | 0,001 | 0,016 |
| C. Correlat. vs. Rel. Anual. Growth. | | -0.99 | -0.24 | 0.99 |

(Source: Own elaboration from Phogue data. 1994-1996)

d) However, perhaps the most important aspect to note is that all countries showing a positive sectoral-mix effect are characterised by having a weight in tertiary employment that is higher than the EU-12 (Germany, Holland, Belgium, Luxembourg, France and the United Kingdom). This seems to be an important indication that tertiarization contributes positively to labour flexibility, even when it is not the most important factor in global terms.

Figure 7. Competitive effect and sectoral-mix composition for the EU countries.



(Source: Prepared by the authors from Phogue data).

6. FINAL REMARKS.

Despite the important effort made to advance towards and make European integration a reality, in general, and in particular, the construction of a single labour market, the principal characteristic that still defines the EU is the existence of a high labour heterogeneity and the persistence of high levels of dispersion. Based on this reality, and taking into account the progressive and ever greater importance of services in sectoral structures of the European countries, this paper has tried to provide empirical data to find out if:

a) The services and the progressive tertiarization of European employment constitute relevant factors to explain the dispersion observed.

b) The level and rhythm of tertiarization differentiates the labour markets of European countries in terms of their functioning and results.

For this, and by means of a shift-share methodology, the analysis has assumed a double perspective, having dealt with the verification of both affirmations firstly from the point of view of the processes of creation of employment and then from the degree of labour dynamism (mobility processes). Our analysis has led to a series of results that, in our opinion, are relevant. Among these, we draw attention to the following:

a) The processes of creation of employment which took place between 1989 and 1999 possessed a very different intensity in the EU-12 countries.

b) A high level of intensity can also be observed when considering the weight of services over total employment and the rhythm of growth experimented by tertiary activities.

c) If we approximate the functioning of the labour markets through the capacity of adjustment and therefore, of the importance of the processes of labour mobility (gross flows of workers), we conclude that there are countries coexisting in Europe with very different degrees of labour dynamism.

d) These differences can also be observed when we break down the analysis sectorally:

* In all the countries studied, services were the activities that have highly contributed to employment creation. Important differences can be observed in intensity and in leadership (countries where all the contribution was totally concentrated on the services as opposed to others where it was shared with other types of activities).

* From the labour mobility perspective, together with countries where the greatest contributions corresponded to the service sector, we can also observe others where these processes have been based, in greater measure, on Industry or on Construction.

e) From both the point of view of creation of employment and of labour mobility, we conclude that the most important explicative factor for the degree of dispersion existing in Europe is the behaviour followed by different sectors, more than sectoral composition.

f) However, the explanation of differential behaviour by countries rests largely on the different sectoral composition. The larger the presence of services, the larger is the value of the "sectoral-mix" effect. This implies that the most tertiarized countries have obtained better results in terms of creation of employment.

g) Even when the results have not been reached in the EU-12 group, the previous affirmation is also made from the perspective of labour mobility. The countries with greater levels of tertiarization also show positive contributions to the increase of labour mobility.

Finally, even though it cannot be affirmed that tertiarization constitutes the most relevant factor to explain the labour disparities observed in Europe, it can be concluded that there is an important positive relation between the presence of services, the creation of employment and labour dynamics.

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ANNEXES

A.1. Hiring, firing and total mobility for main sectors as a percentage of the population in each category. Total EU-12 (Source: PHOGUE, 1994-1996).

| | Percentage of hiring | | Percentage of firing | | Total mobility | |
|--------------|----------------------|------|----------------------|------|----------------|------|
| | (1) | (2) | (1) | (2) | (1) | (2) |
| Agriculture | 6,0 | 11,1 | 6,4 | 14,5 | 12,4 | 25,6 |
| Industry | 8,0 | 10,9 | 7,5 | 12,2 | 15,5 | 23,0 |
| Construction | 10,1 | 13,0 | 8,8 | 12,5 | 18,9 | 25,4 |
| Services | 4,8 | 9,2 | 4,0 | 9,0 | 8,8 | 18,2 |

(1) Includes "internal" movement within the active population. (2) Includes "external" movements within the active and inactive population.

