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# ABSTRACT

## Equalizing or Disequalizing Lifetime Earnings Differentials? Earnings Mobility in the EU: 1994-2001

Do EU citizens have an increased opportunity to improve their position in the distribution of lifetime earnings? To what extent does earnings mobility work to equalize/disequalize longer-term earnings relative to cross-sectional inequality and how does it differ across the EU? Our basic assumption is that mobility measured over a horizon of 8 years is a good proxy for lifetime mobility. We used the Shorrocks (1978) and the Fields (2008) index. Moreover, we explored the impact of differentials attrition on the two indices. The Fields index is affected to a larger extent by differential attrition than the Shorrocks index, but the overall conclusions are not altered. Based on the Shorrocks (1978) index men across EU have an increasing mobility in the distribution of lifetime earnings as they advance in their career. Based on the Fields index (2008) the equalizing impact of mobility increases over the lifetime in all countries, except Portugal, where it turns negative for long horizons. Thus, Portugal is the only country where mobility acts as a disequalizer of lifetime differentials. The highest lifetime mobility is recorded in Denmark, followed by UK, Belgium, Greece, Ireland, Netherlands, Italy, France, Spain, Germany, and the lowest, Portugal. The highest mobility as equalizer of longer term inequality is recorded in Ireland and Denmark, followed by France and Belgium with similar values, then UK, Greece, Netherlands, Germany, Spain and Italy.

JEL Classification: C23, D31, J31, J60

Keywords: panel data, wage distribution, inequality, mobility

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## 1. INTRODUCTION

Do EU citizens have an increased opportunity to improve their position in the distribution of lifetime earnings? To what extent does earnings mobility work to equalize/disequalize longer-term earnings relative to cross-sectional inequality and how does it differ across the EU?

These questions are relevant in the context of the EU labour market policy changes that took place after 1995 under the incidence of the 1994 OECD Jobs Strategy, which recommended policies to increase wage flexibility, lower non-wage labour costs and allow relative wages to reflect better individual differences in productivity and local labour market conditions. (OECD, 2004) Following these reforms, the labour market performance improved in some countries and deteriorated in others, with heterogeneous consequences for cross-sectional earnings inequality and earnings mobility. Averaged across the OECD, however, gross earnings inequality increased after 1994. (OECD, 2006)

To explore the possible lifetime inequality consequences of these labour market changes, one has to expand the typical cross-sectional view usually taken in cross-national comparisons of earnings distribution because a simple cross-sectional picture of earnings inequality is inadequate in capturing the true degree of inequality faced by individuals during their lifetime. The welfare implications of any labour market changes should to be analysed in a lifetime perspective because lifetime earnings reflect to a larger extent the differences in the opportunities faced by individuals.

The lifetime approach faces a huge impediment: the scarcity of lifetime earnings. This motivated the study of economic mobility, viewed as the link between short and long-term earnings differentials: a cross-sectional snapshot of income distribution overstates lifetime inequality to a degree that depends on the degree of earnings mobility. (Lillard, 1977; Atkinson, Bourguignon, and Morrisson, 1992; Creedy, 1998) If countries have different earnings mobility levels, then single-year inequality country rankings may lead to a misleading picture of long-term inequality ranking. To support this statement, Creedy (1998), conducted a simulation study to examine the relationship between cross-sectional and lifetime income distributions. His conclusion was that simple inferences about lifetime income distributions cannot be made on the basis of cross-sectional distributions alone, dismissing the conclusions drawn by the OECD (1996) report.

Some people argue that rising annual inequality does not necessarily have negative implications. This statement relies on the "offsetting mobility" argument, which states that if there has been a sufficiently large simultaneous increase in mobility, the inequality of income measured over a longer period of time, such as lifetime income or permanent income - can be lower despite the rise in annual inequality, with a positive impact on social welfare. This statement, however, holds only under the assumption that individuals are not averse to income variability, future risk or multi-period inequality. (Creedy and Wilhelm, 2002; Gottschalk and Spolaore, 2002) Therefore, there is not a complete agreement in the literature on the value judgement of income mobility. (Atkinson et al., 1992)

Those that value income mobility positively perceive it in two ways: as a goal in its own right or as an instrument to another end. The goal of having a mobile society is linked to the goal of securing equality of opportunity in the labour market and of having a more flexible and efficient economy. (Friedman, 1962; Atkinson et al., 1992) The instrumental justification for mobility takes place in the context of achieving distributional equity: lifetime equity depends on the extent of movement up and down the earnings distribution over the lifetime. (Atkinson et al., 1992) In this line of thought, Friedman (1962) underlined the role of social mobility in reducing lifetime earnings differentials between individuals, by allowing them to change their position in the income distribution over time.

Thus earnings mobility is perceived in the literature as a way out of poverty. In the absence of mobility the same individuals remain stuck at the bottom of the earnings distribution, hence annual earnings differentials are transformed into lifetime differentials.

Using ECHP over the period 1994-2001, we explore earnings mobility across 14 EU countries to identify whether mobility operates as an equalizer or disequalizer of lifetime earnings differentials, a question much neglected at the EU level. Our paper contributes to the existing literature in three ways. First, by exploring a different facet of mobility – as an equalizer or disequalizer of lifetime earnings differentials -, we complement Sologon and O'Donoghue (2009) findings on the evolution of earnings mobility over time across the EU, thus filling part of the gap in the study of earnings mobility at the EU level. Second, we apply a new class of measures of mobility as an equalizer of longer-term incomes - developed by Fields (2008) – in comparison to the well-known measure developed by Shorrocks (1978).

Third, unlike previous studies that rely on a fully balanced sample to explore mobility (only those individuals that record positive earnings independent of the sub-period), we extend the analysis by including the results for the unbalanced sample over different sub-periods. By doing so, we want to explore mobility as equalizer of longer term incomes not only for the people that remain employed over the entire sample period, but also for those that move into and out of employment. Focusing only on the fully balanced sample might bias the estimation of mobility due to the overestimation of earnings persistency. Moreover, besides the employment status, there are other factors determining panel attrition. All in all, this exercise provides is an interesting check of the impact of differential attrition on the study of earnings mobility as equalizer of longer term differentials using the Shorrock and the Fields index.

## 2. LITERATURE REVIEW

The concept of mobility as an equalizer of longer term income is an old one, complementing mobility-as-time-independence, positional movement, share movement, non-directional income movement, and directional income movement. (Fields, 2008) The number of comparative studies on earnings mobility as a source of equalization of longer term income is limited because of the lack of sufficiently long comparable panel cross-country data. To investigate the link between longitudinal earnings mobility and the reduction in long-term earnings inequality most studies used the Shorrocks index (Shorrocks, 1978). One of the main critiques regarding this index is that it treats equalizing and disequalizing changes in essentially identical fashion. (Benabou and Ok, 2001; Fields, 2008)

Most of the existing studies focus on the comparison between the US and a small number of European countries. OECD (1996, 1997) presented a variety of comparisons of earnings inequality and mobility across the OECD countries over the period 1986-1991. They included also the Shorrocks mobility index and concluded that the results vary depending on the inequality index used for computing the Shorrocks index. This sensitivity was investigated more in depth by Jarvis and Jenkins (1998), which concluded that measures focusing on the tails of the distribution (e.g. Theil) shows greater mobility compared with the situation when more weight is given to the middle of the distribution (e.g. Gini).

Burkhauser and Poupore (1997) using GSOEP between 1983 and 1988 compared long-term inequality in Germany and the US. To evaluate the extent to which mobility reduces longer term differentials, they used the Shorrocks(1978) index based on the Theil index. Their findings identified a higher mobility in Germany than in the US for all time periods.

Aaberge, Bjorklund, Jantti, Palme, Pedersen, Smith, and Wannemo (2002) compared income (family income, disposable income and earnings) inequality and mobility in the Scandinavian countries and the United Stated during 1980-1990. They used the Shorrocks (1978) index based on the Gini index and found low mobility levels for all countries, with higher values for the US only for long accounting periods. Despite the higher mobility, independent of the accounting period, they found that earnings inequality is higher in the US than in the Scandinavian countries.

Hofer and Weber (2002) looked at mobility in Austria between 1986-1991 using among other indices also the Shorrocks index calculated using the Gini, the Theil and Mean log deviation index. They compared their results with the OECD (1996, 1997). In Austria they found a weak equalization effect of long-term mobility over the selected period compared with Denmark, France, Germany, Italy, the UK and the US. Moreover they underlined that "except the Austrian case, country rankings in this panel depends on the chosen inequality index and there emerges no clear picture which countries are the most mobile or the most immobile".

Gregg and Vittori (2008), starting from the approach proposed by Schluter and Trede (2003) developed a continuous alternative measure of "Shorrocks" mobility which first, allows to identify mobility over different parts of the earnings distribution and second, to distinguish between mobility that tends to reduce or increase the level of permanent or long-term inequality. They focused on ECHP data on annual earnings for four countries - Denmark, Germany, Spain and the UK. Mobility was found to equalize long-term differentials. Denmark had the highest mobility, steaming mainly from the middle and top parts of the distribution, whereas the lowest was found in Germany.

Most recently, Fields (2008) developed a new index to explore mobility as an equalizer of longer term income, which unlike Shorrocks index, is able to identify whether longitudinal mobility is equalizing or disequalizing long-term earnings differentials. The results for the United States and France showed that the new index picks up different trends compared with the Shorrocks index.

Income mobility was found to equalize longer-term incomes among U.S. men in the 1970s but not in the 1980s and 1990s. In France, income mobility has been equalizing since the late 1960s, with a higher degree of equalization in more recent years.

At the EU level, no study explored in a comparative setting earnings mobility as an equalizer of longer-term inequality using a panel longer than six years. Moreover, except for the short exercise in Fields (2008), The Fields index, has not been applied to another Europoean country or in a comparative setting at the EU level. We argue that the Fields and the Shorrocks indices provide complementary pieces of information regarding the link between longitudinal mobility and long-term earnings differentials. By exploiting the 8 years of panel in ECHP, and coupling the information provided by the two indices, our paper aims to fill part of that gap and to make a substantive contribution to the literature on cross-national comparisons of longitudinal mobility at the EU level. Moreover, the balanced and unbalanced approach allows identifying the impact of differential attrition on measuring long-term mobility and also which of the two indices is the most sensitive.

## 3. METHODOLOGY

It is recognized in the literature that a snapshot of the distribution exaggerates the true degree of inequality to a degree that depends on the mobility of earnings. (Atkinson et al., 1992) The core question that arises is whether low pay is persistent, meaning that the same people are stuck at the bottom of the income distribution, or there is a transitory component, meaning that people change their position in the income distribution over time. To answer this question, we focus on a balanced panel for all countries over the sample period. This will be referred to as the "balanced" approach.

To check for the impact of differentials attrition, we consider also unbalanced panels across different sub-periods. For example, the mobility index for 1994-1998 is based on individuals with positive earnings in each year between 1994 and 1998, whereas the mobility index for 1994-2001 uses the balanced sample between 1994 and 2001. This will be referred to as the "unbalanced" approach.

### 3.1.Shorrocks

As noted also by Pen (1971), for a thorough understanding of the personal income distribution it is necessary to have an insight into the vertical mobility. One way to create a bridge between vertical mobility and personal income distribution is to measure the extent of mobility in terms of the proportion to which it reduces lifetime earnings inequality compared with annual inequality. (Atkinson et al., 1992) For this purpose, Shorrocks (1978) proposes the following indicator[1]:

$$0 \le R_T = \frac{I(\sum_{t=1}^{T} y_{it})}{\sum_{t=1}^{T} w_t I(y_{it})} \le 1 \qquad (1)$$

where $y_{it}$ represents individual annual earnings, $t$ time $t = 1, \dots, T$, $I$ is an inequality index that is a strictly convex function of incomes relative to the mean[2], $I(\sum_{t=1}^{T} y_{it})$ the inequality of lifetime income, $w_t$ the share of earnings in year t of the total earnings over a T year period and $I(y_{it})$ the cross-sectional annual inequality. $R_T$ ranges from 0 (perfect mobility) to 1 (complete rigidity).[3] There is complete income rigidity if lifetime inequality is equal to the weighted sum of individual period income inequalities, meaning that everybody holds their position in the income distribution from period to period. Perfect mobility is achieved when everybody has the same average lifetime income, meaning that there is a complete reversal of positions in the income distribution. The degree of mobility can be computed as follows:

$$M_T = 1 - R_T$$

Under Shorrocks (1978)'s definition, mobility is regarded as the degree to which equalisation occurs as the observation period is extended. This definition is very important from an economic point of view because it provides a way of identifying those countries that exhibit a high annual income inequality, but fares better when a longer period of time is considered. If a country A has both greater annual inequality and greater rigidity than country B, it will be more unequal than B

[1] The formula applies for a cohort of constant size.
[2] This is the condition that must be fulfilled by the inequality index for the inequality (Atkinson et al., 1992) to hold.
[3] To compute this index only individuals that are present in all years are considered.

whatever period is chosen for comparison. But if A exhibits more mobility, this may be sufficient to change the rankings when longer periods are considered. (Shorrocks, 1978).

Because our data only covers eight years, the full equalising effect of mobility over the working lifetime is not captured. Some conclusions, however, can be drawn based on a horizon of 8 years.

The measures of earnings mobility are closely related to the importance of the permanent and transitory components of earnings. Following the terminology introduced by Friedman and Kuznets (1954), individual earnings are composed of a permanent and a transitory component, assumed to be independent of each other. The permanent component of earnings reflects personal characteristics, education, training and other systematic elements. The transitory component captures the chance and other factors influencing earnings in a particular period and is expected to average out over time. Following the structure of individual earnings, overall inequality at any point in time is composed from inequality in the transitory component and inequality in the permanent component of earnings. The evolution of the overall earnings inequality is determined by the cumulative changes in the two inequality components.

An increase in the cross-sectional earnings inequality could reflect a rise in the permanent and/or transitory component of earnings inequality. The rise in the inequality in the permanent component of earnings may be consistent with increasing returns to education, on-the-job training and other persistent abilities that are among the main determinants of the permanent component of earnings. (Mincer, 1957, 1958, 1962, 1974; Hause, 1980). The increase in the inequality in the transitory component of earnings may be attributed to the weakening of the labour market institutions (e.g. unions, government wage regulation, internal labour markets) which increases earnings exposion to shocks. Overall, the increase in the return to persistent skills is expected to have a much larger impact on long-run earnings inequality than an increase in the transitory component of earnings. (Katz and Autor, 1999)

In order to make inferences concerning the sources of mobility, meaning whether income changes were determined by large variations in transitory earnings and small variations in permanent earnings or vice-versa, we construct the stability profile or the rigidity curve, which plots the rigidity measure $R_T$ against different time horizons. A mobile earnings structure is represented by a stability profile that declines with time away from the immobility horizontal line, where $R_T = 1$. If incomes changes are purely due to transitory effects, relative incomes will

rapidly approach their permanent values and there will then be no substantial further equalisation. The stability profile will therefore tend to become horizontal after the first few years. If income changes are due to more mobility in permanent incomes, the stability profile will continue to decline as the aggregation period is extended. (Shorrocks, 1978)

### 3.2.Fields

To recall, Shorrocks (1978) conceptualized income mobility as the opposite of income rigidity. As highlighted by Benabou and Ok (2001) and Fields (2008), the main limitation of this measure was that it does not quantify the direction and the extent of the difference between inequality of longer-term income and inequality of base year income, meaning that it treats equalizing and disequalizing changes in essentially identical fashion. Fields (2008) explained with the following example, which uses Gini as the inequality index. The mobility index, $M_T$, for a "Gates-gains" mobility process (100, 200, 20000) → (100, 200, 30000) equals $4.99 \cdot 10^{-5}$, $5.91\ 10^{-5}$ for a "Gates-loses" mobility process and 0 for "no change". The ranking in mobility is "Gates-loses", "Gates-gains" and "no change", but neither the sign nor the relative magnitude of $M_T$ conveys any information whether mobility is equalizing or disequalizing in a lifetime perspective.

Fields (2008) developed a mobility measure which circumvents this limitations, capturing mobility as an equalizer/disequalizer of longer-tern incomes:

$$\varepsilon = 1 - \frac{I(a)}{I(yl)} \qquad (2),$$

where $a$ a is the vector of average incomes, $yl$ is the vector of base-year incomes, and I(.) is a Lorentz-consistent inequality measure such as the Gini coefficient or the Theil index. A positive/negative value of $\varepsilon$ indicate that average incomes, $a$, are more/less equally distributed than the base-year incomes, $yl$, and a 0 value that $a$ and $yl$ are distributed equally unequally.

Applying this measure to the hypothetical situations introduced above, results in a value of $-3.9 \cdot 10^{-3}$ for the "Gates-gains" and of $+6.6 \cdot 10^{-3}$ for the "Gates-loses", suggesting that the "Gates-loses" process is equalizing and "Gates-gains" is disequalizing. (Fields, 2008) For a complete description of the properties of the Fields index please refer to Fields (2008).

By applying these two indices, we first assess the degree of long-term earnings mobility across 14 EU countries, and second we establish whether this mobility is equalizing or disequalizing long-term earnings differentials. We chose to work with the mobility index based on the Theil index, but the other indices can be provided upon request from the authors.

## 4. DATA

The study uses the European Community Household Panel (ECHP)[4] over the period 1994-2001 for 14 EU countries. Not all countries are present for all waves. Luxembourg and Austria are observed over a period of 7 waves (1995-2001) and Finland over a period of 6 waves (1996-2001). Following the tradition of previous studies, the analysis focuses only on men.

A special problem with panel data is that of attrition over time, as individuals are lost at successive dates causing the panel to decline in size and raising the problem of representativeness. Several papers analysed the extent and the determinants of panel attrition in ECHP. A. Behr, E. Bellgardt, U. Rendtel (2005) found that the extent and the determinants of panel attrition vary between countries and across waves within one country, but these differences do not bias the analysis of income or the ranking of the national results. L.Ayala, C. Navrro, M.Sastre (2006) assessed the effects of panel attrition on income mobility comparisons for some EU countries from ECHP. The results show that ECHP attrition is characterized by a certain degree of selectivity, but only affecting some variables and some countries. Moreover, the income mobility indicators show certain sensitivity to the weighting system.

In this paper, the weighting system applied to correct for the attrition bias is the one recommended by Eurostat, namely using the "base weights" of the last wave observed for each individual, bounded between 0.25 and 10. The dataset is scaled up to a multiplicative constant[5] of the base weights of the last year observed for each individual.

For this study we use real net[6] hourly wage adjusted for CPI of male workers aged 20 to 57, born between 1940 and 1981. Only observations with hourly wage lower than 50 Euros and higher

[4] The European Community Household Panel provided by Eurostat via the Department of Applied Economics at the Université Libre de Bruxelles.

[5] The multiplicative constant equals p*(Population above 16/Sample Population). The ratio p varies across countries so that sensible samples are obtained. It ranges between 0.001-0.01.

[6] Except for France, where wage is in gross amounts

than 1 Euro were considered in the analysis. The resulting sample for each country is an unbalanced panel. Details on the number of observations, inflows and outflows of the sample by cohort over time for each country are provided in Table 1.

## 5. CHANGES IN EARNINGS INEQUALITY

Before exploring earnings mobility at the EU level, as a first step we describe the evolution of the earnings distribution both over time and across different time horizons.

### 5.1.Changes in the cross-section earnings distribution over time

This section presents the changing shape of the cross-sectional distribution of earnings for men over time. Figure 1 illustrates the frequency density estimates for the first wave[7], 1998 and 2001 earnings distributions and Table 2 illustrates the evolution of the other moments of the earnings distribution over time. The evolution of mean net hourly wage shows that men in most countries got richer over time, except for Austria. Net hourly earnings became more dispersed in most countries, except Austria, France and Denmark.

Plotting the percentage change in mean hourly earnings between the beginning of the sample period and 2001 at each point of the distribution for each country (Figure 2), revealed that, in most countries, the relationship between the quantile[8] rank and the growth in real earnings is negative and nearly monotonic: the higher the rank, the smaller the increase in earnings. This shows that in most countries, over time, the situation of the low paid people improved to a larger extent than for the better off ones. In Austria, people at the top of the distribution experienced a decrease in mean hourly wage over time, which might explain the decrease in the overall mean.

Netherlands, Germany, Greece and Finland diverge in their pattern from the other EU countries experiencing a higher relative increase in earnings the higher the rank. Netherlands is the only country where men at the bottom of the income distribution recorded a deterioration of their work pay. For these countries, the increase in the overall mean might be the result of an increase in the earnings position of the better off individuals, not the low paid ones.

[7] For Luxembourg and Austria, the first wave was recorded in 1995, whereas for Finland in 1996.
[8] 100 Quantiles

To complete the descriptive picture of the cross-sectional earnings distribution over time, we provide also inequality measures. Inequality indices differ with respect to their sensitivity to income differences in different parts of the distribution. Therefore they illustrate different sides of the earnings distribution. The year-to-year changes in earnings inequality are captured by computing the ratio between the mean earnings in the 9th decile and the 1st decile (Figure 3), the Gini index, the GE indices - the Theil Index (GE(1)) -, and the Atkinson inequality index evaluated at an the aversion parameter equal to 1 (Table 3).[9]

The ratio between the mean earnings in the 9th decile and the 1st deciles focuses only on the two ends of the distribution. The Gini index is most sensitive to income differences in the middle of the distribution (more precisely, the mode). The GE with a negative parameter is sensitive to income differences at the bottom of the distribution and the sensitivity increases the more negative the parameter is. The GE with a positive parameter is sensitive to income differences at the top of the distribution and it becomes more sensitive the more positive the parameter is. For the Atkinson inequality indices, the more positive the "inequality aversion parameter" is, the more sensitive the index is to income differences at the bottom of the distribution.

The level and pattern of inequality over time as measured by the ratio between the mean earnings in the 9th decile and the 1st decile differs to a large extent between the EU14 countries. Two clusters can be identified. The first one is comprised of Netherlands, Begium, Italy, Finland, Austria and Denmark and is characterized by a small relative distance between the bottom and top of the distribution. The other cluster identifies countries with a higher level of inequality, with ratios between 2.75 and 4.

In 1994, based on the Gini index, Portugal is the most unequal, followed by Spain, France, Ireland, UK, Greece, Germany, Italy, Belgium, Netherlands and Denmark. In general, the other two indices confirm this ranking. However, using the Theil index, France appears to be more unequal than Spain, whereas using the Atkinson index, Ireland appears to be more unequal than France and as equal as Spain.

[9] Besides these indices, several others were computed (GE(-1); GE(0), GE(2), Atkinson evaluated at different values of the aversion parameter) and can be provided upon request from the authors. They support the findings shown by the reported indices.

In 2001, based on the Gini index, Portugal is still the most unequal, followed by France, Greece, Luxembourg, Spain, UK, Germany, Ireland, Netherlands, Italy, Finland, Belgium, Austria and Denmark. In general, the other two indices confirm this ranking. Based on Theil, however, Greece is more unequal than France, and Spain than Luxembourg. Based on Atkinson, Luxembourg is more unequal than Greece.

For most countries, all indices show a consistent story regarding the evolution of inequality over the sample period, except for Germany, France and Portugal, where the evolution of the Gini, Theil and Atkinson index is opposite to the one observed for the D9/D1. Based on Gini, Theil and Atkinson, Netherlands, Greece, Finland, Portugal, Luxembourg, Italy and Germany recorded an increase in yearly inequality, and the rest a decrease. The trends for Denmark, UK, Spain and Germany are consistent with Gregg and Vittori (2008).

The relative evolution over the sample period is captured in Figure 4, which illustrates for each country, the change in inequality as measured by Gini, Theil, Atkinson index and the D9/D1. Based on Gini, the highest increase in inequality was recorded by Netherlands (around 15%), followed by Greece, Finland, Portugal, Luxembourg, Italy and Germany. The highest decrease was recorded in Ireland (around 20%), followed by Austria, Denmark, Belgium, Spain, France and UK. Based on the Theil index, Portugal records a higher increase than Finland, Italy a higher increase than Luxembourg and Spain a higher decrease than Belgium. Based on Atkinson index, Portugal records a higher increase than Finland, and UK a higher decrease than France.

