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## How to Combine the Entry of Young People in the Labour Market with the Retention of Older Workers?

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## **ABSTRACT**

### **How to Combine the Entry of Young People in the Labour Market with the Retention of Older Workers?<sup>1</sup>**

This paper provides an overview of the employment situation of young and old workers in the EU Member States, setting out the most recent development during the crisis and dealing with policies implemented to promote the employment of both groups. The evidence collected shows that there is no competition between young and older workers on the labour market. Structural or general policies to enhance the functioning of EU labour markets are crucial to improving the situation of both groups. However, the responsibility for employment policies still predominantly lies within Member States of the European Union, although initiatives taken at the EU level can provide added value, particularly through stimulating the exchange of experiences and facilitating regional and cross-border mobility throughout the EU.

JEL Classification: J11, J14, J18, J13, J63, J64

Keywords: youth unemployment, older workers, Europe, demographic change

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<sup>1</sup> This paper is based on a joint report presented to the European Parliament in 2013 (Eichhorst et al. 2013, available online as IZA Research Report No. 53).

## 1 Introduction

Promoting early retirement was a frequently used policy to keep open unemployment low in a phase of massive industrial restructuring in the 1970s and 1980s or even more recently in many EU Member States. In some countries, explicit policies to encourage older workers to leave the labour force were put in place to make jobs *available* for young labour market entrants at the time. However, while such schemes were gradually dismantled in many European countries over the last two decades, we can observe a certain renaissance of the view that in a situation of crisis high levels of youth unemployment can be reduced when older workers retire earlier. For example, on an experimental basis a *generation contract* is being implemented in Italy to encourage older workers to reduce their working time while young people should get better access to jobs. In September 2013, the French President Francois Hollande expressed his view that high birth rates are responsible for high youth unemployment rates in France. Hence, it is important to study the issue if there is a real competition for jobs between the two age groups in EU Member States.

## 2 The situation at first glance

The recent economic crisis has had a huge impact on European labour markets, including both the young and old. Besides large cross-country variation, there has been a remarkable resilience of the employment rates of prime-aged and older workers compared to the more vulnerable situation of young people, who have been facing severe difficulties in finding jobs in many EU Member States. According to Eurostat data, the youth unemployment rate rose sharply in the EU-27, reaching an average of 23.0% in the second quarter of 2013 (as compared to around 15.6% in 2008 and 22.8% in 2012 [annual unemployment rates], see Table 1 in the Appendix). Despite signs of economic recovery in some countries, the short-term prospects for youth unemployment remain bleak. Job creation is likely to lag behind economic recovery, with the result that the youth unemployment rate is likely to remain high over the coming years and the risk of experiencing long-term unemployment further increases. Already today, around a third of the young unemployed in the EU-27 have been jobless for more than a year. Youth have been harder hit by the economic crisis than older workers. Since 2008, the unemployment rate of youth (age 15-24) increased by 28.6 percentage points in Spain, by 33.2 percentage points in Greece and by 13.3 percentage points in Lithuania (also mentionable: Ireland (17.7), Cyprus (18.8) Portugal (21.3), Italy (14.0), Latvia (15.4), Bulgaria (15.4), Slovakia (15.0)), while that of older workers (age 55-64) increased by less than 10.6 percentage points in Spain and Greece (all other countries with a single-digit increase, except Germany and Malta with a single-digit decrease). It is important to note, however, that youth unemployment skyrocketed in those countries where unemployment for older workers also increased more strongly than in other countries.

**FIGURE 1 about here**

Yet again, it warrants mention that the countries where youth unemployment is particularly high (or where youth have been particularly hard hit by the economic crisis) are not those where older workers tend to work until comparatively high ages (or where older workers were least hit by the economic crisis). At country level, high activity rates for those aged 55-64 are not associated with high rates of youth unemployment (see figures 1 and 2). In fact, in some countries such as Greece, low activity rates for older persons are combined with high youth unemployment, while in other countries such as Germany relatively high activity rates for older persons are combined with low youth unemployment. Moreover, positive changes in the activity rates of older persons between 2008 and 2012 are not associated with rising rates of youth unemployment. To the contrary, a weak negative relation is observed, suggesting that in countries successfully having increased the activity rates among those aged 55-64 despite recessionary pressures, youth unemployment has tended to increase less than in other countries (or has even fallen).

**FIGURE 2 about here**

### **3 Is there a competition between young and old workers?**

The theoretical foundation of the *lump of labour fallacy* rests on an almost perfect substitutability between young and elderly workers. According to this perspective, an old worker leaving the labour market makes room for a young worker who can perfectly substitute the older worker in their previous task. However, several studies have questioned this notion of perfect substitutability between young and elderly workers on several grounds. Aubert et al. (2006) examined the effect of the introduction of new (IT) technologies and innovative workplace practices on the age structure of the workforce in French firms. These adjustments to new technologies and workplace practices may suggest the reasons and degree to which young and elderly workers are not perfect substitutes. Theoretically, unlike young workers, older workers – by being more skilled and experienced – may benefit potentially from technological and organisational innovations, which tend to be skill biased. On the other hand, innovation may hurt older workers by accelerating their skills' obsolescence, with part of their competences becoming outdated (see Rosen 1975; de Grip and van Loo 2002), and by requiring more adaptability and flexibility. Aubert et al. (2006) use firm-level data to find evidence of a lower wage-bill share for older workers in innovative firms, while the opposite holds for younger workers. This finding suggests a low degree of substitutability among workers of different ages, with new technologies increasing hiring opportunities significantly more for younger than for older workers. Moreover, this pattern also holds within occupational groups, thus suggesting a lack of (or low) substitutability even among individuals of similar skills or educational levels.