A.2. Hiring, firing and total mobility for the large sectors as a percentage of the population in each category. Total EU-12. (Source: PHOGUE, 1994-1996).

| Averages 1994-1995 / 1995-1996 | | Percentage of hiring | | Percentage of firing | | Total mobility | |
|--------------------------------|----------------|----------------------|------|----------------------|------|----------------|------|
| | | (1) | (2) | (1) | (2) | (1) | (2) |
| Agriculture | Germany | 7,8 | 11,9 | 11,7 | 18,1 | 19,4 | 30,0 |
| | Denmark | 9,4 | 13,3 | 8,2 | 13,1 | 17,5 | 26,3 |
| | Netherlands | 6,6 | 15,3 | 5,3 | 12,4 | 11,9 | 27,8 |
| | Belgium | 5,6 | 16,0 | 4,9 | 14,0 | 10,5 | 30,0 |
| | Luxembourg | 4,2 | 10,9 | 0,0 | 5,2 | 4,2 | 16,0 |
| | France | 5,0 | 7,4 | 3,2 | 13,3 | 8,1 | 20,7 |
| | United Kingdom | 9,0 | 12,1 | 10,4 | 15,0 | 19,5 | 27,1 |
| | Ireland | 2,9 | 6,1 | 6,2 | 12,7 | 9,1 | 18,8 |
| | Italy | 5,5 | 9,9 | 6,1 | 17,9 | 11,6 | 27,8 |
| | Greece | 2,1 | 4,6 | 4,0 | 15,6 | 6,1 | 20,1 |
| | Spain | 11,0 | 16,8 | 11,6 | 24,3 | 22,6 | 41,0 |
| | Portugal | 3,4 | 8,9 | 4,8 | 12,7 | 8,2 | 21,6 |
| Industry | Germany | 5,2 | 8,4 | 6,6 | 11,9 | 11,8 | 20,3 |
| | Denmark | 9,2 | 10,6 | 7,0 | 12,0 | 16,2 | 22,6 |
| | Netherlands | 7,7 | 11,4 | 9,0 | 13,7 | 16,7 | 25,1 |
| | Belgium | 7,3 | 10,0 | 8,1 | 11,5 | 15,5 | 21,5 |
| | Luxembourg | 10,9 | 12,6 | 7,1 | 12,5 | 18,0 | 25,0 |
| | France | 4,7 | 7,6 | 4,0 | 7,6 | 8,6 | 15,2 |
| | United Kingdom | 9,9 | 11,4 | 7,5 | 11,1 | 17,5 | 22,6 |
| | Ireland | 11,5 | 18,3 | 10,1 | 15,0 | 21,7 | 33,3 |
| | Italy | 5,9 | 7,8 | 4,6 | 8,5 | 10,5 | 16,3 |
| | Greece | 6,1 | 8,5 | 8,0 | 14,6 | 14,1 | 23,1 |
| | Spain | 12,0 | 15,2 | 12,6 | 17,6 | 24,6 | 32,8 |
| | Portugal | 5,7 | 8,6 | 5,2 | 9,9 | 10,9 | 18,4 |
| Construction | Germany | 9,3 | 12,0 | 9,2 | 13,4 | 18,5 | 25,4 |
| | Denmark | 12,1 | 13,2 | 6,4 | 9,3 | 18,4 | 22,5 |
| | Netherlands | 7,9 | 10,9 | 4,6 | 7,5 | 12,5 | 18,4 |
| | Belgium | 9,7 | 12,9 | 10,6 | 14,4 | 20,3 | 27,2 |
| | Luxembourg | 7,0 | 11,4 | 6,0 | 9,3 | 13,0 | 20,7 |
| | France | 4,4 | 6,6 | 4,6 | 8,6 | 9,1 | 15,2 |
| | United Kingdom | 9,7 | 10,9 | 8,0 | 11,2 | 17,8 | 22,1 |
| | Ireland | 15,6 | 23,0 | 14,1 | 17,6 | 29,7 | 40,6 |
| | Italy | 9,7 | 11,6 | 11,4 | 16,5 | 21,1 | 28,1 |
| | Greece | 7,4 | 9,0 | 7,5 | 12,0 | 14,9 | 21,0 |
| | Spain | 18,7 | 21,4 | 16,7 | 20,9 | 35,4 | 42,4 |
| | Portugal | 10,2 | 12,6 | 6,0 | 8,9 | 16,2 | 21,5 |

A.2 Hiring, firing and total mobility for main sectors as a percentage of population in each category. Total EU-12.(Source: PHOGUE, 1994-1996) Continuation.