For Netherlands, Finland and Greece the increase in the distance between the top and bottom of the distribution and in the overall level of inequality can be explained by the improved earnings position of the better off individuals. Hence in these countries, the economic growth benefitted the high income people and leaded to an increase in earnings inequality.

Luxembourg and Italy recorded an increase in inequality based on all indices, but the situation at the bottom improved to a larger extent than for the top. Thus the increase in inequality might be the result of other forces affecting the distribution, such as mobility in the bottom and top deciles.

For France, the relative distance between the top and the bottom 10% appears to increase over time, in spite of a higher relative increase in mean earnings at the bottom of the distribution compared with the top. This discrepancy could be explained by the presence of earnings mobility

in the bottom and top 10% of the earnings distribution. The improved conditions for people in the bottom of the distributions could explain the decrease in earnings inequality as displayed by the other three indices.

Germany records opposite trends from France: the situation of the better off individuals improved to a larger extent than for low paid ones, which explains the increase in the overall inequality as captured by the Gini, Theil and Atkinson indices. The evolution of the ratio between mean earnings at the top and the bottom deciles is opposite to what was expected: the decrease might suggest that there are other forces at work, such as mobility in the top part of the distribution, which determined mean earnings to decrease for this group.

Portugal records similar trends with Germany, except for the negative correlation between the rank in the earnings distribution and the growth in earnings. Thus, the fact that low paid individuals improved their earnings position to a higher extent relative to high paid individuals, lowering the distance between the bottom and the top deciles of the earnings distribution did not have the expected effect of lowering overall earnings inequality as measured by the Gini, Theil and Atkinson indices. Mobility is expected to be the factor counteracting all these movements.

For the rest of the countries, the increase in the overall mean, coupled with the higher relative increase in the earnings position of the low paid individuals compared with high earnings individuals can be an explanation for their decrease in inequality.

Besides the direction of evolution, also the magnitude of the change records differences among inequality indices. In general, the magnitude of the change is the highest for the index that is most sensitive to the income differences at the top of the distribution, followed by bottom and middle sensitive one, sign that most of the major changes happened at the top and the bottom of the distribution. There are a few exceptions. In UK, Spain, Belgium and Denmark the magnitude of the evolution is the highest for the bottom sensitive one, followed by the top and middle ones.

### 5.2. Changes in the earnings distribution over the lifecycle: short versus long-term income inequality

Finally we complete the earnings distribution picture with the evolution of earnings inequality when we extend the horizon over which inequality is measured. We consider both the balanced

and the unbalanced approach. We report only the results for the Theil index. The results on the other inequality indices can be provided upon request from the authors.

Table 4 and Table 5 illustrate the evolution of inequality at different time horizons for all EU14 countries using a balanced and unbalanced sample. Inequality measures based on the unbalanced approach are higher than those based on the balanced approach. This is not surprising given that people which work over the entire sample are expected to have more stable jobs, and thus lower earnings differentials as opposed to the case when we include also those with instable jobs.

As expected, as time horizon increases, inequality reduces in all countries, except Portugal under the balanced approach.[10] The rate of change in inequality as the time horizon increases differs across countries. As proof, Figure 5 (Panel A - balanced approach and Panel B – unbalanced approach) shows the short and long-term earnings inequality (left) and their relative difference (right). Short–term refers to inequality in average earnings measured over two years, meaning in the first and the second wave, and long-term refers to inequality in average earnings measured over the sample period.

The ranking in inequality when the horizon is extended from one to two years is roughly maintained and this is consistent across both approaches. Short-term Denmark is the least unequal and Portugal the most unequal. A difference in short-term ranking between the two approaches is observed for Greece, which is more unequal than Denmark, Finland, Austria, Belgium, Netherland, Italy, Germany, UK, and Luxembourg in the balanced approach and more unequal than the former 7 countries in the unbalanced approach. Similarly, Spain is less unequal than Ireland and Portugal under the balanced approach, and less unequal than Portugal under the unbalanced approach. Thus short-term differential attrition affects Greece and Spain the most. More shuffling occurs as the horizon is extended to the sample period.

The relative difference between short and long-term inequality displayed in Figure 5 (right) provide a first clue regarding the degree to which each country manages to reduce long-term earnings differentials compared with short-term ones. If inequality measured over the whole sample period can be considered as a proxy for lifetime earnings inequality or inequality in the permanent component of earnings, the rate of decrease with the time horizon can be interpreted as a reduction in the transitory earnings inequality over the lifetime or the fading off of the

[10] This trend is confirmed by all four inequality indices, for all countries.

transitory component of earnings. Some countries manage to reduce inequality over the lifetime at a higher extent than others.

Based on the balanced approach (Figure 5 – Panel A) Ireland and Denmark display the highest reduction in long-term earnings inequality as the time horizon increases (over 30%), followed by Austria (over 15%), France and UK (over 10%), and the rest below 9%. Portugal is the only one recoding an increase in long-term inequality relative to short-term (over 6%). Based on these trends, we expect Ireland and Denmark to have the highest equalizing mobility over the lifecycle, Italy and Spain the lowest, and Portugal to have a disequalizing mobility.

The relative difference between long-term and short-run inequality is lower in the balanced (Figure 5 – Panel A) compared with the unbalanced approach (Figure 5 – Panel B), showing that differential attrition affects all countries. The explanation is that looking only at people that work over the entire sample period might overestimate the degree of earnings persistency and underestimate the degree of earnings instability.

Comparing between the two approaches, the most drastic difference is observed for Portugal, where also the direction of change differs, indicating an increase in long-term differentials relative to short-term ones. Also the ranking in the relative changes differs under the two approaches. Under the unbalanced approach, Portugal still records the lowest rank, and Ireland, Denmark and Austria the highest. For the rest the ranks are shuffled. UK, Luxembourg and Spain jump towards higher positions, after Ireland, Denmark and Austria. The rest lower their rank. Thus except for the extremes, differential attrition plays a significant role in country ranking with respect to the degree to which earnings differentials are reduced with the time horizon.

The countries with the highest reduction in long-term inequality relative to short-term inequality (over 20%) in the unbalanced approach (Figure 5 – Panel B) are observed to be also the ones which record a decrease in inequality[11] over time, except Luxembourg. Hence, on the one hand one might expect that the reduction in the transitory earnings inequality is one of the factors determining the decrease in the overall inequality over time. This might indicate the presence of a shock in the beginning of the sample period that influenced the temporary component of earnings and whose impact faded off over time. One the other hand, it might indicate that people

[11] as measured by Gini, Theil and Atkinson

became more mobile, improved their income position in the long run and reduced permanent income differentials. The outcome depends mainly on the evolution of mobility over time.

Under the balanced approach, the situation is confirmed for the countries with decreasing cross-sectional inequality, except for Spain and Belgium, which record among the smallest decreases in long-term inequality relative to short-term inequality. Thus among the countries with decreasing cross-sectional inequality, based on the differences between the balanced and the unbalanced approach, Spain and Belgium appear to be the most affected by differential attrition.

Based on the balanced approach, for countries that recorded an increase in the overall inequality over the sample period, the small decrease in inequality with the time horizon, signals the presence of strong permanent earnings differences between individuals or the existence of some shocks with permanent effects, whose inequality is accentuated by the inequality in the transitory component of earnings. Moreover, the magnitude of the transitory component of earnings is expected to be lower for these countries. Except for Luxembourg which records a high decrease in inequality with the time horizon, the unbalanced approach reveals a similar picture.

Under the unbalanced approach, in Luxembourg, the increase in the overall inequality over the sample period coupled with the high decrease in inequality with the time horizon signals the presence of some transitory shocks, which fade away in the long run. The difference in the two approached indicate that the attrition incidence is higher in Luxembourg compared with the other countries where cross-sectional inequality increased.

To conclude, even based on average earnings over the whole sample period, a substantial inequality in the permanent component of earnings is still present in all countries under analysis. The lowest long-term inequality, meaning the lowest inequality in permanent earnings, is recorded in Denmark, followed by Finland, Austria, Belgium and Netherlands with similar values, then Italy, Germany, UK, Luxembourg, Greece, Ireland, France and Spain. Portugal differentiates itself with a particularly high long-term inequality compared with the other countries. (Figure 5)

## 6. THE MOBILITY PROFILE

What are the possible implications in a lifetime perspective? To answer this question we need to couple the information on the evolution of inequality with earnings mobility. Is there any earnings mobility in a lifetime perspective, meaning are the relative income positions observed on an annual basis shuffled long-term? If yes, is mobility equalizing or disequalizing lifetime earnings differentials compared with annual earnings differentials? We report the mobility indices based on the Theil index. The ones based on the other inequality indices can be provided upon request from the authors.

### 6.1.Stability Profile - Shorrocks

To answer the first question we look at the stability profile, both under the balanced and the unbalanced approach, illustrated in Figure 6 and Figure 7. Both figures contain the same information, organized differently for the ease of the interpretation. To recall, the stability profile plots the Shorrocks rigidity index[12] across different time horizons. In Figure 6 and Figure 7 the time horizons are expressed in reference to the 1st wave for each country. The stability profile allows the visual identification of the presence of permanent and transitory earnings components.

All countries record similar trends: the rigidity declines monotonically as the time horizon is extended (Figure 6 and Figure 7). Moreover, the longer the time-horizon is, the more heterogeneous the stability profiles become. The story is confirmed by both approaches. As illustrated in Figure 6, the profiles under the two approaches evolve close to one another sign that the impact of attrition is limited. Some countries are affected to a larger extent by attrition than others. A larger impact is identified in Luxembourg, France, Ireland, Greece, Spain and Austria, which have a higher differentiation between the two profiles. For Luxembourg, Spain and Austria the rigidity index under the unbalanced approach is higher than in the balanced approach for horizons 1 to 4, suggesting that including also those individuals that move in and out of employment results in a higher degree of earnings rigidity. The opposite is observed in Ireland, Greece and France, suggesting that more income rigidity is observed among those that

[12] R is based in the Theil index. R based on other inequality can be provided upon request from the authors.

worked for the whole sample than including also those that moved in and out of paid work over the sample period.

Based on the stability profiles in Figure 6 and Figure 7, we make inferences concerning the source of mobility in each country. Based on the overall pattern of the profiles, we identify two country clusters, confirmed under both approaches, illustrated in Figure 7. Overall, the stability profiles on the right side of Figure 7 are steeper than on the left side, suggesting that income changes in Denmark, Finland, Austria, UK, Belgium, Greece, Ireland and Netherlands are due to transitory effects to a larger extent than in the other countries. Hence we can expect a higher lifetime mobility in the former.

Among the countries with less steep profiles, we identify countries where the profile (both the balanced and the unbalanced one) drops sharply in the beginning and then tends to become horizontal after a few years, suggesting that the income changes are purely due to transitory effects which average out over time. (Figure 6) Thus relative incomes approach rapidly their permanent values and there is no further equalization. It is the case of France. A similar trend (consistent across the two approaches) is observed in Portugal, except the last drop in the 8-year period rigidity[13] which signals the presence of mobility in the permanent earnings for horizons equal and longer than 8 years. (Figure 6)

In Germany and Spain, the "balanced" and the "unbalanced" profiles communicate a consistent story for the rigidity over a horizon shorter than 3-4 years and a slightly different picture for longer horizons. (Figure 6) For a horizon shorter than 4 years the two profiles both record a sharp decreasing slope, signalling income changes due to transitory effects. Spain has a sharper decrease, suggesting more transitory changes than Germany for horizons shorter or equal to 4 years. For a horizon longer than 4 years, the two profiles communicate a slightly different picture. In Germany the unbalanced profile becomes flat between the 4 and 5-year period mobility, suggesting that the income changes are due to transitory effects. Thereafter it decreases suggesting the presence of mobility in the permanent component at longer horizons. The same trend is observed in Spain, except that the flattening of the unbalanced profile occurs between a span of 4 to 5 years. The decrease observed in the unbalanced profiles at longer aggregation periods signals the presence of mobility in the permanent component.

[13] 8-year period rigidity = rigidity computed over a horizon of 8 years corresponding to the span wave(1)-wave(8)

Based on the balanced approach (Figure 6), in Germany and Spain, the profiles continue to decrease as the aggregation period is extended, suggesting more mobility in the permanent component than observed in the unbalanced approach. Thus considering also the people that move in and out of paid work over the sample period decreases the degree of mobility observed in the permanent component. This is expected, given that those that keep their jobs over the sample period are expected to be also the ones with higher opportunities of improving their relative position in the distribution of lifetime income.

As illustrated in Figure 6, the other two countries from the first cluster identified in Figure 7 (Luxembourg and Italy) record a sharp decrease over a horizon of two years, followed by curves which decrease at a decreasing rate, in a convergent trend towards a horizontal profile. Given that in Luxembourg and Italy the rigidity curve continues to decline as the aggregation period is extended, suggest that income changes in these countries are due to more mobility in permanent incomes. These trends are confirmed by both approaches.

The overall rank in the stability profiles between the countries with less steep profiles differs slightly based on the horizon and the approach. Under the balanced approach (Figure 7), Panel A), the stability profile is the highest in Portugal, followed by Germany, Luxembourg, Spain, Italy and France, except for a horizon longer than 4 years when the rigidity is higher in France than in Italy, and in Luxembourg than in Germany. Under the unbalanced approach (Figure 7), Panel B), the ranking in the stability profile is similar. Two exceptions are present: the rigidity is higher in Luxembourg than in Germany for all horizons, and in France than in Italy for a horizon longer than 5 year.

As illustrated in Figure 6, the countries with the steepest profiles – the right country cluster in Figure 7 – record a sharp decrease over a horizon of two years, followed by curves which continue to decline as the aggregation period is extended, suggesting that income changes in these countries are due to more mobility in permanent incomes. The curves under the balanced and unbalanced approach communicate a similar story in most countries. Some differences are observed for Belgium and Greece for longer horizons. In Belgium, a differentiation between the two profiles occurs between a 7 and 8-year horizon, when the unbalanced profile becomes horizontal, whereas the balanced one keeps declining. In Greece, the unbalanced profile becomes

horizontal between the 5 and 6-year horizon and decreases thereafter, whereas the balanced profile continues to decline with the horizon.

The overall rank in the rigidity profiles between the countries with the steepest profiles – right country cluster in Figure 7 - differs based on the horizon and the approach used to a larger extent compared with the countries with less steep profiles – left country cluster in Figure 7.

Under the balanced approach (Figure 7, Panel A), the steepest profile over a 2-year horizon is recorded in Austria and Greece, followed by a cluster with similar vales, then UK, Netherlands, and finally Ireland. Over a 3-year horizon the ranks are slightly shuffled: Austria, Denmark and Finland have the lowest rigidity, followed by a cluster formed of UK, Belgium, and Greece, then Ireland and Netherlands with similar values. After the 3-year horizon, the profile for Austria becomes less steep, crossing the profiles of Denmark and Finland, which record the lowest rigidity thereafter. At higher levels of rigidity we observe the profiles for Greece, UK and Belgium, which evolve together, followed by the profiles of Netherlands and Ireland.

The unbalanced approach (Figure 7, Panel A) reveals a higher differentiation between the profiles at shorter horizons and a higher degree of convergence at longer horizons. Over a 2-year horizon, the lowest rigidity is recorded in Greece, followed by a cluster formed of Finland, Denmark, Austria and Belgium, then UK, and finally Ireland and Netherlands with similar values. The profiles become more heterogenous at longer profiles. The lowest profile is observed in Denmark, followed by Finland, Austria, then a cluster formed by Greece, UK and Belgium, then Ireland and finally Netherlands. Over an 8-year horizon, Denmark stands out with the lowest rigidity, whereas a convergence is observed for the rest[14].

We conclude this section with an overview of the long-period Shorrocks mobility country ranking.

All these trends lead to a change in long-period mobility ranking as the horizon is extended. In the beginning of the sample period, under the balanced approach, over a horizon of 2 years, the lowest mobility is recorded in Portugal, followed by Germany, Luxembourg, Ireland, Spain, Italy, Netherlands, UK, France, Denmark, Finland, Belgium, Greece and Austria. Under the unbalanced approach, the ranking changes slightly: Portugal, Luxembourg, Germany, Spain,

[14] Except Austria and Finland.

Ireland, Netherlands, Italy, UK, Belgium, France, Austria, Denmark, Finland and Greece. The largest jumps in ranking are observed in Austria and Belgium. More shuffling occurs as the period over which mobility is measured is extended. (Table 6 and Table 7)

Following these changes, the ranking in long-term earnings Shorrocks mobility is revealed in Figure 8. Based on the balanced approach, the highest mobility over a horizon of 6 years is recorded in Denmark and Finland, followed by Austria, Belgium, UK, Greece, Ireland, Netherlands, Italy, France, Spain, Germany, Luxembourg and Portugal. Denmark and Finland record the lowest annual inequality, and Portugal the highest annual inequality. Thus we can expect, among the selected countries, Denmark and Finland to trigger the lowest lifetime inequality and Portugal the highest. The country ranking is confirmed by the unbalanced approach, except Netherlands which, under the unbalanced approach, has a lower mobility than Italy.

Based on the balanced approach, over a horizon of 7 years the ranking is in general preserved: Denmark and Austria record the highest mobility, and Portugal and Luxembourg the lowest. One exception is UK which scores a higher rank than Belgium. Austria has the 5$^{th}$ lowest annual inequality and Luxembourg the 9$^{th}$. Thus we expect Austria to reduce lifetime earnings differential compared with annual differentials to a higher extent than Portugal and Luxembourg, and to a lesser extent than Denmark. This results is consistent with Hofer and Weber (2002). Similarly, we expect Luxembourg to reduce lifetime differentials to a higher extent than Portugal and to a lesser extent than Denmark. The ranking is confirmed by the unbalanced approach, except for the UK which ranks lower than Belgium.

Finally, over an eight-year horizon[15], the ranking is in general preserved. The highest mobility is recorded in Denmark, followed by UK, Belgium, Greece, Ireland, Netherlands, Italy, France, Spain, Germany, and the lowest, Portugal. Therefore Denmark provides the highest opportunity of reducing lifetime earnings differentials and Portugal the lowest. The ranking between Denmark, UK, Spain and Germany is consistent with the one found by Gregg and Vittori (2008) using the Shorrocks index based on all indices considered, including Theil and Gini.

[15] The balanced and unbalanced approach are the same for the 8-year horizon because they use the same sample.

To sum up, all countries record an increase in earnings mobility when the horizon over which mobility is measured is extended. This shows that men do have an increasing mobility in the distribution of lifetime earnings as they advance in their career. This result is confirmed both by the balanced and the unbalanced approach. The differential attrition appears to have a limited impact on the stability profiles, but a higher impact on the country ranking which decreases with the horizon over which mobility is measured.

But is this mobility equalizing or disequalizing lifetime earnings differentials?

### 6.2.Mobility Profile – as equalizer on long-term earnings inequality

Next we introduce the mobility profile based on the Fields index, which unlike Shorrocks captures whether mobility is equalizing or disequalizing long-term differentials. (Figure 9 and Figure 10) Overall, mobility increases with the horizon for all countries, except Portugal. The evolution, however, is not monotonic for all countries. Except Portugal, all countries record positive values of mobility, showing that mobility is equalizing earnings differentials long-term. The story is confirmed by both approaches. For Portugal, mobility turns negative when measured over an 8-year horizon, showing that mobility is exacerbating long-term earning differentials. We conclude that all countries, except Portugal, manage to reduce earnings differentials in a lifetime perspective.

Comparing between Figure 9 and Figure 6 reveals that the Fields index is affected to a larger extent by differential attrition than the Shorrocks index: the differentiation between the mobility profile under the balanced approach and the one under the unbalanced approach is evident in all countries, in some more than in others. The largest differences between the two curves are observed in Netherlands, Luxembourg, Ireland, Greece, Portugal and Finland.

The mobility ratio for the balanced approach is higher than for the unbalanced approach in Netherlands, Luxembourg and Finland, suggesting that including also the people that moved into and out of employment and those that entered and exited the sample leads to higher levels of mobility as equalizer of long-term differentials. The reverse is observed in France, UK, Portugal and Ireland (except for the 7-year horizon). We tried to relate back to Table 1 to identify the possible driving factors in these results, but the patterns in the inflows and outflows in the data do not reveal any distinctive pattern.

For the rest the results are mixed. In Germany, Denmark, Greece and Austria, the mobility under the unbalanced approach is higher than under the balanced approach for shorter horizons and lower for longer horizons. In Spain the "unbalanced" mobility is lower until the 4-year horizon and similar with the "balanced" mobility thereafter. Possible explanations for the trends in the mobility profile in the two approaches can be found in Table 1. In Germany, Denmark, Greece and Austria, the "unbalanced" mobility becomes lower than the balanced one in 1998, 1998, 1998 and 1999 (Figure 9), which is the year when the attrition rates increase, and the share and the number of individuals with positive earnings in 1998 from those that were present in the sample in 1997 decrease compared with the previous years. For example, in Germany, 9.06% of the people who were in the sample in 1997 disappeared in 1998, which is almost twice the rate observed one year before (5.18%). From those that were present in the sample in 1997, only 63.01% record positive earnings in 1998, as compared to 66.2% in the previous year (Table 1)

Four clusters are identified in the evolution of long-term mobility profiles, confirmed both by the balanced and the unbalanced approach. (Figure 10) Independent of the horizon, Portugal and Italy have the lowest profiles, indicating that they have the lowest mobility as equalizer of long term differentials. The ranking for the other countries changes to a large extent for horizons up to 4 years. Looking after the $4^{th}$ horizon, three clusters are observed. The first cluster, with values higher than Portugal and Italy, is formed by Germany, Spain, Netherlands, Greece, Luxembourg and Finland. This is followed by a cluster formed by UK, Belgium, France and Austria. Finally, Denmark and Ireland stand out with respect to the steepness of their profiles and to the high level of their long-term mobility.

Some convergence trends emerge as the horizon over which mobility is measured increases. For a horizon of 7-8 years, mobility converges to similar values in Denmark and Ireland, in Belgium and France, in Spain and Germany, and in Luxembourg, Greece and Netherlands. (Figure 10)

We conclude this section with an overview of the country ranking in Fields mobility. Similar with the trend observed for the Shorrocks index, the country ranking changes with the horizon over which mobility is measured.

Based on the balanced approach, the 2-year mobility is the highest in Belgium, followed by Denmark, France, Greece, Austria, Luxembourg, UK, Finland, Spain, Ireland, Netherlands, Italy, Germany and Portugal. The unbalanced approach reveals a slightly different picture than the

balanced one, sign that the Fields index is more sensitive to differential attrition compared with the Shorrocks index where the rankings are similar between the two approaches. Belgium, Denmark, France, Greece, Austria still have the highest mobility, and Germany and Portugal the lowest. In between, in a descendent order we find Ireland, UK, Finland, Italy, Spain, Netherlands and Luxembourg.

Figure 11 displays the ranking in long-term Fields mobility. Based on the balanced approach (Panel A), over a horizon of 6 years, Denmark, Ireland and Austria record the highest mobility, followed by Belgium, France, UK, Finland, Luxembourg, Netherlands, Greece, Italy, Spain Germany and Portugal. Thus except for Portugal, the mobility picture over the 6-year horizon looks different from the one over the 2-year horizon. Based on the unbalanced approach (Panel B), Ireland has the highest mobility, followed by Denmark, Austria, France, Belgium, UK, Finland, Luxembourg, Italy, Spain, Netherlands, Greece, Germany and Portugal.

Over a 7-year horizon, the balanced approach reveals the same ranking as over a 6-year horizon for the first 6 countries and Portugal. In between, in a descending order, we find Netherlands, Greece, Luxembourg, Germany, Italy and Spain. Based on the unbalanced approach, the first 3 countries maintain the ranks from the balanced approach, followed by Belgium, France, UK, Netherlands, Greece and Luxembourg with similar values, then Germany, Italy, Spain and Portugal.