Ageing may affect productivity levels for various reasons.<sup>2</sup> On the one hand, older workers are considered more reliable and to have better skills than younger workers. On the other hand, older workers have higher health care costs and lower flexibility in accepting new assignments and may be less suitable for training (Barth et al. 1993). It is difficult to establish how age itself affects labour productivity, not only because productivity is highly individual and sector specific, but also owing to the interaction of age, cohort, and selection effects. Age alone is found to be a poor predictor of individual performance. There are wide variations between jobs and workers, yet older workers are generally considered to be more consistent, cautious, slow, and conscientious. Furthermore, older workers have fewer accidents and are less likely to quit, thus reducing hiring costs. The age/productivity profile is not exogenous to labour market institutions. In the past, labour market institutions have been adjusted to facilitate early departure from the labour force. Individual productivity deteriorates if no investments are made to keep human capital up-to-date. Therefore, declining productivity for older workers may be a self-fulfilling prophecy. If a worker anticipates early retirement, that worker will be less eager to invest in training to prevent productivity from deteriorating. If an employer expects a worker to retire early, that employer too will not have an incentive to invest in maintaining productivity. Current generations of older workers may have anticipated that they could retire early, thereby reducing investment in human capital. If so, the concave relationship between age and productivity is caused by the existence of mandatory retirement and not the other way around.

According to Johnson (1993), most employers (and probably many employees) seem to believe in a rule of thumb that average labour productivity declines after some age between 40 and 50. This assumption is so common that few attempts have been made to gather supporting evidence; why bother to prove the obvious? Nevertheless, the variance in performance is commonly greater within age groups than between age groups. Most research is based on cross-sectional comparisons and not on longitudinal analysis. Warr (1998) presents an extended overview of a variety of studies on the relationship between age and productivity, including studies on a range of job behaviours in conjunction with financial indicators to determine the overall outcome of employing older staff, and laboratory experiments comparing the behaviour of people at different ages. According to Warr, there is no reason to think that older workers are less good at their jobs than younger workers: across jobs as a whole, there is no significant difference between the job performance of older and younger workers.

Some evidence on the relationship between productivity and age is based on general data either from workers or from firms. Avolio et al. (1990) find, based on a U.S. database containing individual information on personal characteristics, ability, jobs, and work

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<sup>2</sup> This section, until p. 6, draws extensively on Boeri, T. and van Ours, J. (2013) *The Economics of Imperfect Labor Markets*, Princeton University Press, 2<sup>nd</sup> edition.

performance, that the length of job experience is a better predictor of work performance than age, especially in jobs with high complexity. Hellerstein et al. (1999) use a U.S. matched worker-firm dataset to analyse the relationship between wages, productivity, and worker characteristics. They find that for prime-age workers and older workers productivity and earnings rise at the same rate over the life cycle, and they conclude that their evidence is most consistent with models in which wages rise in accordance with productivity, such as the general human capital model. Using French matched worker-firm data and a similar setup of the analysis to that of Hellerstein et al. (1999), finds opposite results: namely that older workers are relatively overpaid. The age profile of wages has a concave pattern, while the age profile of productivity stops rising and even decreases after some experience level. Ilmakunnas and Maliranta (2005) use Finnish firm data with matched average worker characteristics to investigate the relationship between wages and productivity, finding that the wage/productivity gap increases with age, which they attribute to strong seniority effects in wage setting. Dygalo and Abowd (2005) use French matched worker-firm data to compare experience/earnings and experience/productivity profiles over employment spells, also finding that earnings increase over employment spells, even when productivity declines and attribute this to preferences of workers for rising earnings profiles and firms matching these preferences. However, Aubert (2003), who also uses French matched worker-firm data, does not find strong evidence of older workers being less productive than younger workers. Productivity is increasing and concave with age. In manufacturing, construction and trade the increase of productivity slows after age 40 and is close to zero after 50, yet does not decline. In services, there is also a slowdown of productivity after age 40, but even beyond this age productivity increases with age.