| Averages 1994-1995 / 1995-1996 | | Percentage of hiring | | Percentage of firing | | Total mobility | |
|--------------------------------|----------------|----------------------|------|----------------------|------|----------------|------|
| | | (1) | (2) | (1) | (2) | (1) | (2) |
| Services | Germany | 5,3 | 10,5 | 4,2 | 9,9 | 9,6 | 20,3 |
| | Denmark | 4,4 | 8,6 | 4,1 | 9,3 | 8,4 | 17,9 |
| | Netherlands | 3,4 | 8,4 | 2,4 | 7,0 | 5,8 | 15,4 |
| | Belgium | 3,4 | 6,7 | 2,4 | 6,5 | 5,8 | 13,1 |
| | Luxembourg | 3,4 | 6,9 | 2,5 | 6,8 | 5,9 | 13,6 |
| | France | 4,4 | 7,9 | 3,4 | 7,5 | 7,8 | 15,3 |
| | United Kingdom | 4,2 | 7,9 | 5,1 | 10,5 | 9,3 | 18,4 |
| | Ireland | 6,0 | 14,7 | 4,8 | 11,8 | 10,8 | 26,6 |
| | Italy | 4,3 | 7,0 | 3,6 | 8,3 | 7,9 | 15,3 |
| | Greece | 5,1 | 8,4 | 3,9 | 9,0 | 9,1 | 17,4 |
| | Spain | 9,6 | 14,1 | 8,1 | 14,2 | 17,7 | 28,3 |
| | Portugal | 4,3 | 9,3 | 3,4 | 7,5 | 7,8 | 16,8 |

A.3. Hiring, firing and total mobility for the service sector as a percentage of the population in each category. Total EU-12. (Source: PHOGUE, 1994-1996).

| | Percentage of hiring | | Percentage of firing | | Total mobility | |
|--|----------------------|------|----------------------|------|----------------|------|
| | (1) | (2) | (1) | (2) | (1) | (2) |
| Wholesale, retail Trade and Vehicle repair | 7,7 | 13,0 | 7,2 | 12,8 | 14,9 | 25,8 |
| Hotels and Restaurants | 14,0 | 23,4 | 14,9 | 25,4 | 29,0 | 48,8 |
| Transport and Communication | 6,9 | 9,2 | 6,4 | 10,1 | 13,3 | 19,3 |
| Financial intermediation | 5,9 | 8,2 | 5,1 | 8,1 | 11,0 | 16,3 |
| Business Services | 10,2 | 15,4 | 10,4 | 14,5 | 20,6 | 29,9 |
| Public Administration and Defence | 5,6 | 7,6 | 5,1 | 8,2 | 10,8 | 15,8 |
| Education | 6,2 | 9,8 | 4,7 | 8,7 | 10,9 | 18,5 |
| Health and Social Work | 6,4 | 10,8 | 4,9 | 9,4 | 11,3 | 20,2 |
| Other Services | 13,0 | 21,0 | 11,2 | 20,3 | 24,2 | 41,3 |

(1) Includes "internal" movements. From job to job and from and to unemployment.

(2) Includes "external" movements. From job to job, and from and to unemployment and from and to inactivity.

A.4. Hiring, firing and total mobility for service sectors as a percentage of the population in each category. Total EU-12. (Source: PHOGUE, 1994-1996).

| 1994-1996 | | Percentage of hiring | | Percentage of firing | | Total mobility | |
|--|----------------|----------------------|------|----------------------|------|----------------|------|
| | | (1) | (2) | (1) | (2) | (1) | (2) |
| Wholesale, retail Trade and Vehicle repair | Germany | 7,5 | 12,9 | 8,8 | 14,6 | 16,2 | 27,6 |
| | Denmark | 10,6 | 14,6 | 8,6 | 14,5 | 19,2 | 29,1 |
| | Netherlands | 6,4 | 12,5 | 7,2 | 12,8 | 13,6 | 25,2 |
| | Belgium | 8,5 | 16,0 | 7,1 | 13,6 | 15,6 | 29,6 |
| | Luxembourg | 9,2 | 12,9 | 3,7 | 7,7 | 12,9 | 20,6 |
| | France | 5,8 | 9,3 | 6,6 | 10,8 | 12,4 | 20,1 |
| | United Kingdom | 8,2 | 13,0 | 8,5 | 13,7 | 16,7 | 26,6 |
| | Ireland | 7,5 | 19,1 | 10,2 | 19,0 | 17,7 | 38,1 |
| | Italy | 5,3 | 8,9 | 5,4 | 10,5 | 10,7 | 19,4 |
| | Greece | 6,7 | 10,4 | 5,7 | 12,3 | 12,4 | 22,7 |
| | Spain | 11,3 | 15,8 | 9,2 | 16,3 | 20,5 | 32,0 |
| | Portugal | 5,9 | 10,7 | 5,0 | 7,9 | 10,9 | 18,5 |