Finally, over a horizon of 8 years, the highest mobility is recorded in Ireland and Denmark, followed by France and Belgium with similar values, then UK, Greece, Netherlands, Germany, Spain, Italy, and Portugal with a negative value. Thus, assuming that the 8-year mobility is a good approximation of lifetime mobility, Ireland and Denmark have the highest equalizing mobility in a lifetime perspective, and Italy, Spain and Germany the lowest. Portugal is the only country where mobility acts as a disequalizer of lifetime differentials.

The overall information revealed by the two indices is summarized in Figure 12, Figure 13 and Table 10. Comparing the rankings in 6, 8, 7-year mobility between the Shorrocks and the Fields index the mobility pictures differ to a certain extent.

Based on the 8-year mobility (Figure 13 and Table 10), Portugal records the lowest values based on both indices. Lifetime mobility is present in Portugal, but is disequalizing, thus it does not benefit low earnings individuals.

Among the countries with the highest 5 values in lifetime Shorrocks mobility – Denmark, UK, Belgium, Greece, Ireland - only Denmark, Ireland, Belgium and UK score among the 5 highest in the Fields lifetime equalizing mobility, suggesting that these countries have the highest lifetime mobility with the highest equalizing impact on lifetime earnings differentials. Denmark scores the highest in lifetime mobility, but the second highest after Ireland in equalizing mobility, suggesting that mobility in Ireland is slightly more equalizing in a lifetime perspective than in Denmark. Compared with the other countries, Denmark has a higher lifetime mobility with a higher lifetime equalizing impact.

UK has a lower lifetime mobility and a lower equalizing impact than Denmark. Compared with Ireland, Belgium and France, UK has a higher lifetime mobility, but with a lower equalizing impact. A possible explanation is that UK has a higher share of lifetime mobility which is disequalizing than Ireland, Belgium and France. Compared with the remaining countries, UK has a higher lifetime mobility with a higher lifetime equalizing impact.

Belgium scores the third highest after Denmark and UK based on Shorrocks and the 4th highest after Ireland, Denmark, and France based on Fields. Thus Belgium has a lower lifetime mobility with a lower equalizing impact than Denmark, a higher lifetime mobility and a lower equalizing mobility than Ireland and France, and a lower lifetime mobility but with a higher equalizing impact than in UK. Compared with the remaining countries Belgium has a higher lifetime mobility with a higher lifetime equalizing impact.

Greece has a higher lifetime mobility with a higher equalizing impact than Netherlands, Italy, Germany, Spain and Portugal. Compared with Denmark, Belgium and UK, Greece has a lower lifetime mobility and a lower equalizing mobility. Compared with Ireland and France, Greece has a higher lifetime mobility and a lower equalizing impact, signalling that a lower part of the mobility in Greece is equalizing lifetime earnings differentials compared with Ireland and France.

Ireland has a higher lifetime mobility than Netherlands, Italy, France, Spain, Germany and Portugal, and a lower lifetime mobility than the other countries. In terms of equalizing impact, however, Ireland is the strongest.

Netherlands has a middle rank both in lifetime mobility and in lifetime equalizing mobility. It has a higher lifetime mobility and a higher equalizing impact than Germany, Spain, Italy and

Portugal. Compared to France it has a higher lifetime mobility, but a lower equalizing mobility, sign that a higher share of mobility is disequalizing in the Netherlands.

Italy has a lower lifetime mobility with a lower equalizing impact compared with most countries, except Portugal, for which the opposite holds, and Germany, Spain, and France, which have a lower lifetime mobility and a higher equalizing mobility.

France has a higher lifetime mobility and a higher equalizing mobility than Spain, Germany and Portugal, and a lower lifetime inequality coupled with a lower equalizing mobility than Denmark and Ireland. Compared with the rest, France has a lower lifetime inequality but with a higher equalizing impact.

Spain has a higher lifetime mobility with a higher equalizing impact than Portugal, a higher lifetime mobility and a lower equalizing mobility than Germany and the reverse compared with Italy. Compared with the remaining countries, Spain has a lower lifetime mobility with a lower equalizing impact.

Germany has a higher lifetime mobility with a higher equalizing impact than Portugal, a lower lifetime mobility and a higher equalizing mobility than Spain and Italy. Compared with the remaining countries, Germany has a lower lifetime mobility with a lower equalizing impact.

Based on the 7-year mobility (Figure 12 and Table 10), Austria has a higher lifetime mobility with a higher equalizing impact than most countries, except Denmark where the reverse holds, and Ireland which has a higher equalizing mobility. This is confirmed under both approaches. Using the same horizon as Austria, Luxembourg has a lower lifetime mobility with a lower equalizing impact than most countries, except Portugal, where the reverse holds, and Germany, Spain and Italy, which have a higher lifetime mobility but with a lower equalizing impact.

Based on the 6-year mobility (Figure 12 and Table 10), Finland has a higher lifetime mobility with a higher equalizing impact than Germany, Netherlands, Luxembourg, Italy, Greece, Spain, and Portugal, a lower lifetime mobility with a lower equalizing impact than Denmark, and a higher lifetime mobility but with a lower equalizing mobility than Belgium, France, UK, Ireland and Austria.

### 6.3.The evolution of mobility over time

As a last step, we investigate how long-term mobility evolved over time. We look at a horizon of 2 years and 4 year, both under a balanced and unbalanced approach. The results for the 2-year period mobility illustrated in Figure 14, reveal that information provided by the two indices differ to some extent.

We start with the Shorrocks index, displayed in the upper panel in Figure 14. The largest differences between the curves for the balanced and unbalanced approach are observed in Denmark, France, UK, Ireland, Italy and Finland. The mobility based on the unbalanced sample is higher than the one based on the balanced one in Germany until 1996, in Denmark after 1997, in Netherlands after 1995, in Belgium after 1996, in Luxembourg after 1999, in France, in UK after 1997, in Ireland except in 1996, in Italy except 1997, in Greece until 1998, in Spain after 1998, in Portugal except 1994, 1995 and 2000, in Austria after 1999, and in Finland except 1997.

Despite these differences, the conclusions regarding the overall trend over the sample period do not differ to a large extent. Based on the balanced approach, the 2-year period mobility decreased over the sample period in all countries, except Ireland and Finland, showing that in 2000 men had a decreased opportunity of reducing earnings differentials over a 2-year period compared with the 1$^{st}$ wave. The opposite holds in Ireland and Finland. The unbalanced approach is consistent with the balanced one, except for Netherlands and Spain which record increases in the 2-year period mobility.

As revealed by Figure 14, the evolution of the Shorrocks index was not monotonic and the yearly trends differ between the balanced and unbalanced approach.

We turn to the Fields index, displayed in the lower panel in Figure 14. Similar with the previous sections, the Fields index appears to have a higher sensitivity to attrition or to including also the people which become unemployed or inactive or find a job during the sample period than the Shorrocks index. The highest differences are observed for Denmark, Netherlands, Belgium, France, UK, Ireland, and Portugal. The conclusions on the overall trend however do not differ much.

Based on the balanced approach, the evolution of the 2-year Fields index reveals that mobility became less equalizing in 2000-2001 compared with the first two waves in most countries,

except Spain where it became more equalizing, and Netherlands, Portugal and Finland, where 2-year period mobility turned disequalizing. Based on the unbalanced approach, 2-year period mobility became more equalizing in Spain and Ireland, disequalizing in Netherlands and less equalizing in the other countries.

Similar with the Shorrocks index, the evolution of the Fields index was not monotonic and the yearly trends differ between the balanced and unbalanced approach.

Figure 15 shows the evolution of the 4-year mobility using both the Fields and the Shorrocks index. Based on the balanced approach (Panel A) using the Shorrocks index, long-term mobility decreased over time in all countries. The same is observed in the unbalanced approach (Panel B), except for Netherlands and Denmark where long-period mobility increased.

The balanced approach (Panel A) using the Fields index reveals that the 4-year period mobility became less equalizing over time in all countries, except Portugal, where it became more equalizing, and Italy it became disequalizing. The unbalanced approach reveals a slightly different picture for some countries, highlighting again that the Fields index is more sensitive to differential attrition. The 4-year period mobility became less equalizing in all countries, except Spain and Netherlands. No country records disequalizing mobilities under the unbalanced approach.

To sum up, under the balanced approach all countries record a decrease in long-term mobility which also becomes less equalizing in most countries. Exceptions are Italy where it becomes disequalizing, and Portugal, where it becomes more equalizing. The divergent trend between the Shorrocks and the Fields index might signal that Portugal records a decrease in the disequalizing part of mobility, which in turn increases the Fields index.

Turning to the unbalanced approach, all countries except Netherlands and Denmark, record a decrease in long-term mobility, which also becomes less equalizing in all countries except Spain and Netherlands. The divergent trend between the two indices in Spain and Denmark might signal that Spain records a decrease in the disequalizing part of mobility, which in turn increases the Fields index, whereas Denmark records an increase in the disequalizing part of mobility, which in turn decreases the Fields index. In Netherlands long-term mobility increases, becoming more equalizing.

## 7. CONCLUDING REMARKS

This paper explores the degree of lifetime earnings mobility for men in 14 EU countries using ECHP between 1994 and 2001. We address two questions. First, do EU citizens have an increased opportunity to improve their position in the distribution of lifetime earnings? Second, to what extent does earnings mobility work to equalize/disequalize longer-term earnings relative to cross-sectional inequality and how does it differ across the EU? Moreover, we explored how the findings differ, first if we consider only individuals which record positive earnings in each year between 1994 and 2001 – "the balanced approach", and second if we consider also individuals which do not record positive earnings in each year between 1994 and 2001, but only during the horizon over which mobility is measured – "the unbalanced approach". The basic assumption is that mobility measured over a horizon of 8 years is a good proxy for lifetime mobility.

The first question is answered by applying the Shorrocks (1978) index. We find that all countries record an increase in earnings mobility when the horizon over which mobility is measured is extended. This shows that men do have an increasing mobility in the distribution of lifetime earnings as they advance in their career, result confirmed both by the "balanced" and the "unbalanced" approach. Differential attrition appears to have a limited impact on the stability profiles, but a higher impact on the country ranking in Shorrock mobility.

Using the mobility index computed over a horizon of 8 years, we conclude that the highest lifetime mobility is recorded in Denmark, followed by the UK, Belgium, Greece, Ireland, Netherlands, Italy, France, Spain, Germany, and the lowest, Portugal. Therefore Denmark provides the highest opportunity of reducing lifetime earnings differentials and Portugal the lowest. Based on the 6-year mobility, Finland records the second highest lifetime mobility after Denmark. Based on the 7-year mobility, Austria records the second highest lifetime mobility after Denmark, and Luxembourg the second lowest after Portugal. Both approaches confirm these rankings.

The main limitation of this approach is that it fails to answer our second question, whether this mobility is equalizing or disequalizing lifetime earnings differentials. To overcome this limitation we applied the newly developed Fields index. (Fields 2008) In general, mobility

increases with the horizon in all countries, except Portugal where mobility decreases with the horizon, turning negative when measured over an 8-year horizon. This finding is confirmed both by the balanced and the unbalanced approach. Thus only in Portugal mobility is exacerbating long-term earning differentials, whereas the other countries manage to reduce earnings differentials in a lifetime perspective.

The Fields index however is affected to a larger extent by differential attrition than the Shorrocks index: the differentiation between the mobility profile under the balanced approach and the one under the unbalanced approach is evident in all countries, in some more than in others. The largest differences between the two curves are observed in Netherlands, Luxembourg, Ireland, Greece, Portugal and Finland.

Using the mobility index computed over a horizon of 8 years as proxy for lifetime mobility, we conclude that in all countries, except Portugal, mobility acts as an equalizer of lifetime differentials. The highest mobility as equalizer of longer term inequality is recorded in Ireland and Denmark, followed by France and Belgium with similar values, then UK, Greece, Netherlands, Germany, Spain and Italy. Based on the 6-year mobility, Finland records the 7th highest equalizing mobility. Based on the 7-year mobility, Austria records the third highest equalizing mobility after Ireland and Denmark, and Luxembourg the fifth lowest according to the balanced approach and the sixth lowest according to the unbalanced approach.

Regarding the evolution of long-term mobility over time, the two indices bring complementary pieces of information. The longest time horizon to be followed over time in our data is of 4 years. Due to the short horizon, the implications of the trends in the 4-year period mobility for the evolution of lifetime mobility should be regarded with caution. Some differences are present between the balanced and the unbalanced approach.

Under the balanced approach all countries record a decrease in long-term mobility which also becomes less equalizing in most countries. Exceptions are Italy where it becomes disequalizing, and Portugal, where it becomes more equalizing. The divergent trend between the Shorrocks and the Fields index might signal that Portugal records a decrease in the disequalizing part of mobility, which in turn increases the Fields index.

Turning to the unbalanced approach, all countries except Netherlands and Denmark, record a decrease in long-term mobility, which also becomes less equalizing in all countries except Spain

and Netherlands. The divergent trend between the two indices in Spain and Denmark might signal that Spain records a decrease in the disequalizing part of mobility, which in turn increases the Fields index, whereas Denmark records an increase in the disequalizing part of mobility, which in turn decreases the Fields index. Netherlands records an increase in long-term mobility, which also becomes more equalizing.

What are the possible implications for lifetime earnings inequality, assuming that the 8-year period mobility is a good proxy for lifetime mobility? Among the countries which recorded an increase in annual earnings inequality over the sample period – Netherlands, Greece, Finland, Portugal, Luxembourg, Italy, and Germany - only in Portugal lifetime mobility is expected to exacerbate annual differentials in a lifetime perspective. For the rest, mobility acts as an equalizer of lifetime differentials, thus counteracting the increase in annual inequality. For the countries recording a decrease in annual inequality – Ireland, Austria, Denmark, Belgium, Spain, France, and UK - lifetime mobility is expected to enhance the reduction in lifetime earnings differentials.

Given these trends we expect Portugal to record the highest and Denmark the lowest lifetime earnings inequality among the 14 EU countries. The outstanding performance of the labour market in Denmark, which records the lowest annual earnings inequality, coupled with the highest lifetime mobility and the second highest equalizing lifetime mobility - might be due to the so called "flexicurity approach" (OECD, 2004), which represents an interesting combination of high labour market dynamism and a relatively high social protection. It is a mix of flexibility (a high degree of job mobility thanks to low employment protection legislation), social security (a generous system of unemployment benefits) and active labour market programmes. The coupled effect of these factors assures a small annual earnings inequality and an earnings mobility which acts as an equalizer of lifetime differentials, offering at the same time a high opportunity to low wage individuals to improve their relative position in the distribution of lifetime earnings.

Our paper has a threefold contribution to the existing literature. First, by exploring a different facet of mobility – as an equalizer or disequalizer of lifetime earnings differentials -, we fill part of the gap in the study of earnings mobility at the EU level. Second, we apply a new class of measures of mobility as equalizer of long-term differentials - developed by Fields (2008) –,

which complement the information provided by the well-known Shorrocks measure. Therefore we highlight once again the limitations of the Shorrocks measure put forward by Benabou and Ok (2001) and Fields (2008), and the need to provide additional measures for capturing the real nature of lifetime earnings mobility. Third, by comparing the findings between the "unbalanced" and the "balanced approach", meaning between including/and not the individuals that exited and (re)entered the panel, we explored the impact of differentials attrition on the study of earnings mobility as an equalizer of long-term differentials.

**Table 1. Inflows and Outflows of Individuals in the Sample – Germany**

| | | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|
| Number of individuals with positive earnings | | 25018 | 26059 | 25806 | 24889 | 23290 | 22955 | 21909 | 20703 |
| Number of individuals with positive earnings over the entire sample | | | | | 11057 | | | | |
| Absolute number and proportion of individuals who report positive earnings in current year conditional on being in the sample in previous year | | | | | | | | | |
| | Frequencies | 23956 | 25224 | 24197 | 22814 | 22321 | 21290 | 20107 | |
| | % | 66.99 | 67.37 | 66.2 | 63.01 | 64.84 | 64.86 | 64.39 | |
| Absolute number and proportion of individuals who report no earnings in current year conditional on being in the sample in the previous year | | | | | | | | | |
| Unemployed | Frequencies | 3448 | 3461 | 4119 | 3932 | 3055 | 2787 | 2766 | |
| Inactive | % | 9.64 | 9.24 | 11.27 | 10.86 | 8.87 | 8.49 | 8.86 | |
| Attrition | Frequencies | 1885 | 2182 | 1892 | 3280 | 2951 | 2924 | 2830 | |
| | % | 5.27 | 5.83 | 5.18 | 9.06 | 8.57 | 8.91 | 9.06 | |
| Missing Wage | Frequencies | 6470 | 6576 | 6345 | 6180 | 6100 | 5826 | 5524 | |
| | % | 18.09 | 17.56 | 17.36 | 17.07 | 17.72 | 17.75 | 17.69 | |
| Total | Frequencies | 35759 | 37443 | 36553 | 36206 | 34427 | 32827 | 31227 | |
| | % | 100 | 100 | 100 | 100 | 100 | 100 | 100 | |

**Table 1. Inflows and Outflows of Individuals in the Sample – Denmark**

| | | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|
| Number of individuals with positive earnings | | 20899 | 20399 | 19190 | 19062 | 17321 | 16235 | 15678 | 15380 |
| Number of individuals with positive earnings over the entire sample | | | | | 8247 | | | | |
| Absolute number and proportion of individuals who report positive earnings in current year conditional on being in the sample in previous year | | | | | | | | | |
| | Frequencies | 19854 | 18527 | 18110 | 16442 | 15334 | 14865 | 14642 | |
| | % | 68.74 | 66.59 | 69.43 | 66.23 | 67.41 | 69.6 | 71.6 | |
| Absolute number and proportion of individuals who report no earnings in current year conditional on being in the sample in the previous year | | | | | | | | | |
| Unemployed | Frequencies | 1535 | 1744 | 951 | 899 | 732 | 658 | 958 | |
| Inactive | % | 5.31 | 6.27 | 3.65 | 3.62 | 3.22 | 3.08 | 4.68 | |
| Attrition | Frequencies | 2440 | 3096 | 2914 | 3603 | 2922 | 2133 | 1775 | |
| | % | 8.45 | 11.13 | 11.17 | 14.51 | 12.85 | 9.99 | 8.68 | |
| Missing Wage | Frequencies | 5054 | 4454 | 4110 | 3881 | 3759 | 3703 | 3074 | |
| | % | 17.5 | 16.01 | 15.76 | 15.63 | 16.53 | 17.34 | 15.03 | |
| Total | Frequencies | 28883 | 27821 | 26085 | 24825 | 22747 | 21359 | 20449 | |
| | % | 100 | 100 | 100 | 100 | 100 | 100 | 100 | |

**Table 1. Inflows and Outflows of Individuals in the Sample – Netherlands**

| | | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|
| Number of individuals with positive earnings | | 20221 | 22100 | 22892 | 22753 | 22863 | 23233 | 24065 | 24130 |
| Number of individuals with positive earnings over the entire sample | | | | | 8173 | | | | |
| Absolute number and proportion of individuals who report positive earnings in current year conditional on being in the sample in previous year | | | | | | | | | |
| | Frequencies | 20578 | 21328 | 21221 | 21055 | 20545 | 21026 | 21341 | |
| | % | 69.07 | 71.37 | 68.68 | 67.52 | 67.24 | 68.56 | 69.59 | |
| Absolute number and proportion of individuals who report no earnings in current year conditional on being in the sample in the previous year | | | | | | | | | |
| Unemployed | Frequencies | 2418 | 2356 | 2536 | 2120 | 1984 | 1840 | 1689 | |
| Inactive | % | 8.12 | 7.88 | 8.21 | 6.8 | 6.49 | 6 | 5.51 | |
| Attrition | Frequencies | 2941 | 1889 | 2591 | 3562 | 3984 | 4301 | 4891 | |
| | % | 9.87 | 6.32 | 8.39 | 11.42 | 13.04 | 14.02 | 15.95 | |
| Missing Wage | Frequencies | 3857 | 4310 | 4550 | 4448 | 4042 | 3502 | 2745 | |
| | % | 12.95 | 14.42 | 14.73 | 14.26 | 13.23 | 11.42 | 8.95 | |
| Total | Frequencies | 29794 | 29883 | 30898 | 31185 | 30555 | 30669 | 30666 | |
| | % | 100 | 100 | 100 | 100 | 100 | 100 | 100 | |

**Table 1. Inflows and Outflows of Individuals in the Sample – Belgium**

| | | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|
| Number of individuals with positive earnings | | 35342 | 34367 | 33280 | 32378 | 31129 | 29414 | 28087 | 26538 |
| Number of individuals with positive earnings over the entire sample | | | | | 16910 | | | | |
| Absolute number and proportion of individuals who report positive earnings in current year conditional on being in the sample in previous year | | | | | | | | | |
| | Frequencies | 33277 | 32384 | 31564 | 30575 | 28731 | 27460 | 25790 | |
| | % | 63.43 | 63.65 | 64.38 | 63.88 | 64.28 | 65.15 | 64.38 | |
| Absolute number and proportion of individuals who report no earnings in current year conditional on being in the sample in the previous year | | | | | | | | | |
| Unemployed | Frequencies | 3810 | 5127 | 4378 | 3601 | 3040 | 3090 | 2540 | |
| Inactive | % | 7.26 | 10.08 | 8.93 | 7.52 | 6.8 | 7.33 | 6.34 | |
| Attrition | Frequencies | 4145 | 3798 | 3473 | 4803 | 4421 | 3851 | 4930 | |
| | % | 7.9 | 7.46 | 7.08 | 10.04 | 9.89 | 9.14 | 12.31 | |
| Missing Wage | Frequencies | 11228 | 9573 | 9614 | 8882 | 8504 | 7748 | 6798 | |
| | % | 21.4 | 18.81 | 19.61 | 18.56 | 19.03 | 18.38 | 16.97 | |
| Total | Frequencies | 52460 | 50882 | 49029 | 47861 | 44696 | 42149 | 40058 | |
| | % | 100 | 100 | 100 | 100 | 100 | 100 | 100 | |

**Table 1. Inflows and Outflows of Individuals in the Sample – Luxembourg**

| | | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|
| Number of individuals with positive earnings | | | 15829 | 13695 | 14489 | 13403 | 14075 | 12667 | 12992 |
| Number of individuals with positive earnings over the entire sample | | | | | | 7283 | | | |
| Absolute number and proportion of individuals who report positive earnings in current year conditional on being in the sample in previous year | | | | | | | | | |
| | Frequencies | | | 13417 | 12498 | 13190 | 12257 | 12402 | 11457 |
| | % | | | 64.75 | 69.48 | 69.33 | 69.81 | 68.71 | 70.39 |
| Absolute number and proportion of individuals who report no earnings in current year conditional on being in the sample in the previous year | | | | | | | | | |
| Unemployed | Frequencies | | | 1765 | 1559 | 1505 | 1408 | 1246 | 954 |
| Inactive | % | | | 8.52 | 8.67 | 7.91 | 8.02 | 6.9 | 5.86 |
| Attrition | Frequencies | | | 3423 | 1663 | 2109 | 1913 | 2346 | 1940 |
| | % | | | 16.52 | 9.25 | 11.09 | 10.9 | 13 | 11.92 |
| Missing Wage | Frequencies | | | 2116 | 2267 | 2220 | 1980 | 2057 | 1926 |
| | % | | | 10.21 | 12.6 | 11.67 | 11.28 | 11.4 | 11.83 |
| Total | Frequencies | | | 20721 | 17987 | 19024 | 17558 | 18051 | 16277 |
| | % | | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