A.4. Hiring, firing and total mobility for service sectors as a percentage of the population in each category. Total EU-12. (Source: PHOGUE, 1994-1996). Cont. 1

| 1994-1996 | | Percentage of hiring | | Percentage of firing | | Total mobility | |
|------------------------------------|----------------|----------------------|------|----------------------|------|----------------|------|
| | | (1) | (2) | (1) | (2) | (1) | (2) |
| Hotels and Restaurants | Germany | 20,0 | 29,2 | 20,4 | 29,6 | 40,3 | 58,9 |
| | Denmark | 23,5 | 30,4 | 22,1 | 34,1 | 45,6 | 64,5 |
| | Netherlands | 15,8 | 32,8 | 17,4 | 29,4 | 33,2 | 62,2 |
| | Belgium | 14,9 | 26,5 | 11,8 | 20,8 | 26,7 | 47,3 |
| | Luxembourg | 5,9 | 15,2 | 16,9 | 22,6 | 22,8 | 37,8 |
| | France | 14,4 | 22,5 | 9,1 | 19,6 | 23,5 | 42,1 |
| | United Kingdom | 12,6 | 19,3 | 16,8 | 26,8 | 29,4 | 46,2 |
| | Ireland | 15,5 | 35,3 | 19,3 | 39,6 | 34,8 | 74,9 |
| | Italy | 11,2 | 17,2 | 9,6 | 17,5 | 20,8 | 34,7 |
| | Greece | 7,9 | 14,9 | 10,7 | 22,8 | 18,7 | 37,7 |
| | Spain | 17,2 | 23,9 | 16,1 | 28,1 | 33,3 | 52,0 |
| | Portugal | 9,5 | 13,2 | 9,1 | 14,0 | 18,6 | 27,2 |
| Transport and Communication | Germany | 9,5 | 14,3 | 7,6 | 14,1 | 17,1 | 28,5 |
| | Denmark | 9,8 | 11,6 | 10,6 | 12,7 | 20,4 | 24,2 |
| | Netherlands | 5,3 | 7,1 | 7,1 | 10,2 | 12,4 | 17,3 |
| | Belgium | 6,9 | 8,8 | 5,3 | 6,3 | 12,2 | 15,1 |
| | Luxembourg | 5,0 | 9,1 | 9,3 | 14,2 | 14,2 | 23,3 |
| | France | 6,1 | 8,0 | 2,8 | 5,7 | 8,9 | 13,6 |
| | United Kingdom | 6,9 | 8,0 | 6,8 | 10,0 | 13,8 | 18,0 |
| | Ireland | 8,6 | 12,3 | 5,3 | 8,4 | 13,9 | 20,7 |
| | Italy | 4,6 | 5,9 | 3,2 | 7,9 | 7,8 | 13,9 |
| | Greece | 4,8 | 6,4 | 6,4 | 10,3 | 11,1 | 16,7 |
| | Spain | 9,4 | 11,0 | 7,1 | 10,8 | 16,5 | 21,8 |
| | Portugal | 5,4 | 7,3 | 5,8 | 10,8 | 11,2 | 18,1 |
| Financial intermediation | Germany | 7,0 | 8,7 | 6,4 | 11,6 | 13,3 | 20,4 |
| | Denmark | 5,4 | 7,3 | 9,1 | 11,6 | 14,5 | 18,9 |
| | Netherlands | 6,9 | 9,1 | 5,0 | 9,1 | 11,9 | 18,2 |
| | Belgium | 5,0 | 6,7 | 1,8 | 3,9 | 6,8 | 10,6 |
| | Luxembourg | 4,0 | 6,5 | 4,1 | 5,6 | 8,1 | 12,1 |
| | France | 4,5 | 7,2 | 4,2 | 7,4 | 8,8 | 14,7 |
| | United Kingdom | 6,3 | 8,2 | 5,7 | 9,7 | 11,9 | 17,9 |
| | Ireland | 8,6 | 13,3 | 8,5 | 11,9 | 17,2 | 25,2 |
| | Italy | 8,6 | 13,3 | 8,5 | 11,9 | 17,2 | 25,2 |
| | Greece | 10,7 | 12,5 | 3,0 | 4,5 | 13,6 | 17,0 |
| | Spain | 5,1 | 6,9 | 6,2 | 8,7 | 11,3 | 15,6 |
| | Portugal | 3,1 | 5,5 | 4,8 | 7,8 | 7,8 | 13,2 |
| Business Services | Germany | 12,9 | 22,1 | 11,9 | 18,0 | 24,9 | 40,2 |
| | Denmark | 6,5 | 10,0 | 14,0 | 16,5 | 20,5 | 26,5 |
| | Netherlands | 10,3 | 16,6 | 8,7 | 13,9 | 19,0 | 30,5 |
| | Belgium | 5,3 | 6,8 | 8,7 | 12,2 | 14,0 | 19,0 |
| | Luxembourg | 8,8 | 12,4 | 10,6 | 12,5 | 19,4 | 24,9 |
| | France | 7,3 | 9,9 | 5,5 | 8,2 | 12,8 | 18,1 |
| | United Kingdom | 9,0 | 13,9 | 9,7 | 13,3 | 18,8 | 27,2 |
| | Ireland | 15,9 | 24,1 | 14,3 | 19,0 | 30,2 | 43,1 |
| | Italy | 15,9 | 24,1 | 14,3 | 19,0 | 30,2 | 43,1 |
| | Greece | 10,5 | 15,1 | 8,5 | 12,2 | 19,0 | 27,3 |
| | Spain | 16,6 | 22,8 | 15,0 | 19,8 | 31,6 | 42,6 |
| | Portugal | 11,2 | 19,8 | 10,0 | 15,2 | 21,2 | 35,1 |