**Table 1. Inflows and Outflows of Individuals in the Sample – France**

| | | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|
| Number of individuals with positive earnings | | 20137 | 19270 | 19042 | 17906 | 14467 | 14012 | 13760 | 14212 |
| Number of individuals with positive earnings over the entire sample | | | | | | 5895 | | | |
| Absolute number and proportion of individuals who report positive earnings in current year conditional on being in the sample in previous year | | | | | | | | | |
| | Frequencies | | 19143 | 18197 | 17243 | 14014 | 12209 | 12080 | 12468 |
| | % | | 62.47 | 64.76 | 62 | 52.08 | 54.24 | 55.54 | 60.8 |
| Absolute number and proportion of individuals who report no earnings in current year conditional on being in the sample in the previous year | | | | | | | | | |
| Unemployed | Frequencies | | 3259 | 3042 | 3426 | 3006 | 2607 | 2072 | 1995 |
| Inactive | % | | 10.64 | 10.83 | 12.32 | 11.17 | 11.58 | 9.53 | 9.73 |
| Attrition | Frequencies | | 3371 | 2213 | 2785 | 5584 | 3531 | 3786 | 2658 |
| | % | | 11 | 7.88 | 10.01 | 20.75 | 15.69 | 17.41 | 12.96 |
| Missing Wage | Frequencies | | 4871 | 4646 | 4358 | 4304 | 4162 | 3811 | 3385 |
| | % | | 15.9 | 16.53 | 15.67 | 16 | 18.49 | 17.52 | 16.51 |
| Total | Frequencies | | 30644 | 28098 | 27812 | 26908 | 22509 | 21749 | 20506 |
| | % | | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

**Table 1. Inflows and Outflows of Individuals in the Sample – UK**

| | | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|
| Number of individuals with positive earnings | | 24949 | 25329 | 25495 | 26010 | 26145 | 25750 | 25674 | 25264 |
| Number of individuals with positive earnings over the entire sample | | | | | 13977 | | | | |
| Absolute number and proportion of individuals who report positive earnings in current year conditional on being in the sample in previous year | | | | | | | | | |
| | Frequencies | 24511 | 24848 | 25303 | 25278 | 25006 | 24881 | 24467 | |
| | % | 64.59 | 66.31 | 67.06 | 67.04 | 67.36 | 68.33 | 68.58 | |
| Absolute number and proportion of individuals who report no earnings in current year conditional on being in the sample in the previous year | | | | | | | | | |
| Unemployed | Frequencies | 4712 | 5053 | 4663 | 4140 | 3941 | 3607 | 3595 | |
| Inactive | % | 12.42 | 13.48 | 12.36 | 10.98 | 10.62 | 9.91 | 10.08 | |
| Attrition | Frequencies | 1836 | 966 | 1169 | 2073 | 1919 | 2153 | 2105 | |
| | % | 4.84 | 2.58 | 3.1 | 5.5 | 5.17 | 5.91 | 5.9 | |
| Missing Wage | Frequencies | 6888 | 6605 | 6597 | 6213 | 6257 | 5774 | 5510 | |
| | % | 18.15 | 17.63 | 17.48 | 16.48 | 16.85 | 15.86 | 15.44 | |
| Total | Frequencies | 37947 | 37472 | 37732 | 37704 | 37123 | 36415 | 35677 | |
| | % | 100 | 100 | 100 | 100 | 100 | 100 | 100 | |

**Table 1. Inflows and Outflows of Individuals in the Sample – Ireland**

| | | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|
| Number of individuals with positive earnings | | 13937 | 13221 | 12590 | 12515 | 12435 | 12091 | 10745 | 9727 |
| Number of individuals with positive earnings over the entire sample | | | | | 4453 | | | | |
| Absolute number and proportion of individuals who report positive earnings in current year conditional on being in the sample in previous year | | | | | | | | | |
| | Frequencies | 12750 | 12217 | 12212 | 12020 | 11668 | 10236 | 9507 | |
| | % | 49.99 | 50.04 | 52.41 | 53.13 | 54.1 | 51.63 | 54.65 | |
| Absolute number and proportion of individuals who report no earnings in current year conditional on being in the sample in the previous year | | | | | | | | | |
| Unemployed | Frequencies | 4930 | 4723 | 4254 | 3374 | 2905 | 2185 | 2307 | |
| Inactive | % | 19.33 | 19.35 | 18.26 | 14.91 | 13.47 | 11.02 | 13.26 | |
| Attrition | Frequencies | 2167 | 2115 | 1600 | 1936 | 2516 | 3288 | 2362 | |
| | % | 8.5 | 8.66 | 6.87 | 8.56 | 11.66 | 16.59 | 13.58 | |
| Missing Wage | Frequencies | 5656 | 5359 | 5235 | 5292 | 4480 | 4116 | 3220 | |
| | % | 22.18 | 21.95 | 22.47 | 23.39 | 20.77 | 20.76 | 18.51 | |
| Total | Frequencies | 25503 | 24414 | 23301 | 22622 | 21569 | 19825 | 17396 | |
| | % | 100 | 100 | 100 | 100 | 100 | 100 | 100 | |

**Table 1. Inflows and Outflows of Individuals in the Sample – Italy**

| | | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|
| Number of individuals with positive earnings | | 32633 | 32236 | 32111 | 29661 | 28865 | 26993 | 26912 | 25170 |
| Number of individuals with positive earnings over the entire sample | | | | | 12070 | | | | |
| Absolute number and proportion of individuals who report positive earnings in current year conditional on being in the sample in previous year | | | | | | | | | |
| | Frequencies | 30946 | 31028 | 28717 | 27188 | 25717 | 25348 | 24139 | |
| | % | 51.58 | 51.19 | 47.18 | 47.34 | 46.87 | 48.73 | 48.86 | |
| Absolute number and proportion of individuals who report no earnings in current year conditional on being in the sample in the previous year | | | | | | | | | |
| Unemployed | Frequencies | 7900 | 7799 | 7670 | 6627 | 6890 | 5662 | 5027 | |
| Inactive | % | 13.17 | 12.87 | 12.6 | 11.54 | 12.56 | 10.88 | 10.18 | |
| Attrition | Frequencies | 3175 | 2947 | 5922 | 6030 | 5941 | 5399 | 5920 | |
| | % | 5.29 | 4.86 | 9.73 | 10.5 | 10.83 | 10.38 | 11.98 | |
| Missing Wage | Frequencies | 17978 | 18836 | 18559 | 17585 | 16325 | 15610 | 14315 | |
| | % | 29.96 | 31.08 | 30.49 | 30.62 | 29.75 | 30.01 | 28.98 | |
| Total | Frequencies | 59999 | 60610 | 60868 | 57430 | 54873 | 52019 | 49401 | |
| | % | 100 | 100 | 100 | 100 | 100 | 100 | 100 | |

**Table 1. Inflows and Outflows of Individuals in the Sample – Greece**

| | | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|
| Number of individuals with positive earnings | | 27974 | 27654 | 26150 | 24865 | 22675 | 22001 | 21335 | 21929 |
| Number of individuals with positive earnings over the entire sample | | | | | 9404 | | | | |
| Absolute number and proportion of individuals who report positive earnings in current year conditional on being in the sample in previous year | | | | | | | | | |
| | Frequencies | 26868 | 25946 | 24385 | 21815 | 20357 | 20443 | 21342 | |
| | % | 45.83 | 45.69 | 44.98 | 42.09 | 43.52 | 46.06 | 49.72 | |
| Absolute number and proportion of individuals who report no earnings in current year conditional on being in the sample in the previous year | | | | | | | | | |
| Unemployed | Frequencies | 7537 | 6813 | 6419 | 4523 | 4489 | 4427 | 3858 | |
| Inactive | % | 12.86 | 12 | 11.84 | 8.73 | 9.6 | 9.97 | 8.99 | |
| Attrition | Frequencies | 4417 | 4392 | 4347 | 7892 | 6222 | 4159 | 2363 | |
| | % | 7.53 | 7.73 | 8.02 | 15.23 | 13.3 | 9.37 | 5.5 | |
| Missing Wage | Frequencies | 19802 | 19640 | 19068 | 17599 | 15707 | 15352 | 15365 | |
| | % | 33.78 | 34.58 | 35.17 | 33.96 | 33.58 | 34.59 | 35.79 | |
| Total | Frequencies | 58624 | 56791 | 54219 | 51829 | 46775 | 44381 | 42928 | |
| | % | 100 | 100 | 100 | 100 | 100 | 100 | 100 | |

**Table 1. Inflows and Outflows of Individuals in the Sample – Spain**

| | | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|
| Number of individuals with positive earnings | | 22559 | 21863 | 21296 | 20975 | 20371 | 20580 | 19898 | 20185 |
| Number of individuals with positive earnings over the entire sample | | | | | 7234 | | | | |
| Absolute number and proportion of individuals who report positive earnings in current year conditional on being in the sample in previous year | | | | | | | | | |
| | Frequencies | 21460 | 20521 | 20329 | 19456 | 19679 | 19167 | 19352 | |
| | % | 47.6 | 48.29 | 48.49 | 48.63 | 52.13 | 52.12 | 56.06 | |
| Absolute number and proportion of individuals who report no earnings in current year conditional on being in the sample in the previous year | | | | | | | | | |
| Unemployed | Frequencies | 8419 | 8230 | 7353 | 5970 | 5083 | 4512 | 4761 | |
| Inactive | % | 18.67 | 19.37 | 17.54 | 14.92 | 13.46 | 12.27 | 13.79 | |
| Attrition | Frequencies | 4467 | 3000 | 4120 | 4327 | 3188 | 3922 | 3052 | |
| | % | 9.91 | 7.06 | 9.83 | 10.81 | 8.44 | 10.66 | 8.84 | |
| Missing Wage | Frequencies | 10741 | 10742 | 10121 | 10259 | 9802 | 9176 | 7357 | |
| | % | 23.82 | 25.28 | 24.14 | 25.64 | 25.96 | 24.95 | 21.31 | |
| Total | Frequencies | 45087 | 42493 | 41923 | 40012 | 37752 | 36777 | 34522 | |
| | % | 100 | 100 | 100 | 100 | 100 | 100 | 100 | |

**Table 1. Inflows and Outflows of Individuals in the Sample – Portugal**

| | | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|
| Number of individuals with positive earnings | | 14653 | 15450 | 15379 | 15087 | 14837 | 14569 | 14604 | 14550 |
| Number of individuals with positive earnings over the entire sample | | | | | 6214 | | | | |
| Absolute number and proportion of individuals who report positive earnings in current year conditional on being in the sample in previous year | | | | | | | | | |
| | Frequencies | 13892 | 14538 | 14321 | 13977 | 13921 | 13952 | 13942 | |
| | % | 57.84 | 57.5 | 57.32 | 56.98 | 59.12 | 60.83 | 62.16 | |
| Absolute number and proportion of individuals who report no earnings in current year conditional on being in the sample in the previous year | | | | | | | | | |
| Unemployed | Frequencies | 2187 | 2264 | 2396 | 2019 | 2067 | 1843 | 1702 | |
| Inactive | % | 9.11 | 8.95 | 9.59 | 8.23 | 8.78 | 8.04 | 7.59 | |
| Attrition | Frequencies | 1701 | 1908 | 1918 | 2346 | 1956 | 1617 | 1575 | |
| | % | 7.08 | 7.55 | 7.68 | 9.56 | 8.31 | 7.05 | 7.02 | |
| Missing Wage | Frequencies | 6236 | 6573 | 6350 | 6189 | 5602 | 5525 | 5211 | |
| | % | 25.97 | 26 | 25.42 | 25.23 | 23.79 | 24.09 | 23.23 | |
| Total | Frequencies | 24016 | 25283 | 24985 | 24531 | 23546 | 22937 | 22430 | |
| | % | 100 | 100 | 100 | 100 | 100 | 100 | 100 | |

**Table 1. Inflows and Outflows of Individuals in the Sample – Austria**

| | | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|
| Number of individuals with positive earnings | | | 17944 | 17789 | 17199 | 16209 | 15162 | 13816 | 13056 |
| Number of individuals with positive earnings over the entire sample | | | | | | 8127 | | | |
| Absolute number and proportion of individuals who report positive earnings in current year conditional on being in the sample in previous year | | | | | | | | | |
| | Frequencies | | | 16472 | 16384 | 15634 | 14551 | 13403 | 12601 |
| | % | | | 67.96 | 68.2 | 67.49 | 67.2 | 66.51 | 68.21 |
| Absolute number and proportion of individuals who report no earnings in current year conditional on being in the sample in the previous year | | | | | | | | | |
| Unemployed | Frequencies | | | 1209 | 1231 | 906 | 790 | 803 | 843 |
| Inactive | % | | | 4.99 | 5.12 | 3.91 | 3.65 | 3.98 | 4.56 |
| Attrition | Frequencies | | | 2195 | 2080 | 2435 | 2470 | 2409 | 1794 |
| | % | | | 9.06 | 8.66 | 10.51 | 11.41 | 11.95 | 9.71 |
| Missing Wage | Frequencies | | | 4361 | 4330 | 4189 | 3842 | 3538 | 3235 |
| | % | | | 17.99 | 18.02 | 18.08 | 17.74 | 17.56 | 17.51 |
| Total | Frequencies | | | 24237 | 24025 | 23164 | 21653 | 20153 | 18473 |
| | % | | | 100 | 100 | 100 | 100 | 100 | 100 |

**Table 1. Inflows and Outflows of Individuals in the Sample – Finland**

| | | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|
| Number of individuals with positive earnings | | 15811 | 15845 | 15895 | 15546 | 13329 | 13057 |
| Number of individuals with positive earnings over the entire sample | | | | 6913 | | | |
| Absolute number and proportion of individuals who report positive earnings in current year conditional on being in the sample in previous year | | | | | | | |
| | Frequencies | | 15246 | 15345 | 14753 | 12756 | 12588 |
| | % | | 55.95 | 57.2 | 59.29 | 53.83 | 64.16 |
| Absolute number and proportion of individuals who report no earnings in current year conditional on being in the sample in the previous year | | | | | | | |
| Unemployed | Frequencies | | 3446 | 2327 | 1657 | 1326 | 1267 |
| Inactive | % | | 12.65 | 8.67 | 6.66 | 5.6 | 6.46 |
| Attrition | Frequencies | | 1933 | 3219 | 2658 | 5219 | 1708 |
| | % | | 7.09 | 12 | 10.68 | 22.02 | 8.71 |
| Missing Wage | Frequencies | | 6623 | 5937 | 5814 | 4398 | 4057 |
| | % | | 24.31 | 22.13 | 23.37 | 18.56 | 20.68 |
| Total | Frequencies | | 27248 | 26828 | 24882 | 23699 | 19620 |
| | % | | 100 | 100 | 100 | 100 | 100 |

**Table 2. Sample Statistics of Hourly Earnings**

| | Year | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|
| | Mean | 9.43 | 9.49 | 9.61 | 9.52 | 9.57 | 9.48 | 9.60 | 9.72 |
| **Germany** | Median | 8.65 | 8.68 | 8.78 | 8.84 | 8.70 | 8.65 | 8.75 | 8.82 |
| | Standard Deviation | 4.00 | 4.17 | 4.09 | 4.01 | 4.39 | 4.32 | 4.39 | 4.37 |
| | Mean | 10.89 | 11.40 | 11.58 | 11.61 | 11.86 | 11.85 | 12.02 | 12.08 |
| **Denmark** | Median | 10.36 | 10.76 | 10.96 | 11.14 | 11.46 | 11.36 | 11.77 | 11.50 |
| | Standard Deviation | 3.23 | 3.31 | 3.52 | 3.54 | 3.13 | 3.31 | 3.43 | 3.20 |
| | Mean | 9.69 | 9.56 | 9.59 | 9.70 | 10.02 | 9.88 | 10.04 | 9.91 |
| **Netherlands** | Median | 9.11 | 9.07 | 9.01 | 9.10 | 9.27 | 9.18 | 9.32 | 9.23 |
| | Standard Deviation | 3.39 | 3.37 | 3.55 | 3.56 | 3.64 | 3.40 | 3.48 | 3.95 |
| | Mean | 8.48 | 8.82 | 8.71 | 8.75 | 8.81 | 8.83 | 8.92 | 9.10 |
| **Belgium** | Median | 7.86 | 8.17 | 7.99 | 8.09 | 8.08 | 8.34 | 8.25 | 8.30 |
| | Standard Deviation | 3.17 | 3.08 | 3.02 | 3.09 | 2.97 | 2.94 | 3.00 | 3.21 |
| | Mean | | 16.18 | 15.81 | 16.73 | 17.39 | 17.15 | 17.22 | 17.10 |
| **Luxembourg** | Median | | 14.90 | 14.52 | 15.31 | 15.72 | 15.60 | 15.65 | 15.29 |
| | Standard Deviation | | 7.50 | 7.19 | 7.77 | 8.21 | 8.38 | 8.37 | 8.22 |
| | Mean | 10.23 | 9.92 | 9.87 | 10.05 | 10.33 | 10.60 | 10.55 | 10.87 |
| **France**[16] | Median | 8.56 | 8.57 | 8.53 | 8.53 | 8.84 | 9.04 | 9.06 | 9.48 |
| | Standard Deviation | 5.82 | 5.33 | 5.17 | 5.65 | 5.62 | 5.78 | 5.51 | 5.72 |
| | Mean | 8.16 | 8.11 | 8.22 | 8.34 | 8.68 | 9.01 | 9.21 | 9.68 |
| **UK** | Median | 7.30 | 7.29 | 7.51 | 7.52 | 7.67 | 8.00 | 8.22 | 8.68 |
| | Standard Deviation | 3.99 | 3.95 | 3.80 | 3.79 | 4.01 | 4.13 | 4.24 | 4.49 |
| | Mean | 9.30 | 9.54 | 9.76 | 10.02 | 10.43 | 10.84 | 11.69 | 12.44 |
| **Ireland** | Median | 8.06 | 8.44 | 8.84 | 8.86 | 9.33 | 9.73 | 10.25 | 11.36 |
| | Standard Deviation | 5.14 | 4.99 | 4.85 | 4.98 | 5.17 | 5.02 | 5.24 | 5.15 |
| | Mean | 7.16 | 6.91 | 6.96 | 7.05 | 7.29 | 7.37 | 7.28 | 7.32 |
| **Italy** | Median | 6.65 | 6.32 | 6.43 | 6.48 | 6.69 | 6.76 | 6.59 | 6.67 |
| | Standard Deviation | 2.77 | 2.59 | 2.67 | 2.68 | 3.01 | 3.00 | 2.99 | 3.04 |
| | Mean | 4.95 | 5.03 | 5.23 | 5.59 | 5.63 | 5.85 | 5.70 | 5.77 |
| **Greece** | Median | 4.49 | 4.41 | 4.53 | 4.90 | 4.91 | 4.99 | 4.89 | 4.99 |
| | Standard Deviation | 2.33 | 2.42 | 2.43 | 2.91 | 2.87 | 3.14 | 3.07 | 3.21 |
| | Mean | 6.83 | 6.95 | 7.09 | 6.89 | 7.18 | 7.37 | 7.45 | 7.42 |
| **Spain** | Median | 5.86 | 5.82 | 5.92 | 5.72 | 6.04 | 6.15 | 6.29 | 6.33 |
| | Standard Deviation | 3.81 | 3.86 | 4.00 | 3.92 | 4.06 | 4.15 | 4.07 | 3.87 |
| | Mean | 3.70 | 3.74 | 3.84 | 3.92 | 3.99 | 4.08 | 4.31 | 4.46 |
| **Portugal** | Median | 2.92 | 2.82 | 2.98 | 3.03 | 3.05 | 3.08 | 3.29 | 3.34 |
| | Standard Deviation | 2.34 | 2.45 | 2.54 | 2.65 | 2.81 | 2.82 | 3.16 | 3.33 |
| | Mean | | 9.08 | 8.33 | 8.37 | 8.49 | 8.55 | 8.55 | 8.54 |
| **Austria** | Median | | 8.51 | 7.64 | 7.63 | 7.84 | 7.82 | 7.86 | 7.93 |
| | Standard Deviation | | 3.52 | 3.00 | 3.07 | 2.95 | 2.89 | 2.84 | 2.82 |
| | Mean | | | 7.89 | 8.01 | 8.41 | 8.45 | 8.66 | 8.86 |
| **Finland** | Median | | | 7.48 | 7.57 | 7.85 | 7.90 | 8.18 | 7.97 |
| | Standard Deviation | | | 2.70 | 2.77 | 2.92 | 2.91 | 2.93 | 3.29 |

[16] Gross Amounts

**Table 3. Earnings Inequality (Index*100)**

| | | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|
| Germany | Gini | 22.15 | 22.34 | 22.04 | 21.89 | 22.58 | 22.81 | 22.75 | 22.54 |
| | Theil | 8.22 | 8.61 | 8.23 | 8.06 | 8.85 | 8.96 | 8.92 | 8.72 |
| | A(1) | 8.08 | 8.38 | 8.04 | 7.84 | 8.12 | 8.53 | 8.41 | 8.17 |
| Denmark | Gini | 15.76 | 15.26 | 15.52 | 15.21 | 14.24 | 14.68 | 14.94 | 14.05 |
| | Theil | 4.22 | 3.92 | 4.23 | 4.15 | 3.37 | 3.73 | 3.83 | 3.35 |
| | A(1) | 4.26 | 3.78 | 4.10 | 3.96 | 3.37 | 3.76 | 3.78 | 3.33 |
| Netherlands | Gini | 18.07 | 18.37 | 19.19 | 18.80 | 18.93 | 17.92 | 18.18 | 20.67 |
| | Theil | 5.63 | 5.76 | 6.32 | 6.07 | 5.96 | 5.40 | 5.56 | 7.25 |
| | A(1) | 5.56 | 5.77 | 6.33 | 5.90 | 5.65 | 5.18 | 5.44 | 7.08 |
| Belgium | Gini | 19.10 | 17.71 | 17.64 | 18.13 | 17.53 | 17.33 | 17.13 | 17.85 |
| | Theil | 6.23 | 5.37 | 5.35 | 5.58 | 5.15 | 5.11 | 5.04 | 5.48 |
| | A(1) | 5.92 | 4.95 | 5.04 | 5.24 | 4.85 | 4.92 | 4.69 | 5.14 |
| Luxembourg | Gini | | 25.23 | 24.74 | 25.41 | 25.62 | 26.58 | 26.50 | 26.32 |
| | Theil | | 10.09 | 9.85 | 10.24 | 10.37 | 11.19 | 11.15 | 10.89 |
| | A(1) | | 9.88 | 10.00 | 10.16 | 10.02 | 10.95 | 11.09 | 10.66 |
| France | Gini | 27.62 | 26.47 | 26.26 | 27.23 | 27.28 | 27.41 | 26.83 | 26.49 |
| | Theil | 13.21 | 12.04 | 11.63 | 12.88 | 12.58 | 12.65 | 11.94 | 11.87 |
| | A(1) | 11.64 | 10.88 | 10.58 | 11.41 | 11.54 | 11.59 | 11.17 | 10.98 |
| UK | Gini | 24.26 | 24.22 | 23.35 | 23.36 | 23.54 | 23.25 | 23.35 | 23.51 |
| | Theil | 10.08 | 10.01 | 9.20 | 9.05 | 9.24 | 9.08 | 9.16 | 9.29 |
| | A(1) | 9.25 | 9.19 | 8.57 | 8.46 | 8.55 | 8.32 | 8.46 | 8.51 |
| Ireland | Gini | 27.59 | 26.87 | 25.76 | 25.47 | 25.00 | 23.39 | 22.77 | 21.70 |
| | Theil | 12.87 | 11.97 | 11.00 | 10.83 | 10.60 | 9.31 | 8.78 | 7.85 |
| | A(1) | 11.84 | 11.21 | 10.50 | 10.14 | 9.85 | 8.66 | 8.15 | 7.64 |
| Italy | Gini | 19.16 | 18.47 | 19.02 | 18.93 | 19.85 | 19.72 | 19.78 | 19.90 |
| | Theil | 6.51 | 6.08 | 6.42 | 6.29 | 7.13 | 7.01 | 7.08 | 7.19 |
| | A(1) | 5.99 | 5.58 | 5.91 | 5.78 | 6.41 | 6.30 | 6.33 | 6.39 |
| Greece | Gini | 23.62 | 24.37 | 23.80 | 25.55 | 25.66 | 26.98 | 26.51 | 26.37 |
| | Theil | 9.51 | 9.97 | 9.44 | 11.23 | 11.09 | 12.20 | 11.93 | 12.17 |
| | A(1) | 8.77 | 9.13 | 8.70 | 9.97 | 9.99 | 10.97 | 10.68 | 10.55 |
| Spain | Gini | 27.87 | 28.27 | 28.19 | 28.71 | 28.37 | 26.99 | 26.36 | 26.07 |
| | Theil | 13.08 | 13.22 | 13.36 | 13.67 | 13.47 | 12.69 | 12.09 | 11.47 |
| | A(1) | 11.84 | 12.13 | 11.94 | 12.33 | 12.17 | 11.07 | 10.60 | 10.28 |
| Portugal | Gini | 30.05 | 31.14 | 30.66 | 30.85 | 31.13 | 30.11 | 31.32 | 31.72 |
| | Theil | 15.79 | 16.93 | 16.76 | 17.27 | 18.01 | 17.21 | 18.86 | 19.27 |
| | A(1) | 13.23 | 14.16 | 13.80 | 14.05 | 14.37 | 13.55 | 14.60 | 14.92 |
| Austria | Gini | | 19.49 | 18.34 | 18.34 | 17.39 | 17.07 | 16.72 | 16.85 |
| | Theil | | 6.67 | 5.84 | 5.90 | 5.27 | 5.10 | 4.93 | 4.97 |
| | A(1) | | 6.44 | 5.62 | 5.52 | 4.87 | 4.80 | 4.67 | 4.82 |
| Finland | Gini | | | 17.32 | 17.80 | 17.30 | 17.81 | 17.10 | 18.50 |
| | Theil | | | 5.22 | 5.46 | 5.23 | 5.38 | 5.08 | 5.98 |
| | A(1) | | | 4.94 | 5.29 | 4.83 | 5.19 | 4.76 | 5.53 |

**Table 4. Earnings Inequality (Theil) for Different Time Horizons - Balanced sample over sub-periods**

| Inequality | Germany | Denmark | Netherlands | Belgium | Luxembourg | France | UK | Ireland | Italy | Greece | Spain | Portugal | Austria | Finland |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994-1995 | 0.0655 | 0.0282 | 0.0431 | 0.0425 | | 0.0971 | 0.0709 | 0.1042 | 0.0520 | 0.0744 | 0.0966 | 0.1340 | | |
| 1994-1996 | 0.0644 | 0.0264 | 0.0431 | 0.0408 | | 0.0908 | 0.0676 | 0.0917 | 0.0500 | 0.0737 | 0.0944 | 0.1380 | | |
| 1994-1997 | 0.0624 | 0.0241 | 0.0416 | 0.0403 | | 0.0889 | 0.0653 | 0.0866 | 0.0479 | 0.0728 | 0.0940 | 0.1388 | | |
| 1994-1998 | 0.0617 | 0.0229 | 0.0407 | 0.0403 | | 0.0881 | 0.0636 | 0.0822 | 0.0485 | 0.0715 | 0.0942 | 0.1373 | | |
| 1994-1999 | 0.0611 | 0.0219 | 0.0401 | 0.0395 | | 0.0871 | 0.0632 | 0.0791 | 0.0487 | 0.0714 | 0.0938 | 0.1382 | | |
| 1994-2000 | 0.0604 | 0.0210 | 0.0393 | 0.0396 | | 0.0854 | 0.0632 | 0.0749 | 0.0491 | 0.0702 | 0.0942 | 0.1400 | | |
| 1994-2001 | 0.0600 | 0.0205 | 0.0395 | 0.0395 | | 0.0847 | 0.0630 | 0.0718 | 0.0494 | 0.0698 | 0.0929 | 0.1423 | | |
| 1995-1996 | 0.0658 | 0.0273 | 0.0453 | 0.0414 | 0.0701 | 0.0934 | 0.0695 | 0.0892 | 0.0514 | 0.0788 | 0.0955 | 0.1436 | 0.0438 | |
| 1995-1997 | 0.0631 | 0.0243 | 0.0424 | 0.0409 | 0.0671 | 0.0906 | 0.0662 | 0.0842 | 0.0486 | 0.0764 | 0.0953 | 0.1434 | 0.0411 | |
| 1995-1998 | 0.0623 | 0.0230 | 0.0412 | 0.0410 | 0.0667 | 0.0897 | 0.0644 | 0.0805 | 0.0495 | 0.0741 | 0.0956 | 0.1408 | 0.0394 | |
| 1995-1999 | 0.0616 | 0.0219 | 0.0404 | 0.0400 | 0.0667 | 0.0887 | 0.0640 | 0.0776 | 0.0497 | 0.0738 | 0.0952 | 0.1412 | 0.0380 | |
| 1995-2000 | 0.0609 | 0.0210 | 0.0396 | 0.0401 | 0.0665 | 0.0867 | 0.0641 | 0.0736 | 0.0501 | 0.0721 | 0.0957 | 0.1430 | 0.0375 | |
| 1995-2001 | 0.0605 | 0.0206 | 0.0399 | 0.0401 | 0.0664 | 0.0858 | 0.0640 | 0.0707 | 0.0504 | 0.0716 | 0.0941 | 0.1452 | 0.0371 | |
| 1996-1997 | 0.0644 | 0.0251 | 0.0438 | 0.0437 | 0.0666 | 0.0913 | 0.0691 | 0.0812 | 0.0497 | 0.0808 | 0.1003 | 0.1534 | 0.0435 | 0.0373 |
| 1996-1998 | 0.0633 | 0.0233 | 0.0422 | 0.0431 | 0.0663 | 0.0902 | 0.0661 | 0.0783 | 0.0507 | 0.0769 | 0.0992 | 0.1467 | 0.0410 | 0.0347 |
| 1996-1999 | 0.0625 | 0.0221 | 0.0413 | 0.0414 | 0.0665 | 0.0889 | 0.0654 | 0.0759 | 0.0508 | 0.0762 | 0.0979 | 0.1458 | 0.0390 | 0.0348 |
| 1996-2000 | 0.0615 | 0.0211 | 0.0403 | 0.0415 | 0.0665 | 0.0867 | 0.0655 | 0.0719 | 0.0512 | 0.0740 | 0.0982 | 0.1469 | 0.0384 | 0.0342 |
| 1996-2001 | 0.0611 | 0.0208 | 0.0408 | 0.0414 | 0.0665 | 0.0859 | 0.0652 | 0.0693 | 0.0515 | 0.0733 | 0.0960 | 0.1488 | 0.0379 | 0.0346 |
| 1997-1998 | 0.0640 | 0.0234 | 0.0426 | 0.0461 | 0.0685 | 0.0937 | 0.0684 | 0.0804 | 0.0530 | 0.0799 | 0.1034 | 0.1465 | 0.0432 | 0.0361 |
| 1997-1999 | 0.0632 | 0.0221 | 0.0417 | 0.0431 | 0.0682 | 0.0909 | 0.0675 | 0.0773 | 0.0527 | 0.0787 | 0.1002 | 0.1461 | 0.0401 | 0.0363 |
| 1997-2000 | 0.0620 | 0.0213 | 0.0405 | 0.0430 | 0.0680 | 0.0879 | 0.0676 | 0.0726 | 0.0530 | 0.0759 | 0.1004 | 0.1475 | 0.0392 | 0.0355 |
| 1997-2001 | 0.0616 | 0.0210 | 0.0413 | 0.0426 | 0.0678 | 0.0870 | 0.0672 | 0.0697 | 0.0531 | 0.0750 | 0.0974 | 0.1500 | 0.0386 | 0.0361 |
| 1998-1999 | 0.0659 | 0.0236 | 0.0435 | 0.0438 | 0.0713 | 0.0921 | 0.0700 | 0.0784 | 0.0574 | 0.0817 | 0.1035 | 0.1464 | 0.0401 | 0.0389 |
| 1998-2000 | 0.0638 | 0.0221 | 0.0415 | 0.0437 | 0.0703 | 0.0884 | 0.0698 | 0.0725 | 0.0565 | 0.0778 | 0.1030 | 0.1488 | 0.0393 | 0.0373 |
| 1998-2001 | 0.0630 | 0.0217 | 0.0425 | 0.0434 | 0.0698 | 0.0873 | 0.0691 | 0.0693 | 0.0560 | 0.0767 | 0.0988 | 0.1522 | 0.0389 | 0.0379 |
| 1999-2000 | 0.0644 | 0.0230 | 0.0424 | 0.0454 | 0.0717 | 0.0883 | 0.0746 | 0.0732 | 0.0575 | 0.0805 | 0.1053 | 0.1546 | 0.0404 | 0.0404 |
| 1999-2001 | 0.0634 | 0.0224 | 0.0438 | 0.0450 | 0.0708 | 0.0872 | 0.0725 | 0.0690 | 0.0567 | 0.0784 | 0.0990 | 0.1585 | 0.0397 | 0.0409 |
| 2000-2001 | 0.0642 | 0.0239 | 0.0463 | 0.0481 | 0.0722 | 0.0877 | 0.0761 | 0.0690 | 0.0587 | 0.0787 | 0.1010 | 0.1666 | 0.0421 | 0.0432 |

**Table 5. Earnings Inequality (Theil) for Different Time Horizons - Unbalanced sample over sub-periods**

| | Germany | Denmark | Netherlands | Belgium | Luxembourg | France | UK | Ireland | Italy | Greece | Spain | Portugal | Austria | Finland |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994-1995 | 0.0744 | 0.0316 | 0.0468 | 0.0496 | | 0.106 | 0.0866 | 0.1109 | 0.054 | 0.0801 | 0.1179 | 0.1524 | | |
| 1994-1996 | 0.0714 | 0.0288 | 0.0458 | 0.0454 | | 0.0958 | 0.0775 | 0.0979 | 0.0512 | 0.0745 | 0.1124 | 0.1474 | | |
| 1994-1997 | 0.0688 | 0.0266 | 0.0443 | 0.043 | | 0.0931 | 0.0726 | 0.0916 | 0.0495 | 0.0767 | 0.1078 | 0.1449 | | |
| 1994-1998 | 0.0655 | 0.0252 | 0.0435 | 0.0419 | | 0.0929 | 0.0685 | 0.086 | 0.0497 | 0.0729 | 0.106 | 0.144 | | |
| 1994-1999 | 0.0623 | 0.0232 | 0.0424 | 0.0399 | | 0.0915 | 0.0653 | 0.0819 | 0.049 | 0.0756 | 0.1046 | 0.1381 | | |
| 1994-2000 | 0.0602 | 0.0211 | 0.0416 | 0.0388 | | 0.0874 | 0.0635 | 0.0786 | 0.0496 | 0.0732 | 0.1 | 0.1393 | | |
| 1994-2001 | 0.06 | 0.0205 | 0.0395 | 0.0395 | | 0.0847 | 0.063 | 0.0718 | 0.0494 | 0.0698 | 0.0929 | 0.1423 | | |
| 1995-1996 | 0.0751 | 0.0329 | 0.0512 | 0.0472 | 0.0869 | 0.1029 | 0.0816 | 0.1001 | 0.0547 | 0.0852 | 0.1209 | 0.1578 | 0.0514 | |
| 1995-1997 | 0.0718 | 0.0293 | 0.0465 | 0.0442 | 0.0786 | 0.099 | 0.0757 | 0.0943 | 0.0522 | 0.0849 | 0.1158 | 0.1536 | 0.0479 | |
| 1995-1998 | 0.0675 | 0.0275 | 0.0449 | 0.0425 | 0.0751 | 0.0989 | 0.0711 | 0.0875 | 0.0521 | 0.0797 | 0.1132 | 0.1539 | 0.043 | |
| 1995-1999 | 0.0632 | 0.0238 | 0.043 | 0.0403 | 0.074 | 0.0972 | 0.0675 | 0.0833 | 0.0503 | 0.0815 | 0.1119 | 0.1471 | 0.0399 | |
| 1995-2000 | 0.0605 | 0.0218 | 0.0415 | 0.0393 | 0.0678 | 0.093 | 0.0654 | 0.081 | 0.0504 | 0.0795 | 0.106 | 0.1511 | 0.0372 | |
| 1995-2001 | 0.0606 | 0.021 | 0.0391 | 0.0395 | 0.0664 | 0.0903 | 0.0641 | 0.0718 | 0.0504 | 0.0767 | 0.0985 | 0.1501 | 0.0371 | |
| 1996-1997 | 0.0735 | 0.0353 | 0.0524 | 0.0475 | 0.0843 | 0.1071 | 0.0803 | 0.0994 | 0.0564 | 0.0933 | 0.1239 | 0.1582 | 0.0512 | 0.0422 |
| 1996-1998 | 0.0694 | 0.0282 | 0.0481 | 0.045 | 0.0802 | 0.1059 | 0.0736 | 0.0907 | 0.0556 | 0.0857 | 0.118 | 0.1586 | 0.0438 | 0.0398 |
| 1996-1999 | 0.0647 | 0.0245 | 0.045 | 0.042 | 0.0787 | 0.1031 | 0.0696 | 0.0854 | 0.0532 | 0.0882 | 0.1144 | 0.1507 | 0.0406 | 0.036 |
| 1996-2000 | 0.0619 | 0.0229 | 0.0428 | 0.0407 | 0.0735 | 0.0985 | 0.0674 | 0.0818 | 0.0528 | 0.0854 | 0.1085 | 0.1556 | 0.0377 | 0.0351 |
| 1996-2001 | 0.0619 | 0.0221 | 0.0403 | 0.0405 | 0.0706 | 0.0927 | 0.0657 | 0.0729 | 0.0523 | 0.0821 | 0.0994 | 0.1548 | 0.0373 | 0.0346 |
| 1997-1998 | 0.0723 | 0.0289 | 0.0509 | 0.0483 | 0.0918 | 0.1148 | 0.0798 | 0.0951 | 0.0594 | 0.0964 | 0.1244 | 0.1727 | 0.0477 | 0.0453 |
| 1997-1999 | 0.0663 | 0.025 | 0.0463 | 0.0433 | 0.0889 | 0.1093 | 0.0742 | 0.0881 | 0.0561 | 0.0977 | 0.1158 | 0.1633 | 0.0433 | 0.0399 |
| 1997-2000 | 0.0634 | 0.0232 | 0.0435 | 0.0418 | 0.0832 | 0.1014 | 0.0708 | 0.084 | 0.0557 | 0.0951 | 0.1084 | 0.1703 | 0.0399 | 0.0376 |
| 1997-2001 | 0.0628 | 0.0223 | 0.0411 | 0.0417 | 0.0784 | 0.0943 | 0.0686 | 0.0745 | 0.0546 | 0.0919 | 0.0984 | 0.1723 | 0.0385 | 0.0368 |
| 1998-1999 | 0.0793 | 0.0272 | 0.0501 | 0.0446 | 0.0949 | 0.1145 | 0.0803 | 0.092 | 0.0631 | 0.1082 | 0.1204 | 0.1696 | 0.0469 | 0.0424 |
| 1998-2000 | 0.0762 | 0.0245 | 0.045 | 0.0432 | 0.0881 | 0.1049 | 0.0761 | 0.0839 | 0.061 | 0.1029 | 0.1096 | 0.1698 | 0.0423 | 0.0384 |
| 1998-2001 | 0.0749 | 0.0234 | 0.043 | 0.0425 | 0.0821 | 0.0973 | 0.073 | 0.0742 | 0.0587 | 0.0998 | 0.0994 | 0.1696 | 0.0402 | 0.037 |
| 1999-2000 | 0.0827 | 0.0305 | 0.0453 | 0.0458 | 0.0989 | 0.1095 | 0.0811 | 0.0836 | 0.0645 | 0.1128 | 0.1105 | 0.171 | 0.0445 | 0.044 |
| 1999-2001 | 0.0772 | 0.0273 | 0.0443 | 0.0436 | 0.0889 | 0.101 | 0.0763 | 0.0735 | 0.0618 | 0.1071 | 0.0987 | 0.1719 | 0.0421 | 0.0419 |
| 2000-2001 | 0.0788 | 0.0294 | 0.0516 | 0.0474 | 0.0957 | 0.1061 | 0.0814 | 0.0744 | 0.0657 | 0.1098 | 0.1032 | 0.1836 | 0.0445 | 0.0466 |

**Table 6. Shorrocks Mobility based on Theil for Different Time Horizons - Balanced sample over sub-periods**

| shor bal | Germany | Denmark | Netherlands | Belgium | Luxembourg | France | UK | Ireland | Italy | Greece | Spain | Portugal | Austria | Finland |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994-1995 | 0.0539 | 0.0994 | 0.0807 | 0.1044 | | 0.0989 | 0.0919 | 0.0588 | 0.0741 | 0.1125 | 0.0698 | 0.0496 | | |
| 1994-1996 | 0.0749 | 0.1588 | 0.1002 | 0.1325 | | 0.1260 | 0.1332 | 0.1054 | 0.1027 | 0.1285 | 0.0964 | 0.0689 | | |
| 1994-1997 | 0.0912 | 0.1922 | 0.1161 | 0.1543 | | 0.1328 | 0.1471 | 0.1178 | 0.1240 | 0.1489 | 0.1096 | 0.0769 | | |
| 1994-1998 | 0.1021 | 0.2152 | 0.1316 | 0.1576 | | 0.1313 | 0.1637 | 0.1335 | 0.1358 | 0.1601 | 0.1173 | 0.0816 | | |
| 1994-1999 | 0.1115 | 0.2333 | 0.1460 | 0.1698 | | 0.1305 | 0.1688 | 0.1475 | 0.1418 | 0.1664 | 0.1221 | 0.0795 | | |
| 1994-2000 | 0.1170 | 0.2555 | 0.1580 | 0.1772 | | 0.1343 | 0.1799 | 0.1655 | 0.1451 | 0.1745 | 0.1286 | 0.0800 | | |
| 1994-2001 | 0.1240 | 0.2670 | 0.1729 | 0.1850 | | 0.1348 | 0.1857 | 0.1757 | 0.1489 | 0.1803 | 0.1321 | 0.0932 | | |
| 1995-1996 | 0.0451 | 0.1123 | 0.0557 | 0.0789 | 0.0581 | 0.0676 | 0.0955 | 0.0728 | 0.0635 | 0.0670 | 0.0662 | 0.0515 | 0.1159 | |
| 1995-1997 | 0.0723 | 0.1592 | 0.0925 | 0.1195 | 0.0874 | 0.0895 | 0.1215 | 0.0924 | 0.0966 | 0.1088 | 0.0869 | 0.0632 | 0.1690 | |
| 1995-1998 | 0.0866 | 0.1893 | 0.1157 | 0.1283 | 0.0922 | 0.0923 | 0.1409 | 0.1082 | 0.1140 | 0.1299 | 0.0991 | 0.0696 | 0.1793 | |
| 1995-1999 | 0.0983 | 0.2111 | 0.1343 | 0.1461 | 0.0948 | 0.0949 | 0.1497 | 0.1259 | 0.1225 | 0.1408 | 0.1061 | 0.0687 | 0.1894 | |
| 1995-2000 | 0.1051 | 0.2368 | 0.1484 | 0.1563 | 0.0992 | 0.1026 | 0.1631 | 0.1461 | 0.1273 | 0.1521 | 0.1139 | 0.0700 | 0.1932 | |
| 1995-2001 | 0.1129 | 0.2479 | 0.1642 | 0.1657 | 0.1036 | 0.1060 | 0.1689 | 0.1574 | 0.1326 | 0.1598 | 0.1188 | 0.0853 | 0.1979 | |
| 1996-1997 | 0.0540 | 0.1169 | 0.0724 | 0.0867 | 0.0563 | 0.0608 | 0.0811 | 0.0642 | 0.0662 | 0.0715 | 0.0644 | 0.0339 | 0.1151 | 0.1004 |
| 1996-1998 | 0.0744 | 0.1634 | 0.0994 | 0.1049 | 0.0727 | 0.0715 | 0.1155 | 0.0854 | 0.0952 | 0.1045 | 0.0855 | 0.0508 | 0.1348 | 0.1501 |
| 1996-1999 | 0.0882 | 0.1900 | 0.1206 | 0.1308 | 0.0796 | 0.0792 | 0.1301 | 0.1083 | 0.1078 | 0.1192 | 0.0957 | 0.0536 | 0.1528 | 0.1728 |
| 1996-2000 | 0.0962 | 0.2200 | 0.1360 | 0.1419 | 0.0863 | 0.0891 | 0.1471 | 0.1321 | 0.1141 | 0.1331 | 0.1049 | 0.0585 | 0.1602 | 0.1886 |
| 1996-2001 | 0.1046 | 0.2305 | 0.1526 | 0.1520 | 0.0918 | 0.0935 | 0.1546 | 0.1441 | 0.1207 | 0.1420 | 0.1115 | 0.0774 | 0.1682 | 0.2184 |
| 1997-1998 | 0.0528 | 0.1019 | 0.0597 | 0.0605 | 0.0570 | 0.0405 | 0.0662 | 0.0525 | 0.0659 | 0.0695 | 0.0585 | 0.0312 | 0.0730 | 0.1031 |
| 1997-1999 | 0.0709 | 0.1424 | 0.0914 | 0.1047 | 0.0689 | 0.0595 | 0.0926 | 0.0845 | 0.0850 | 0.0920 | 0.0810 | 0.0375 | 0.1110 | 0.1366 |
| 1997-2000 | 0.0821 | 0.1816 | 0.1151 | 0.1207 | 0.0766 | 0.0738 | 0.1162 | 0.1128 | 0.0956 | 0.1099 | 0.0926 | 0.0471 | 0.1286 | 0.1564 |
| 1997-2001 | 0.0924 | 0.1944 | 0.1349 | 0.1338 | 0.0829 | 0.0798 | 0.1269 | 0.1271 | 0.1047 | 0.1221 | 0.1024 | 0.0702 | 0.1404 | 0.1922 |
| 1998-1999 | 0.0442 | 0.0950 | 0.0691 | 0.0779 | 0.0344 | 0.0393 | 0.0696 | 0.0613 | 0.0501 | 0.0503 | 0.0524 | 0.0216 | 0.0678 | 0.0885 |
| 1998-2000 | 0.0622 | 0.1575 | 0.1025 | 0.1030 | 0.0507 | 0.0587 | 0.1014 | 0.1001 | 0.0692 | 0.0772 | 0.0738 | 0.0359 | 0.0982 | 0.1222 |
| 1998-2001 | 0.0779 | 0.1732 | 0.1243 | 0.1172 | 0.0621 | 0.0676 | 0.1134 | 0.1171 | 0.0836 | 0.0958 | 0.0894 | 0.0629 | 0.1131 | 0.1689 |
| 1999-2000 | 0.0466 | 0.1136 | 0.0843 | 0.0672 | 0.0374 | 0.0447 | 0.0609 | 0.0762 | 0.0483 | 0.0498 | 0.0539 | 0.0221 | 0.0682 | 0.0796 |
| 1999-2001 | 0.0681 | 0.1398 | 0.1122 | 0.0891 | 0.0525 | 0.0580 | 0.0844 | 0.1033 | 0.0707 | 0.0794 | 0.0809 | 0.0522 | 0.0950 | 0.1376 |
| 2000-2001 | 0.0512 | 0.0971 | 0.0794 | 0.0550 | 0.0368 | 0.0425 | 0.0543 | 0.0679 | 0.0493 | 0.0585 | 0.0623 | 0.0419 | 0.0579 | 0.1066 |