A.4. Hiring, firing and total mobility for service sectors as a percentage of the population in each category. Total EU-12. (Source: PHOGUE, 1994-1996). Cont. 2

| 1994-1996 | | Percentage of hiring | | Percentage of firing | | Total mobility | |
|-----------------------------------|----------------|----------------------|------|----------------------|------|----------------|------|
| | | (1) | (2) | (1) | (2) | (1) | (2) |
| Public Administration and defence | Germany | 4,8 | 7,6 | 4,8 | 8,4 | 9,6 | 16,0 |
| | Denmark | 10,3 | 12,7 | 11,6 | 16,7 | 22,0 | 29,4 |
| | Netherlands | 4,5 | 5,7 | 5,1 | 7,3 | 9,7 | 13,0 |
| | Belgium | 4,4 | 5,2 | 3,0 | 4,1 | 7,4 | 9,4 |
| | Luxembourg | 5,7 | 7,0 | 6,0 | 10,8 | 11,7 | 17,8 |
| | France | 3,8 | 6,1 | 3,0 | 5,8 | 6,7 | 11,9 |
| | United Kingdom | 6,1 | 7,2 | 7,1 | 10,9 | 13,2 | 18,1 |
| | Ireland | 8,2 | 11,3 | 3,7 | 6,5 | 11,8 | 17,8 |
| | Italy | 8,2 | 11,3 | 3,7 | 6,5 | 11,8 | 17,8 |
| | Greece | 4,5 | 5,7 | 3,4 | 5,3 | 7,9 | 10,9 |
| | Spain | 7,6 | 10,1 | 6,2 | 8,1 | 13,9 | 18,2 |
| | Portugal | 3,8 | 7,2 | 4,4 | 8,1 | 8,2 | 15,3 |

NOTES

¹ Agriculture, Industry (including Construction) and Services.

² See box for an explanation of the method used.

³ A more detailed description of the methodology employed can be found in Cuadrado et al.2000.

⁴ Specifically that which also considers external mobility, which is the most complete.

⁵ As this is an expansive period, we have opted for the use of indicators of total labour mobility which exclude external movements.

⁶ With external movements. In any case, the breakdown has also been carried out on the indicators of total mobility which exclude this type of gross flow and the results obtained were similar. Agriculture, Industry (including Construction) and Services.