**Table 7. Shorrocks Mobility based on Theil for Different Time Horizons - unbalanced sample over sub-periods**

| shor unbal | Germany | Denmark | Netherlands | Belgium | Luxembourg | France | UK | Ireland | Italy | Greece | Spain | Portugal | Austria | Finland |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994-1995 | 0.0525 | 0.1081 | 0.0777 | 0.1061 | | 0.1072 | 0.0884 | 0.0773 | 0.0852 | 0.1298 | 0.0652 | 0.0479 | | |
| 1994-1996 | 0.0863 | 0.1557 | 0.0966 | 0.1300 | | 0.1304 | 0.1277 | 0.1160 | 0.1056 | 0.1452 | 0.0926 | 0.0685 | | |
| 1994-1997 | 0.0934 | 0.1859 | 0.1107 | 0.1547 | | 0.1409 | 0.1488 | 0.1284 | 0.1224 | 0.1561 | 0.1017 | 0.0793 | | |
| 1994-1998 | 0.0921 | 0.2174 | 0.1266 | 0.1589 | | 0.1404 | 0.1651 | 0.1458 | 0.1368 | 0.1679 | 0.1073 | 0.0803 | | |
| 1994-1999 | 0.1076 | 0.2345 | 0.1412 | 0.1708 | | 0.1410 | 0.1717 | 0.1601 | 0.1451 | 0.1686 | 0.1085 | 0.0795 | | |
| 1994-2000 | 0.1150 | 0.2603 | 0.1498 | 0.1865 | | 0.1366 | 0.1797 | 0.1652 | 0.1452 | 0.1753 | 0.1199 | 0.0798 | | |
| 1994-2001 | 0.1240 | 0.2670 | 0.1729 | 0.1850 | | 0.1348 | 0.1857 | 0.1757 | 0.1489 | 0.1803 | 0.1321 | 0.0932 | | |
| 1995-1996 | 0.0752 | 0.1051 | 0.0595 | 0.0775 | 0.0508 | 0.0774 | 0.0901 | 0.0739 | 0.0682 | 0.0727 | 0.0647 | 0.0432 | 0.1077 | |
| 1995-1997 | 0.0898 | 0.1533 | 0.0960 | 0.1217 | 0.0764 | 0.1053 | 0.1187 | 0.0949 | 0.0990 | 0.1139 | 0.0811 | 0.0640 | 0.1497 | |
| 1995-1998 | 0.0828 | 0.1905 | 0.1147 | 0.1303 | 0.0832 | 0.1051 | 0.1433 | 0.1131 | 0.1174 | 0.1397 | 0.0907 | 0.0722 | 0.1673 | |
| 1995-1999 | 0.0999 | 0.2192 | 0.1336 | 0.1484 | 0.0885 | 0.1062 | 0.1564 | 0.1294 | 0.1315 | 0.1435 | 0.0960 | 0.0747 | 0.1769 | |
| 1995-2000 | 0.1086 | 0.2409 | 0.1438 | 0.1650 | 0.0998 | 0.1063 | 0.1656 | 0.1509 | 0.1321 | 0.1484 | 0.1077 | 0.0767 | 0.1931 | |
| 1995-2001 | 0.1162 | 0.2461 | 0.1677 | 0.1669 | 0.1036 | 0.1065 | 0.1762 | 0.1644 | 0.1340 | 0.1553 | 0.1194 | 0.0927 | 0.1979 | |
| 1996-1997 | 0.0576 | 0.0997 | 0.0737 | 0.0903 | 0.0547 | 0.0710 | 0.0816 | 0.0542 | 0.0748 | 0.0805 | 0.0585 | 0.0396 | 0.0913 | 0.1109 |
| 1996-1998 | 0.0699 | 0.1692 | 0.0982 | 0.1033 | 0.0700 | 0.0819 | 0.1183 | 0.0870 | 0.1012 | 0.1154 | 0.0787 | 0.0522 | 0.1206 | 0.1495 |
| 1996-1999 | 0.0896 | 0.1996 | 0.1238 | 0.1306 | 0.0791 | 0.0920 | 0.1369 | 0.1110 | 0.1185 | 0.1204 | 0.0892 | 0.0586 | 0.1442 | 0.1734 |
| 1996-2000 | 0.0998 | 0.2265 | 0.1367 | 0.1491 | 0.0892 | 0.0926 | 0.1538 | 0.1394 | 0.1195 | 0.1312 | 0.1012 | 0.0621 | 0.1674 | 0.1879 |
| 1996-2001 | 0.1075 | 0.2357 | 0.1635 | 0.1523 | 0.0935 | 0.0954 | 0.1663 | 0.1513 | 0.1238 | 0.1377 | 0.1136 | 0.0810 | 0.1755 | 0.2184 |
| 1997-1998 | 0.0498 | 0.1203 | 0.0706 | 0.0780 | 0.0459 | 0.0563 | 0.0738 | 0.0652 | 0.0647 | 0.0790 | 0.0556 | 0.0309 | 0.0718 | 0.0977 |
| 1997-1999 | 0.0747 | 0.1670 | 0.1034 | 0.1095 | 0.0603 | 0.0726 | 0.1098 | 0.0955 | 0.0937 | 0.0986 | 0.0771 | 0.0416 | 0.1072 | 0.1464 |
| 1997-2000 | 0.0854 | 0.2006 | 0.1218 | 0.1305 | 0.0719 | 0.0801 | 0.1249 | 0.1231 | 0.0992 | 0.1136 | 0.0938 | 0.0515 | 0.1408 | 0.1651 |
| 1997-2001 | 0.0966 | 0.2118 | 0.1456 | 0.1365 | 0.0788 | 0.0864 | 0.1377 | 0.1356 | 0.1080 | 0.1229 | 0.1110 | 0.0702 | 0.1532 | 0.1953 |
| 1998-1999 | 0.0428 | 0.1161 | 0.0699 | 0.0811 | 0.0318 | 0.0494 | 0.0784 | 0.0679 | 0.0662 | 0.0563 | 0.0554 | 0.0253 | 0.0647 | 0.1010 |
| 1998-2000 | 0.0583 | 0.1759 | 0.1074 | 0.1066 | 0.0487 | 0.0674 | 0.1035 | 0.1084 | 0.0814 | 0.0813 | 0.0777 | 0.0438 | 0.1087 | 0.1354 |
| 1998-2001 | 0.0715 | 0.1923 | 0.1352 | 0.1190 | 0.0599 | 0.0760 | 0.1221 | 0.1317 | 0.0955 | 0.0953 | 0.1007 | 0.0654 | 0.1267 | 0.1748 |
| 1999-2000 | 0.0437 | 0.1136 | 0.0869 | 0.0714 | 0.0408 | 0.0476 | 0.0716 | 0.0778 | 0.0562 | 0.0469 | 0.0615 | 0.0301 | 0.0773 | 0.1052 |
| 1999-2001 | 0.0630 | 0.1472 | 0.1239 | 0.0938 | 0.0525 | 0.0614 | 0.1005 | 0.1142 | 0.0792 | 0.0714 | 0.0966 | 0.0552 | 0.1033 | 0.1494 |
| 2000-2001 | 0.0455 | 0.1079 | 0.0824 | 0.0569 | 0.0420 | 0.0554 | 0.0725 | 0.0783 | 0.0604 | 0.0582 | 0.0781 | 0.0400 | 0.0620 | 0.1141 |

**Table 8. Fields Mobility based on Theil for Different Time Horizons - Balanced sample over sub-periods**

| Fields bal | Germany | Denmark | Netherlands | Belgium | Luxembourg | France | UK | Ireland | Italy | Greece | Spain | Portugal | Austria | Finland |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994-1995 | 0.0750 | 0.1419 | 0.1012 | 0.1772 | | 0.1277 | 0.1178 | 0.1042 | 0.0913 | 0.1222 | 0.1155 | 0.0524 | | |
| 1994-1996 | 0.0917 | 0.1964 | 0.1002 | 0.2087 | | 0.1843 | 0.1585 | 0.2116 | 0.1276 | 0.1307 | 0.1354 | 0.0236 | | |
| 1994-1997 | 0.1191 | 0.2673 | 0.1326 | 0.2192 | | 0.2017 | 0.1868 | 0.2557 | 0.1634 | 0.1415 | 0.1392 | 0.0180 | | |
| 1994-1998 | 0.1286 | 0.3032 | 0.1513 | 0.2185 | | 0.2091 | 0.2086 | 0.2930 | 0.1534 | 0.1568 | 0.1372 | 0.0286 | | |
| 1994-1999 | 0.1378 | 0.3347 | 0.1642 | 0.2345 | | 0.2175 | 0.2126 | 0.3200 | 0.1504 | 0.1574 | 0.1405 | 0.0225 | | |
| 1994-2000 | 0.1476 | 0.3607 | 0.1801 | 0.2331 | | 0.2331 | 0.2129 | 0.3560 | 0.1432 | 0.1726 | 0.1367 | 0.0093 | | |
| 1994-2001 | 0.1533 | 0.3762 | 0.1751 | 0.2349 | | 0.2397 | 0.2161 | 0.3823 | 0.1379 | 0.1770 | 0.1485 | -0.0067 | | |
| 1995-1996 | 0.0281 | 0.0862 | 0.0116 | 0.0475 | 0.1209 | 0.1036 | 0.0827 | 0.1542 | 0.0676 | 0.0500 | 0.0338 | -0.0219 | 0.1255 | |
| 1995-1997 | 0.0690 | 0.1866 | 0.0738 | 0.0596 | 0.1578 | 0.1303 | 0.1258 | 0.2019 | 0.1178 | 0.0788 | 0.0357 | -0.0205 | 0.1790 | |
| 1995-1998 | 0.0796 | 0.2302 | 0.1006 | 0.0571 | 0.1629 | 0.1383 | 0.1496 | 0.2369 | 0.1029 | 0.1064 | 0.0326 | -0.0018 | 0.2120 | |
| 1995-1999 | 0.0900 | 0.2670 | 0.1168 | 0.0795 | 0.1634 | 0.1485 | 0.1549 | 0.2641 | 0.0994 | 0.1108 | 0.0373 | -0.0047 | 0.2410 | |
| 1995-2000 | 0.1015 | 0.2961 | 0.1358 | 0.0764 | 0.1653 | 0.1679 | 0.1539 | 0.3026 | 0.0910 | 0.1311 | 0.0320 | -0.0175 | 0.2508 | |
| 1995-2001 | 0.1072 | 0.3108 | 0.1279 | 0.0777 | 0.1670 | 0.1760 | 0.1561 | 0.3300 | 0.0857 | 0.1374 | 0.0476 | -0.0333 | 0.2590 | |
| 1996-1997 | 0.0815 | 0.2055 | 0.1250 | 0.0580 | 0.0351 | 0.0504 | 0.1125 | 0.0705 | 0.0908 | 0.0593 | 0.0510 | 0.0500 | 0.1116 | 0.1168 |
| 1996-1998 | 0.0967 | 0.2619 | 0.1572 | 0.0710 | 0.0387 | 0.0614 | 0.1509 | 0.1037 | 0.0721 | 0.1047 | 0.0609 | 0.0917 | 0.1628 | 0.1775 |
| 1996-1999 | 0.1092 | 0.3017 | 0.1751 | 0.1071 | 0.0362 | 0.0752 | 0.1601 | 0.1317 | 0.0706 | 0.1129 | 0.0734 | 0.0972 | 0.2031 | 0.1754 |
| 1996-2000 | 0.1228 | 0.3310 | 0.1954 | 0.1058 | 0.0363 | 0.0981 | 0.1596 | 0.1774 | 0.0622 | 0.1381 | 0.0707 | 0.0903 | 0.2151 | 0.1905 |
| 1996-2001 | 0.1287 | 0.3432 | 0.1855 | 0.1089 | 0.0364 | 0.1062 | 0.1629 | 0.2076 | 0.0575 | 0.1458 | 0.0911 | 0.0784 | 0.2251 | 0.1797 |
| 1997-1998 | 0.0306 | 0.0753 | 0.0415 | 0.0661 | 0.0480 | 0.0460 | 0.0579 | 0.0683 | -0.0221 | 0.0927 | 0.0482 | 0.0622 | 0.1247 | 0.1136 |
| 1997-1999 | 0.0436 | 0.1248 | 0.0602 | 0.1272 | 0.0529 | 0.0745 | 0.0709 | 0.1041 | -0.0176 | 0.1062 | 0.0776 | 0.0650 | 0.1876 | 0.1079 |
| 1997-2000 | 0.0610 | 0.1589 | 0.0880 | 0.1293 | 0.0559 | 0.1048 | 0.0692 | 0.1583 | -0.0225 | 0.1380 | 0.0763 | 0.0557 | 0.2057 | 0.1272 |
| 1997-2001 | 0.0672 | 0.1699 | 0.0704 | 0.1356 | 0.0581 | 0.1145 | 0.0746 | 0.1923 | -0.0244 | 0.1483 | 0.1037 | 0.0400 | 0.2169 | 0.1130 |
| 1998-1999 | 0.0468 | 0.1193 | 0.0576 | 0.1018 | 0.0280 | 0.0513 | 0.0535 | 0.0601 | 0.0655 | 0.0241 | 0.0669 | -0.0004 | 0.0861 | 0.0222 |
| 1998-2000 | 0.0768 | 0.1751 | 0.1005 | 0.1042 | 0.0407 | 0.0897 | 0.0556 | 0.1317 | 0.0794 | 0.0699 | 0.0718 | -0.0172 | 0.1048 | 0.0615 |
| 1998-2001 | 0.0887 | 0.1897 | 0.0786 | 0.1090 | 0.0485 | 0.1007 | 0.0650 | 0.1701 | 0.0886 | 0.0841 | 0.1099 | -0.0403 | 0.1129 | 0.0477 |
| 1999-2000 | 0.0637 | 0.0926 | 0.1034 | 0.0184 | 0.0348 | 0.0682 | 0.0238 | 0.1254 | 0.0327 | 0.0878 | 0.0213 | -0.0121 | 0.0408 | 0.1128 |
| 1999-2001 | 0.0776 | 0.1151 | 0.0734 | 0.0277 | 0.0468 | 0.0793 | 0.0513 | 0.1748 | 0.0470 | 0.1115 | 0.0805 | -0.0378 | 0.0579 | 0.1015 |
| 2000-2001 | 0.0314 | 0.1008 | -0.0225 | 0.0582 | 0.0333 | 0.0273 | 0.0757 | 0.0812 | 0.0443 | 0.0289 | 0.1212 | -0.0216 | 0.0554 | -0.0216 |

**Table 9. Fields Mobility based on Theil for Different Time Horizons - Unbalanced sample over sub-periods**

| | Germany | Denmark | Netherlands | Belgium | Luxembourg | France | UK | Ireland | Italy | Greece | Spain | Portugal | Austria | Finland |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994-1995 | 0.0666 | 0.1678 | 0.0851 | 0.1702 | | 0.1532 | 0.1159 | 0.1272 | 0.0938 | 0.1314 | 0.0913 | 0.0568 | | |
| 1994-1996 | 0.1146 | 0.1994 | 0.0873 | 0.2046 | | 0.1939 | 0.1766 | 0.2325 | 0.1222 | 0.1502 | 0.12 | 0.0633 | | |
| 1994-1997 | 0.1289 | 0.2599 | 0.099 | 0.2014 | | 0.2223 | 0.2224 | 0.2785 | 0.1406 | 0.1496 | 0.1176 | 0.0638 | | |
| 1994-1998 | 0.1052 | 0.2722 | 0.115 | 0.2176 | | 0.2244 | 0.2154 | 0.3285 | 0.1221 | 0.1231 | 0.1399 | 0.0489 | | |
| 1994-1999 | 0.1208 | 0.3089 | 0.1402 | 0.2372 | | 0.2384 | 0.2244 | 0.3742 | 0.1409 | 0.1304 | 0.1403 | 0.0695 | | |
| 1994-2000 | 0.1413 | 0.3558 | 0.1602 | 0.2321 | | 0.2312 | 0.2228 | 0.3416 | 0.1453 | 0.167 | 0.1364 | 0.0484 | | |
| 1994-2001 | 0.1533 | 0.3762 | 0.1751 | 0.2349 | | 0.2397 | 0.2161 | 0.3823 | 0.1379 | 0.177 | 0.1485 | -0.0067 | | |
| 1995-1996 | 0.1099 | 0.1084 | 0.0526 | 0.0867 | 0.0801 | 0.1041 | 0.1021 | 0.122 | 0.0691 | 0.0841 | 0.057 | 0.0229 | 0.1304 | |
| 1995-1997 | 0.148 | 0.1781 | 0.0793 | 0.112 | 0.1185 | 0.1187 | 0.1442 | 0.1766 | 0.1073 | 0.0771 | 0.0558 | 0.0565 | 0.1896 | |
| 1995-1998 | 0.0936 | 0.2335 | 0.1159 | 0.1108 | 0.1348 | 0.1139 | 0.1841 | 0.222 | 0.0979 | 0.1122 | 0.0666 | 0.0486 | 0.2505 | |
| 1995-1999 | 0.1196 | 0.2991 | 0.1426 | 0.1399 | 0.1419 | 0.0871 | 0.1921 | 0.2488 | 0.1036 | 0.0714 | 0.069 | 0.0699 | 0.2258 | |
| 1995-2000 | 0.1311 | 0.3198 | 0.1611 | 0.1348 | 0.1605 | 0.1223 | 0.1681 | 0.3086 | 0.1137 | 0.0854 | 0.0665 | 0.0266 | 0.2389 | |
| 1995-2001 | 0.1351 | 0.3384 | 0.1488 | 0.1268 | 0.167 | 0.1537 | 0.1767 | 0.3537 | 0.1064 | 0.1106 | 0.0786 | -0.0093 | 0.259 | |
| 1996-1997 | 0.0675 | 0.1172 | 0.1106 | 0.0745 | 0.0774 | 0.0257 | 0.0977 | 0.0879 | 0.0866 | 0.0224 | 0.0591 | 0.0311 | 0.1005 | 0.1035 |
| 1996-1998 | 0.0845 | 0.2303 | 0.1546 | 0.0864 | 0.0886 | 0.0469 | 0.1519 | 0.1278 | 0.0853 | 0.091 | 0.0911 | 0.0508 | 0.1729 | 0.1319 |
| 1996-1999 | 0.113 | 0.2993 | 0.1917 | 0.1355 | 0.0766 | 0.0514 | 0.1856 | 0.1792 | 0.0822 | 0.0804 | 0.0978 | 0.0889 | 0.2138 | 0.1387 |
| 1996-2000 | 0.1273 | 0.3295 | 0.2202 | 0.1459 | 0.0954 | 0.0838 | 0.1962 | 0.2479 | 0.0825 | 0.081 | 0.1127 | 0.0819 | 0.2267 | 0.1718 |
| 1996-2001 | 0.1333 | 0.3475 | 0.23 | 0.1603 | 0.0987 | 0.103 | 0.197 | 0.2749 | 0.0891 | 0.103 | 0.1308 | 0.0628 | 0.2495 | 0.1797 |
| 1997-1998 | 0.0358 | 0.14 | 0.07 | 0.1123 | 0.0381 | 0.0903 | 0.0898 | 0.0694 | 0.0103 | 0.0938 | 0.0788 | 0.0141 | 0.1109 | 0.114 |
| 1997-1999 | 0.0479 | 0.1927 | 0.112 | 0.1488 | 0.059 | 0.1142 | 0.1264 | 0.145 | 0.0341 | 0.1041 | 0.1098 | 0.0154 | 0.1805 | 0.1433 |
| 1997-2000 | 0.0664 | 0.1785 | 0.1525 | 0.167 | 0.0664 | 0.1255 | 0.1272 | 0.2211 | 0.0298 | 0.1359 | 0.1377 | 0.0002 | 0.2255 | 0.1852 |
| 1997-2001 | 0.0845 | 0.1686 | 0.1332 | 0.1496 | 0.0872 | 0.1389 | 0.1332 | 0.2484 | 0.0493 | 0.0865 | 0.1563 | 0.0101 | 0.2568 | 0.1846 |
| 1998-1999 | 0.0557 | 0.122 | 0.1161 | 0.1055 | 0.0328 | 0.0578 | 0.0837 | 0.1194 | 0.0699 | 0.045 | 0.0705 | 0.0198 | 0.0999 | 0.0799 |
| 1998-2000 | 0.0799 | 0.1547 | 0.166 | 0.1275 | 0.0586 | 0.1113 | 0.1136 | 0.2005 | 0.0948 | 0.0738 | 0.1154 | 0.0262 | 0.148 | 0.1362 |
| 1998-2001 | 0.1057 | 0.1787 | 0.1569 | 0.1262 | 0.0829 | 0.1396 | 0.1314 | 0.2562 | 0.1045 | 0.0773 | 0.156 | 0.0168 | 0.1904 | 0.1325 |
| 1999-2000 | 0.0418 | 0.1398 | 0.1005 | 0.0615 | 0.0397 | 0.0971 | 0.0592 | 0.1234 | 0.0411 | 0.0607 | 0.0742 | -0.0236 | 0.0735 | 0.1216 |
| 1999-2001 | 0.0826 | 0.1958 | 0.0849 | 0.0672 | 0.0625 | 0.1176 | 0.0931 | 0.1839 | 0.0603 | 0.088 | 0.1497 | -0.0165 | 0.1347 | 0.1419 |
| 2000-2001 | 0.0529 | 0.1648 | -0.0183 | 0.05 | 0.0724 | 0.0665 | 0.1024 | 0.1278 | 0.0511 | 0.0497 | 0.1209 | 0.0284 | 0.0556 | 0.0227 |

**Table 10. Dominance relations in long term earnings mobility: Shorrocks and Fields Index**

| | Denmark | Netherlands | Belgium | Luxembourg* | France | UK | Ireland | Italy | Greece | Spain | Portugal | Austria* | Finland** | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Germany | < | < | < | > | < | < | < | < | < | < | > | < | < | Shorrocks |
| | < | < | < | < | < | < | < | > | < | > | > | < | < | Fields |
| Denmark | > | > | > | > | > | > | > | > | > | > | > | > | > | Shorrocks |
| | > | > | > | > | > | < | > | > | > | > | > | > | > | Fields |
| Netherlands | < | > | > | < | < | < | > | < | > | > | < | < | Shorrocks |
| | < | >[1] | < | < | < | > | < | > | > | > | < | < | Fields |
| Belgium | > | > | < | > | > | > | > | > | > | > | < | < | Shorrocks |
| | > | < | > | < | > | > | > | > | > | > | < | > | Fields |
| Luxembourg* | < | < | < | < | < | < | < | < | > | < | < | Shorrocks |
| | < | < | < | > | <[2] | > | > | < | < | < | < | Fields |
| France | < | < | < | < | > | > | > | > | < | < | Shorrocks |
| | > | < | > | > | > | > | > | > | < | > | Fields |
| UK | > | > | > | > | > | < | < | Shorrocks |
| | < | > | > | > | > | < | > | Fields |
| Ireland | > | < | > | > | < | < | Shorrocks |
| | > | > | > | > | > | > | Fields |
| Italy | < | > | > | < | < | Shorrocks |
| | < | < | > | < | < | Fields |
| Greece | > | > | < | < | Shorrocks |
| | > | > | < | < | Fields |
| Spain | > | < | < | Shorrocks |
| | > | < | < | Fields |
| Portugal | < | < | Shorrocks |
| | < | < | Fields |
| Austria* | < | Shorrocks |
| | > | Fields |
| Finland** | |

Note: The reading of the table goes from left to right.
(*) The comparison is based on 7-year period mobility
(**) The comparison is based on 7-year period mobility
(1) Based on the balanced approach. The reverse holds under the unbalanced approach
(2) Based on the balanced approach. Under the unbalanced approach, they are equal

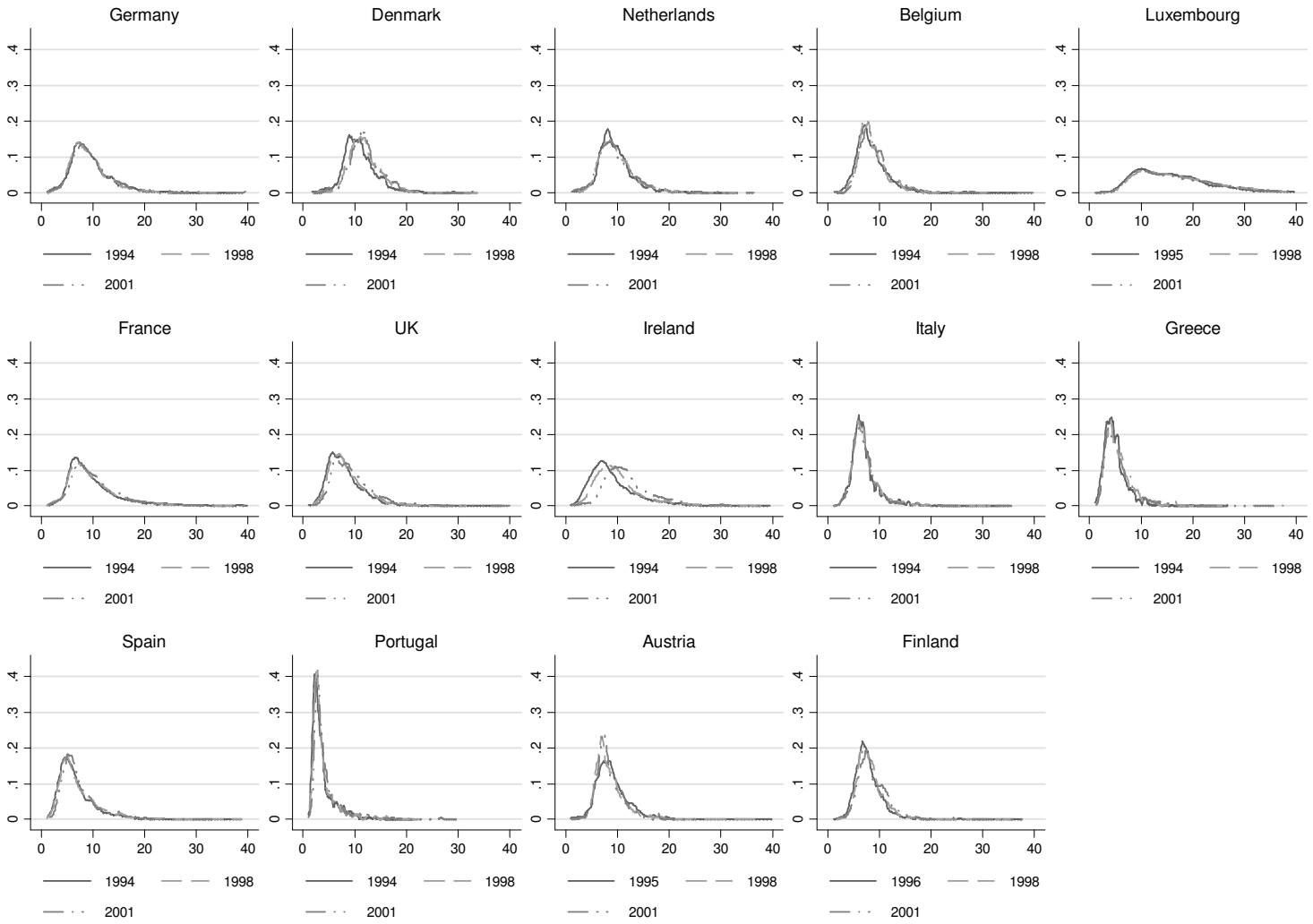


**Figure 1. Epanechinov Kernel Density Estimates for Selected Years17 - EU 15**

[17] The horizontal axis represents hourly earnings and the vertical axis the density.

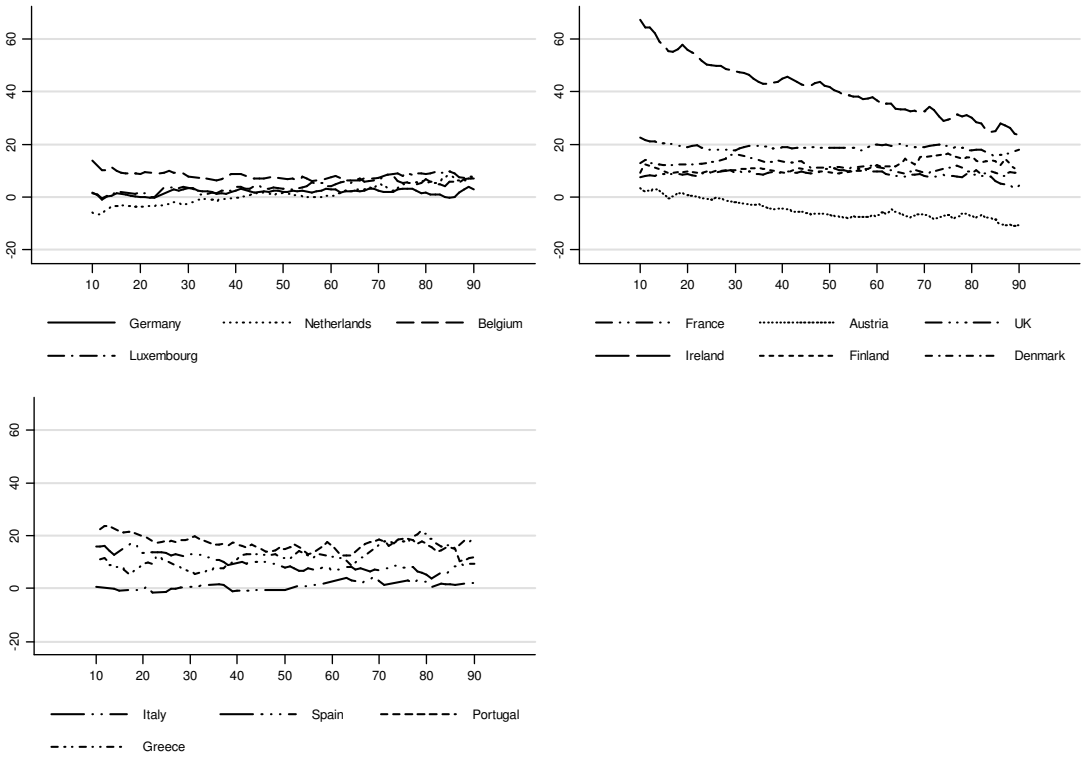


**Figure 2. Percentage Change in Mean Hourly Earnings by Percentiles Over The Sample Period**

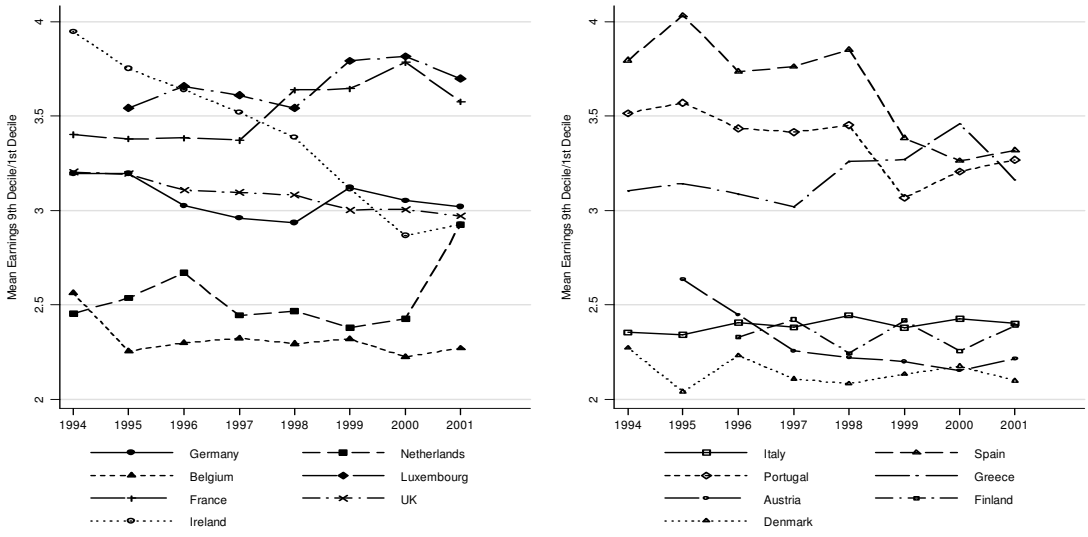


**Figure 3. Ratio between Mean Earnings at the 9th Decile and the 1st Decile**

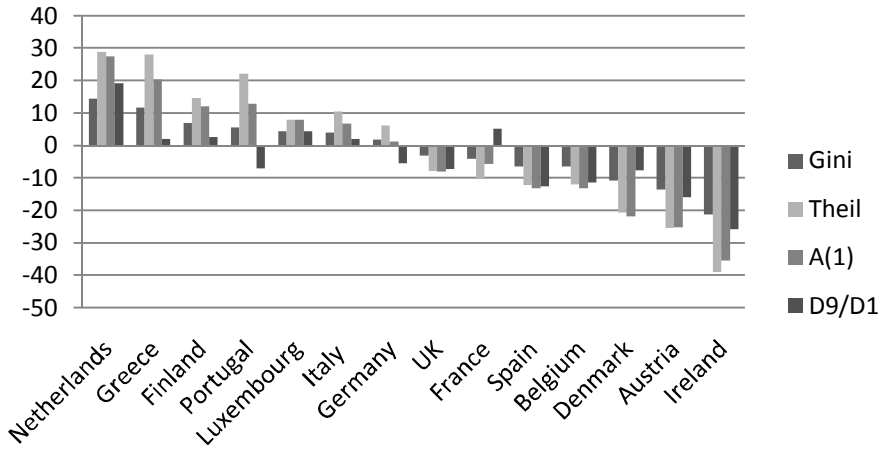


**Figure 4. Relative Change in Inequality over Time – Gini, Theil, Atkinson(1), D9/D118**

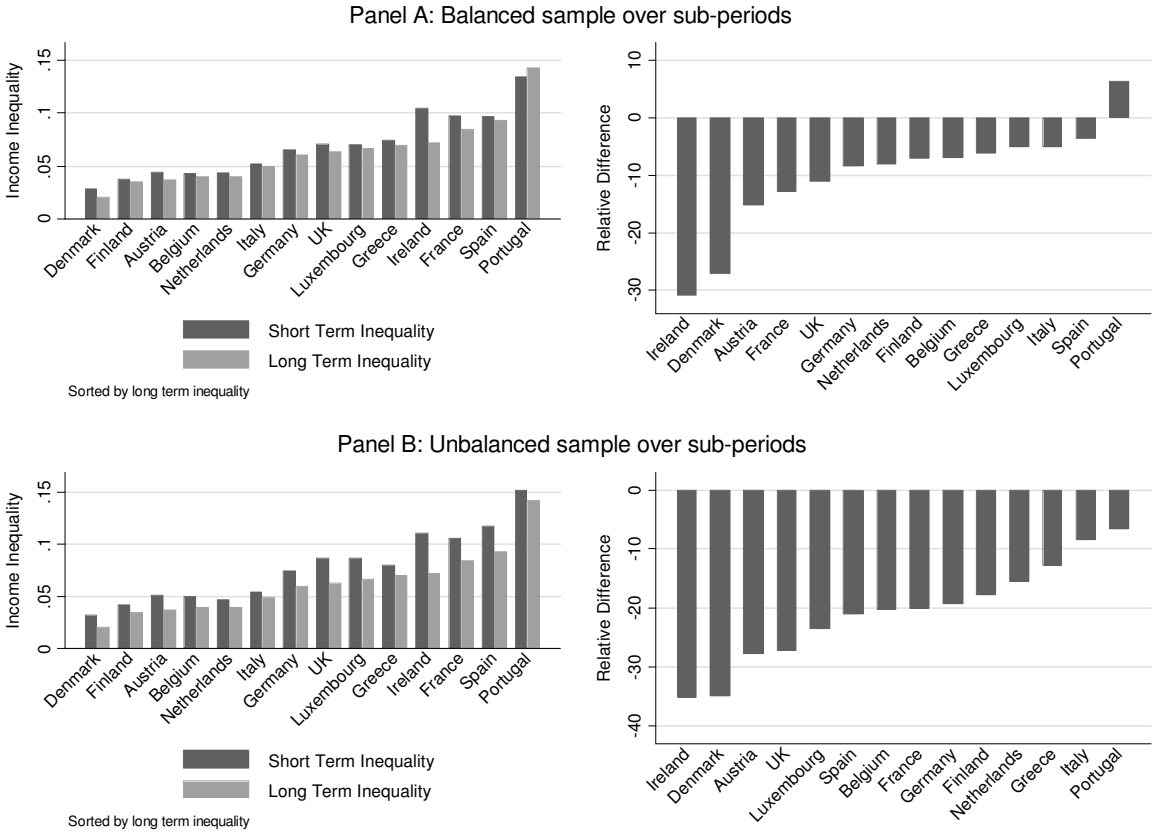


**Figure 5. Short and Long Term Income Inequality and their Relative Difference**

Note: 1.Short–term refers to inequality in average earnings measured over two years, meaning in the first and the second wave, and long-term refers to inequality in average earnings measured over the sample period.

2. The right graph in each panel illustrates the relative difference between short and long term inequality displayed in the left graphs.

[18] Countries are ranked based on Gini index.

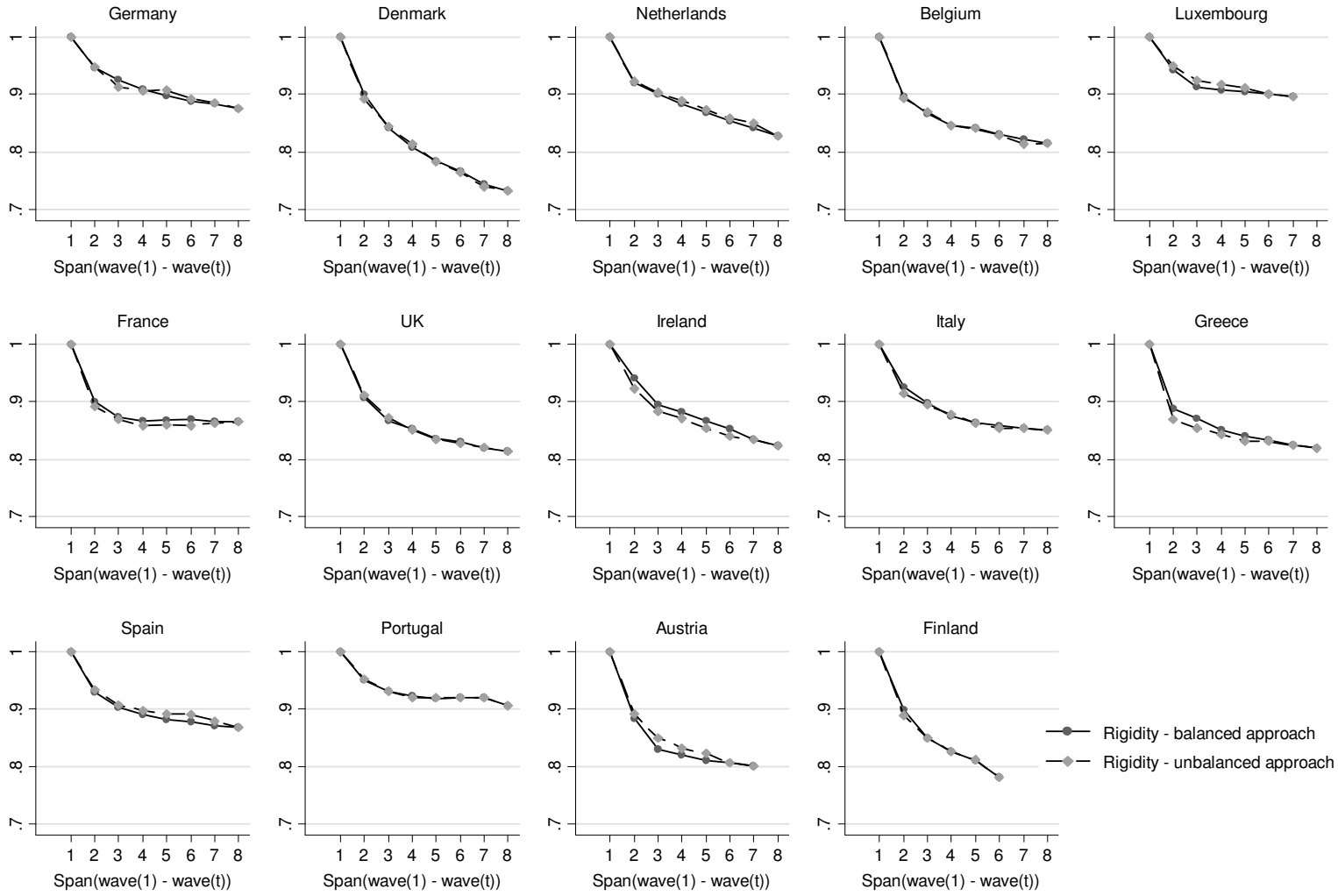


**Figure 6. Stability Profiles for Male Earnings by Selected Countries (based on Theil) – Balanced vs Unbalanced**

Note: The stability profile plots the rigidity index against the horizon over which the index is measured: 1-year rigidity = 1; 2-year rigidity = rigidity index over a horizon of 2 years, span wave(1)-wave(2); 8-year rigidity = rigidity index over a horizon of 8 years, span(wave(1)-wave(8))

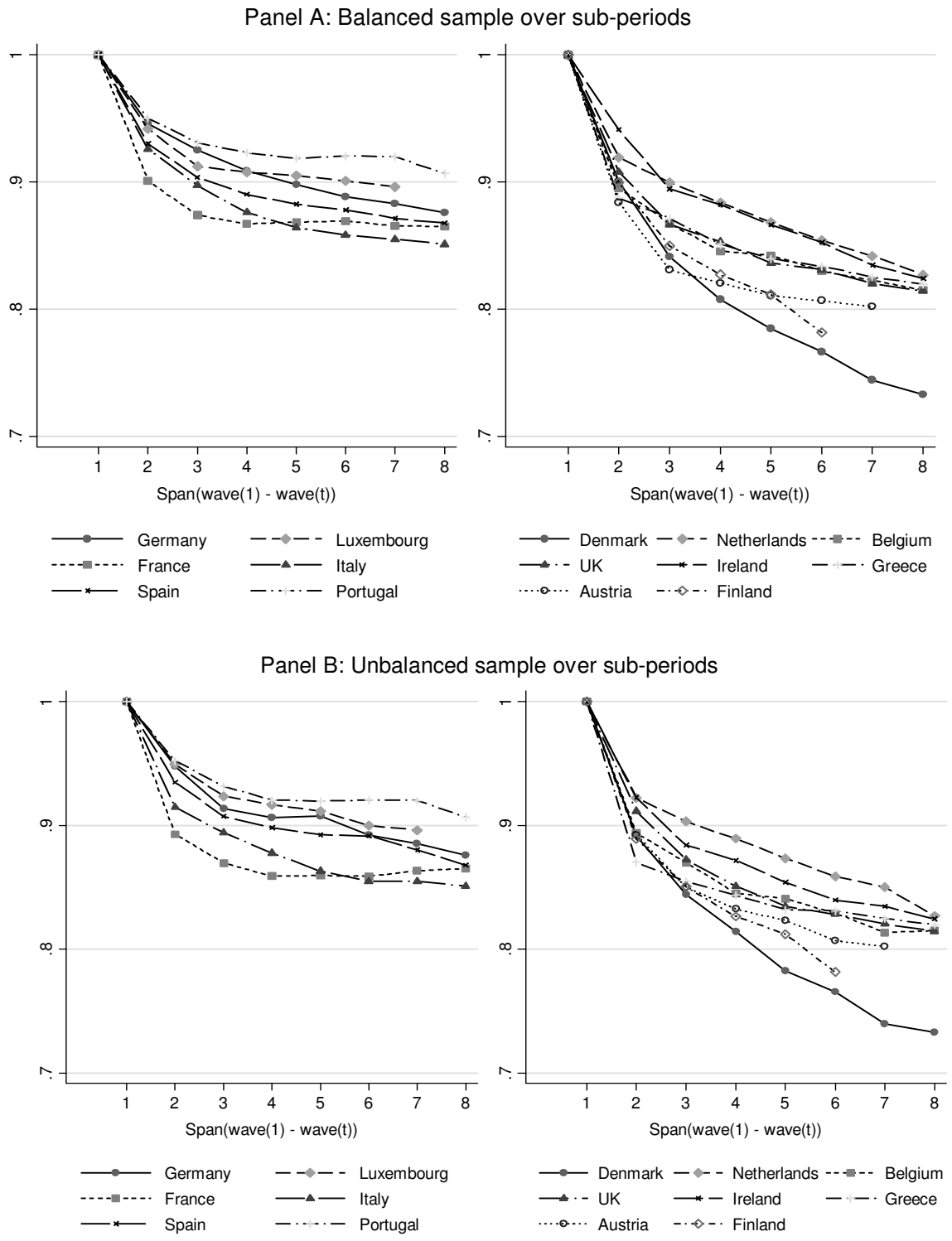


**Figure 7. Stability Profiles for Male Earnings for Selected Countries (based on Theil) - – Balanced vs Unbalanced**

Note: The stability profile plots the rigidity index against the horizon over which the index is measured: 1-year rigidity = 1; 2-year rigidity = rigidity index over a horizon of 2 years, span wave(1)-wave(2); 8-year rigidity = rigidity index over a horizon of 8 years, span(wave(1)-wave(8))

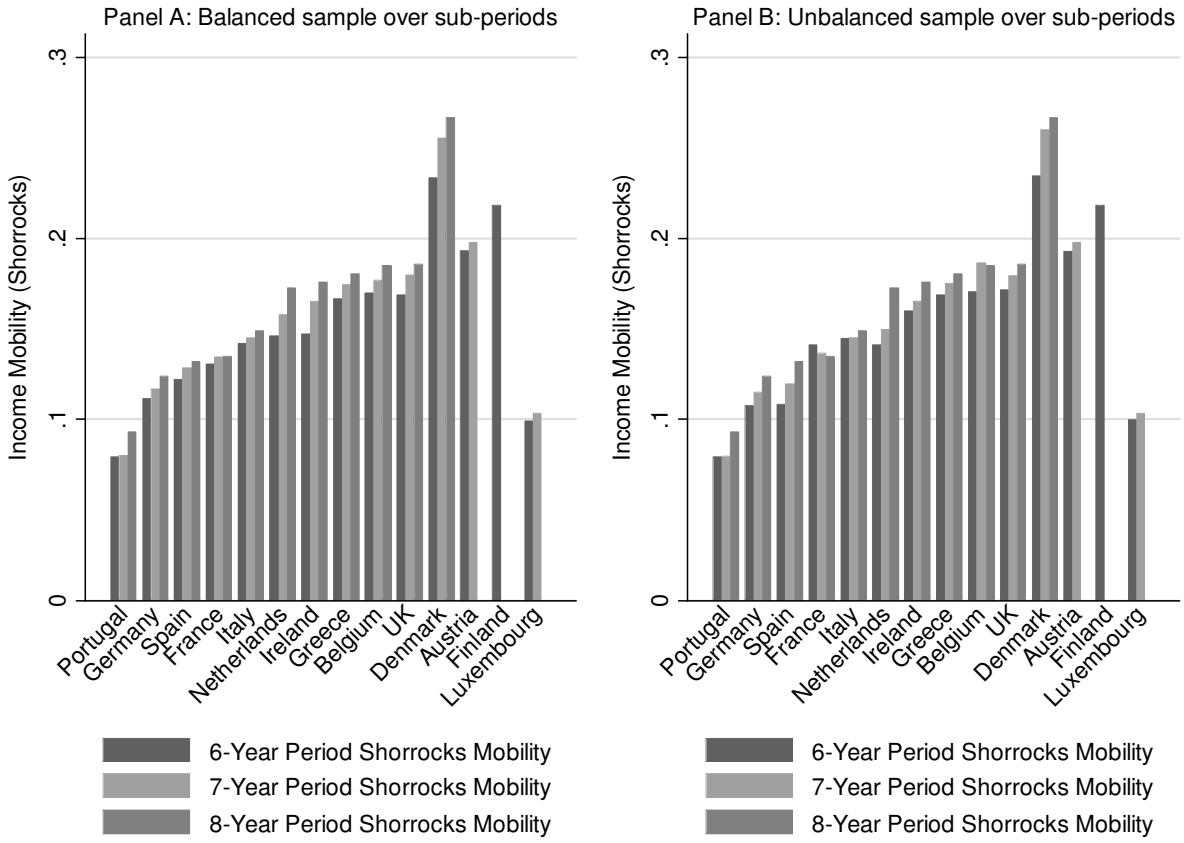


**Figure 8. Long-Term Earnings Mobility based on the Shorrocks Index**

Note: Ranked in an ascendant order based on the 8-year period mobility. Austria Finland and Luxembourg are displayed the last because the 8-year period mobility is missing.

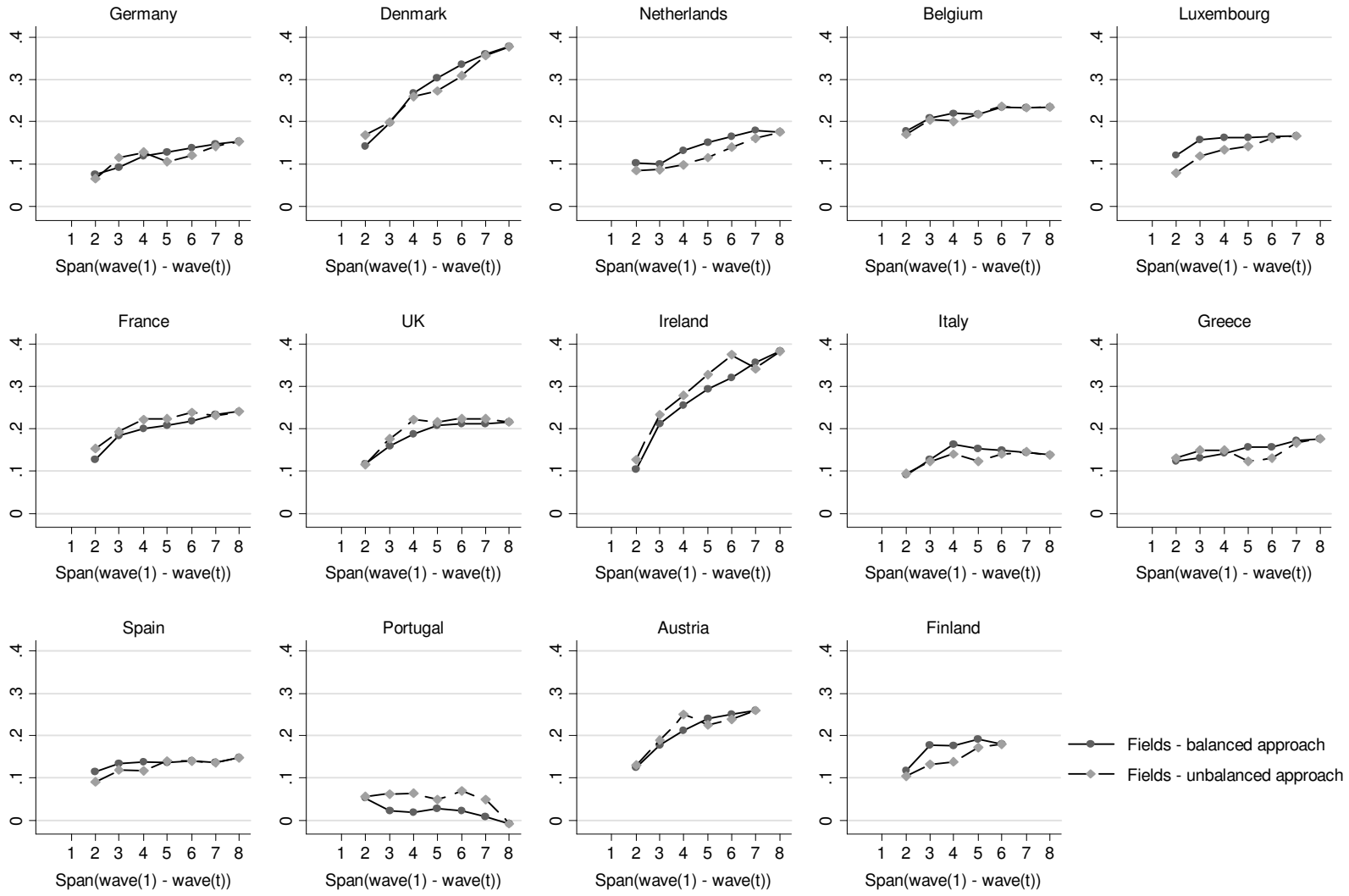


**Figure 9. Mobility Profile based on the Fields Index**

Note: The mobility profile plots the Fields index against the horizon over which the index is measured: 1-year mobility = 1; 2-year mobility = mobility index over a horizon of 2 years, span wave(1)-wave(2); 8-year mobility = mobility index over a horizon of 8 years, span(wave(1)-wave(8))

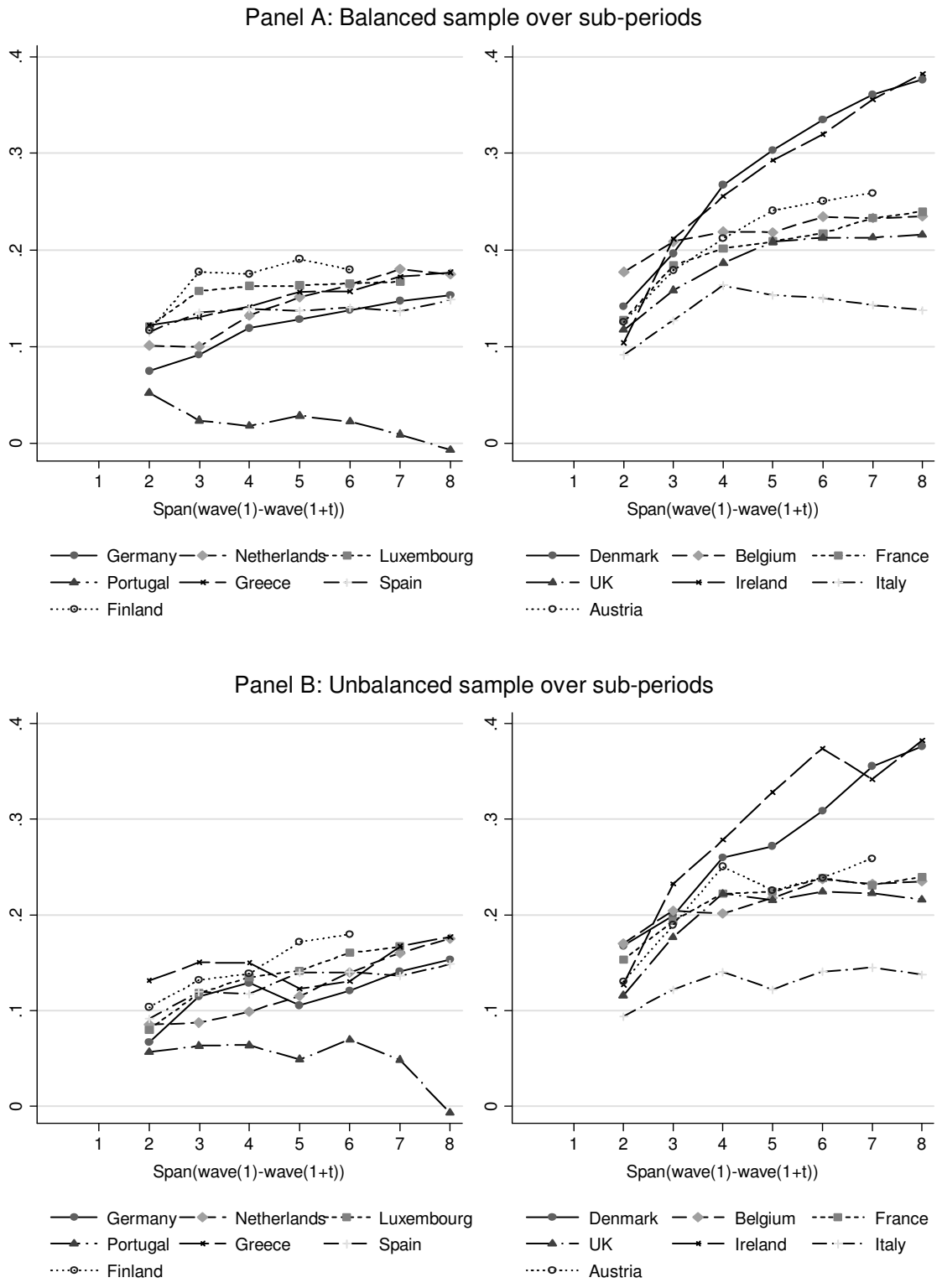


**Figure 10. Mobility Profile based on the Fields Index**

Note: The mobility profile plots the Fields index against the horizon over which the index is measured: 1-year mobility = 1; 2-year mobility = mobility index over a horizon of 2 years, span wave(1)-wave(2); 8-year mobility = mobility index over a horizon of 8 years, span(wave(1)-wave(8))

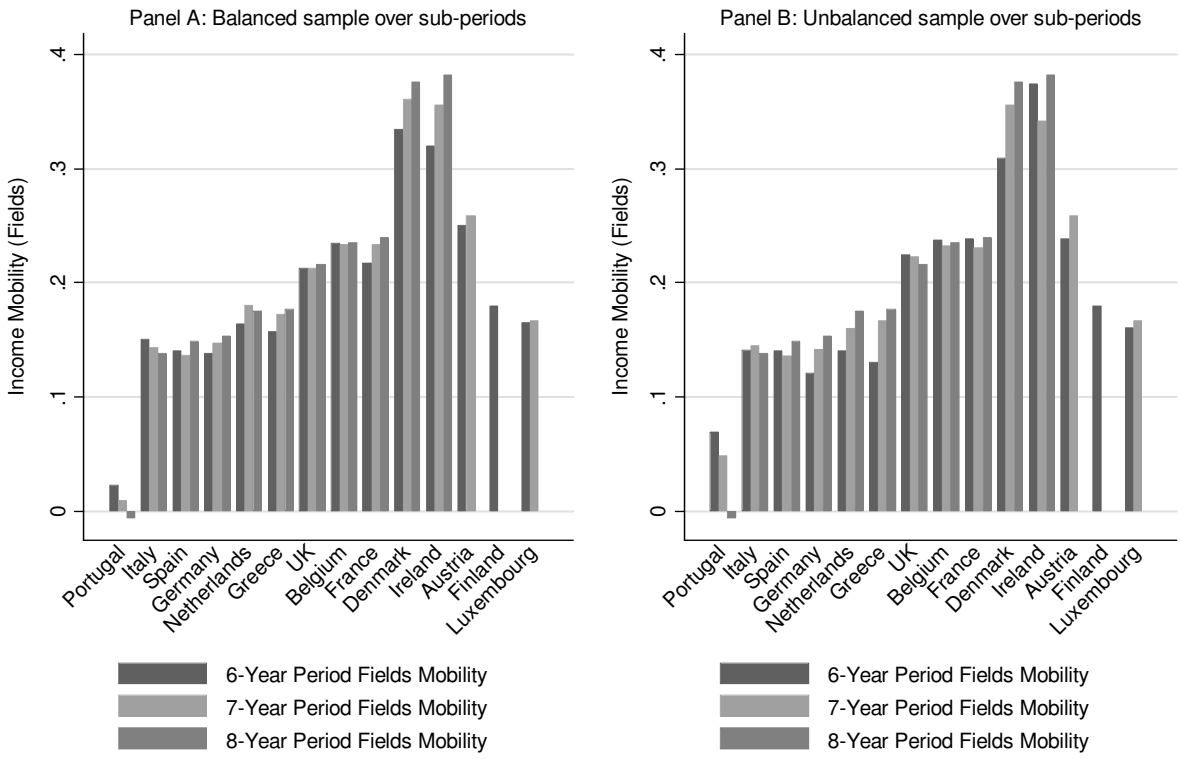


**Figure 11. Long-Term Earnings Mobility (Fields)**

Note: Ranked in an ascendant order based on the 8-year period mobility. Austria Finland and Luxembourg are displayed the last because the 8-year period mobility is missing.

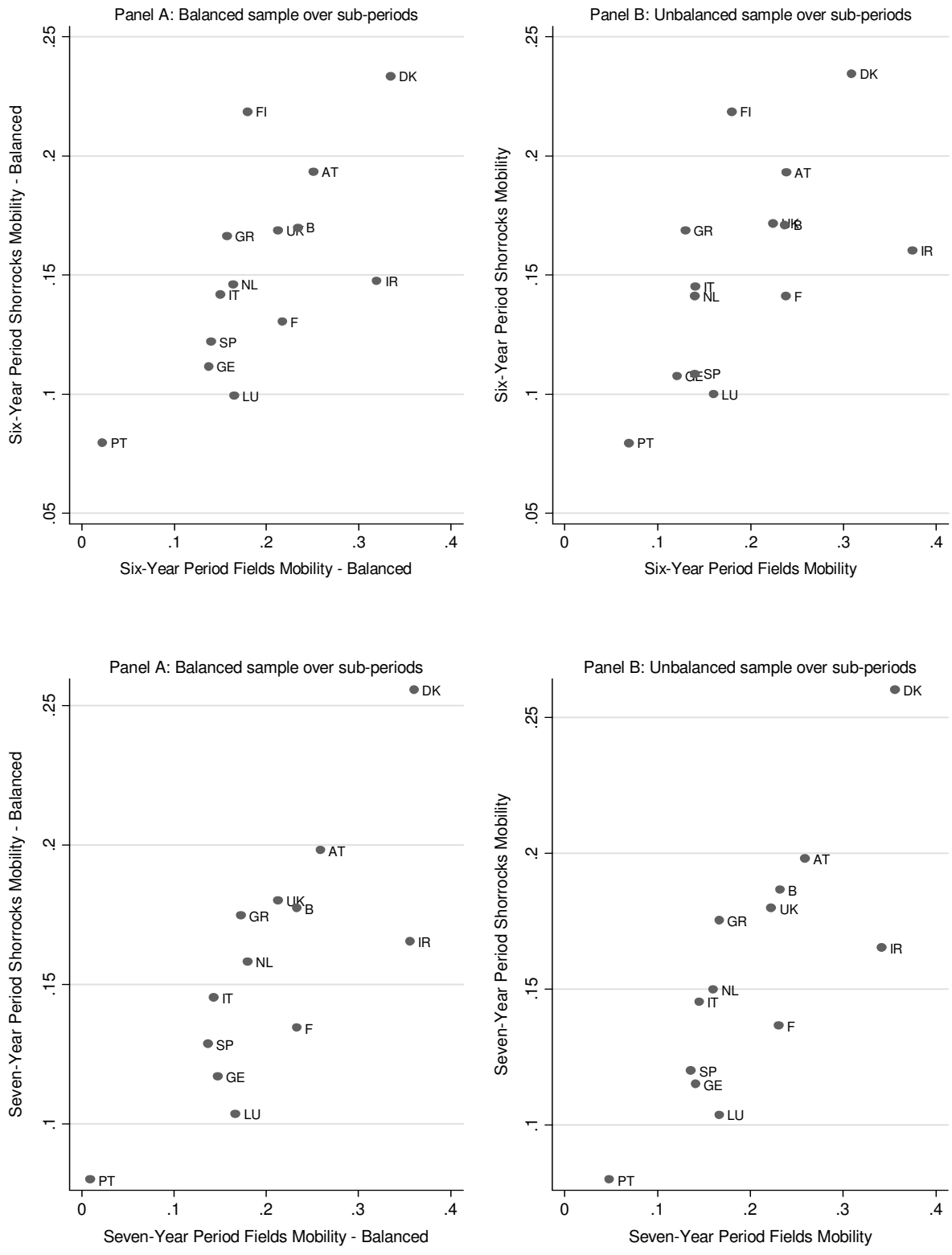


**Figure 12. Scatter plot of 6-year and 7-year period mobility: Shorrocks vs. Fields**

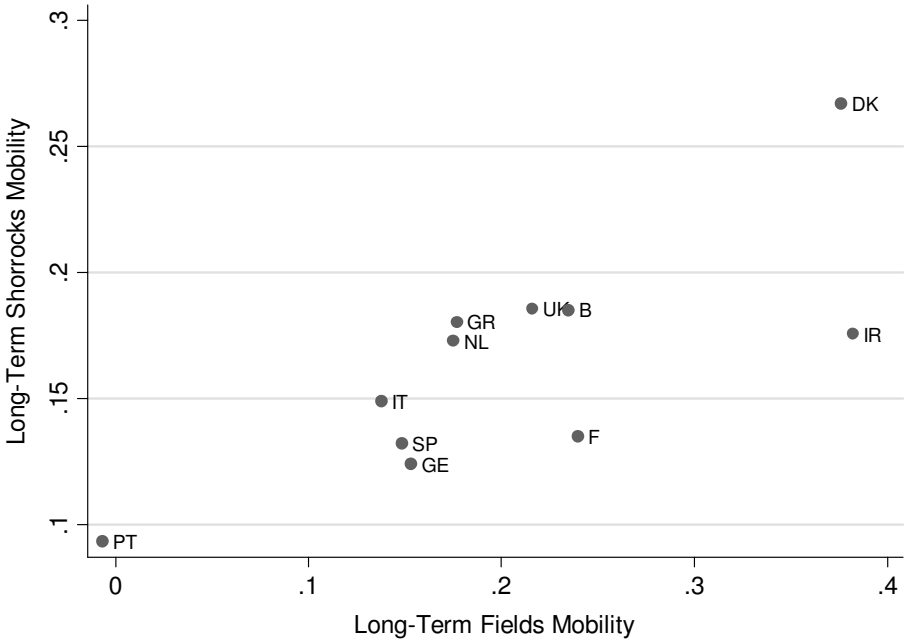


**Figure 13. Scatter plot of 8-year period mobility: Shorrocks vs. Fields**

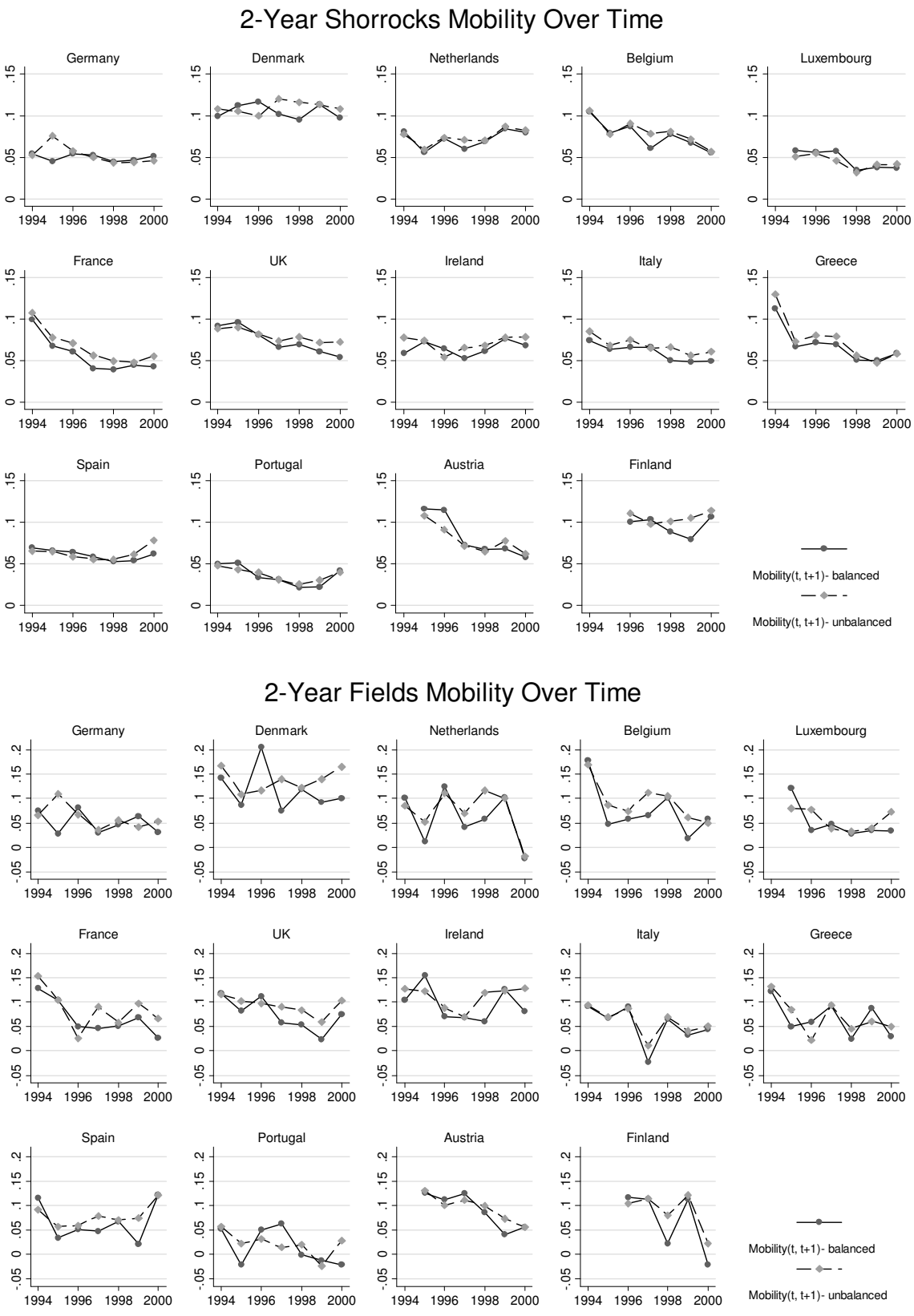


**Figure 14. The Evolution of 2-Year Period Mobility**

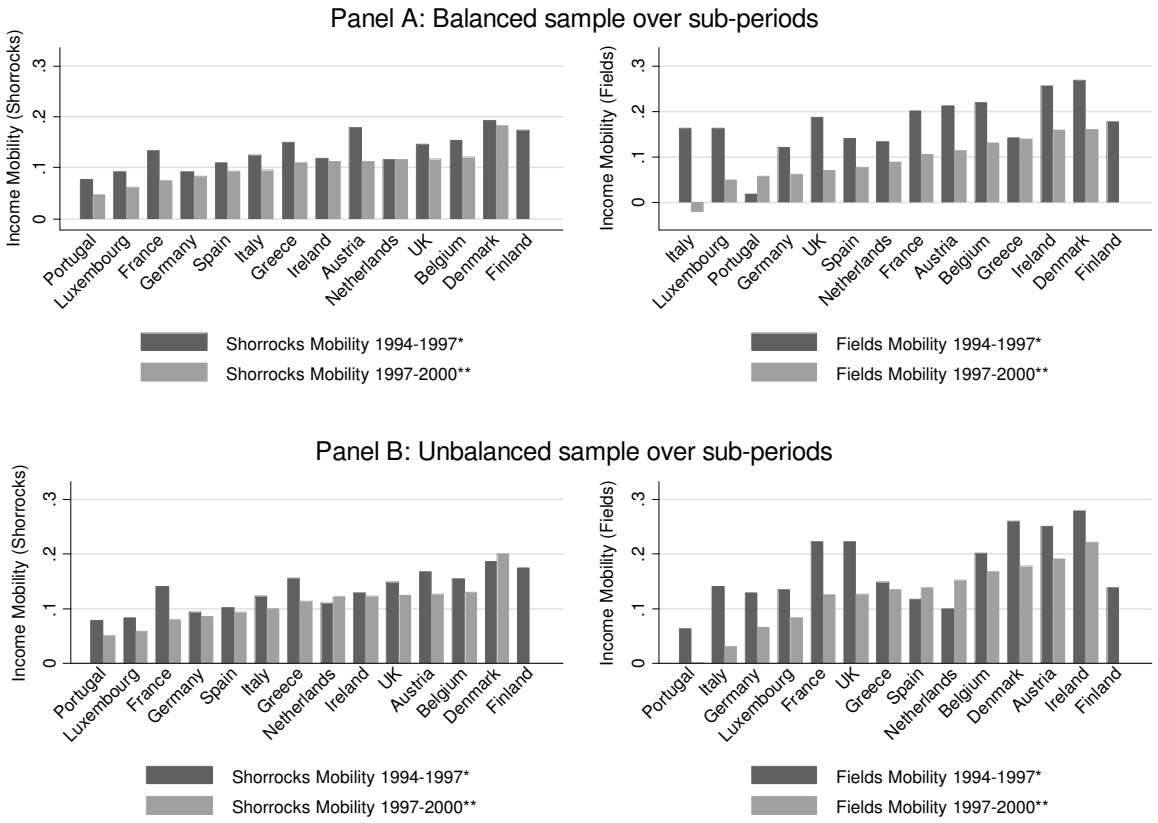


**Figure 15. The Evolution of Long-Term Mobility Over Time**

Note: (*) For Luxembourg and Austria the figure displays the value for 1995-1998, and for Finland for 1996-1999

(**) For Luxembourg and Austria the figure displays the value for 1998-2001

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