Dostie (2011) concludes, based on an analysis of Canadian linked worker-firm data, that both wage and productivity profiles are concave, but productivity diminishes faster than wages for workers aged 55 and over. The objective relationship between age and productivity may be difficult to establish, but employers may still have strong opinions about the productivity of older workers. Remery et al. (2003) report employers' opinions about aging issues in the Netherlands. They find that employers are less favourable about older workers the higher the share of older workers in the firm. About 40 percent of the employers indicated that they would not consider recruitment of older workers even if they suffered staff shortages. A further problem interfering with the substitutability between young and older workers is indeed that non-employment is a one-way street out of the labour force for older workers. If they leave a long work relationship *to make room* for young workers, they may well not find alternative employment even if they are highly productive. Long-term unemployment among older workers is significantly higher than among prime-age and young workers. It is easier to extend on-going firm-worker relationships than to encourage employers to hire older workers. Nevertheless, older workers face difficulties in keeping their jobs partly because of employers' negative perceptions about their capacities to adapt to technological and organisational changes and partly because their wage costs may rise more steeply than their productivity. Ill health and difficult working conditions, including long working hours, may also play a role. Perhaps even more importantly, older workers who lose their job find it extremely difficult to acquire a new job and may face large potential wage losses. On

average across the OECD, the hiring rate of those over 50 is less than half the hiring rate for prime-age workers (25-49). This may relate to employers' reluctance to hire older workers, but also to weak search incentives and limited support from public employment services. Chan and Stevens (1999 and 2001) study the economic consequences of late-career job loss in the United States, finding large and lasting effects on wages, assets, employment expectations, and actual employment. They conclude that two years after a job loss at age 55 only 60 percent of men and 55 percent of women are employed, compared with employment rates of more than 80 percent among non-displaced men and women who were working at the age of 55.

They also find that even four years after job loss there is still a gap of around 20 percent in employment rates of displaced and non-displaced workers. The reasons for this difference are twofold: displaced workers return to a new job slowly, and exit rates from post-displacement jobs are higher than from other jobs. Daniel and Heywood (2007) argue that there are two possible explanations for the widely observed phenomenon that many firms employ older workers, but few firms hire older workers. The first explanation is related to training issues, namely that older workers have more experience, firm-specific skills, and knowledge and are important in training functions within firms. If they are separated from their firms, they lose this advantage and become relatively expensive as new hires. The second explanation concerns the relationship between productivity and wages. If back-loading of the compensation profile is used to motivate greater lifetime effort, this only holds if the worker remains in the firm. Newly hired older workers do not have an incentive to put in a lot of effort in their job, which also makes them relatively expensive. They also find that firms that use deferred compensation and internal labour markets are unlikely to hire older workers because steeply increasing wage tenure profiles discourage the use of older workers in production. Furthermore, they conclude that modest financial incentives may be insufficient to change the hiring practices of many employers, especially employers that use back-loading and require specific human capital. Nevertheless, Behaghel et al. (2004) find evidence that financial incentives influence hiring behaviour of French firms. When a firing tax was abolished for workers hired after the age of 50, the hiring of older workers increased.

In what follows we analyse whether there is substitutability between elderly and young workers in regional labour markets. In particular, we use EU Labour Force Survey data for 2009 to provide an additional empirical assessment of the degree of substitutability between elderly and young workers, analysing the correlation between the labour force exit rate of workers aged 55 to 64 years old and the unemployment rate for several groups of young individuals, aged from 21 to 30 years old. This analysis is conducted at a local labour market level for several EU countries<sup>3</sup> including two non-EU countries<sup>4</sup>. The measure of the exit rate of the elderly workers and the unemployment rate of the young refers to the NUTS 2 unit – the basic region for the application of regional policy – as defined by Eurostat. The lump of

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<sup>3</sup> Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Israel, Italy, Lithuania, Luxembourg, Latvia, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and the UK.

<sup>4</sup> Israel and Norway.

labour assumption would require a negative correlation between the exit rate of the elderly from the labour market and the youth unemployment rate. In fact, according to this view, by leaving the labour market, the elderly would make room for the young, with the youth unemployment rate consequently falling. Figure 3 (see Appendix) Panel (a) suggests that no (statistically significant) correlation indeed exists between the exit rate from the labour market of the elderly in 2009, measured in each NUTS 2 unit for all the EU countries and the youth unemployment rate, measured at the same regional level.

If we examine this correlation by gender, an interesting result emerges. The overall exit rate of the elderly, which measures the proportion of male and female elderly workers leaving the labour market, is uncorrelated to the youth unemployment rate among the females (see figure 3 Panel (d)). However, a positive correlation (statistically significant at the 10% level) emerges between the overall exit rate of the elderly and the male youth unemployment rate, as shown at figure 3 Panel (e), with this finding overturning the lump of labour view.

In the local (regional) labour market, in which the elderly retire early – and thus exit the labour market – the unemployment rate of the young males is high, whereas lower levels of youth unemployment rates for males are associated with low exit rates among the elderly. To pursue further the possibility of gender specific jobs, in which substitutability between young and elderly (male or female) workers occurs, we analyse the exit rate of the elderly and the unemployment rate of the young by gender. While no correlation emerges for females (see figure 3 Panel (b)), a strong positive correlation becomes apparent between the elderly male exit rate and young males' unemployment rate, as displayed in figure 3 Panel (c). This finding, contradicting the lump of labour, supports the empirical evidence provided in other studies (see Gruber and Wise 2010; van Dalen and Henkens 2002). The explanation for the positive relationship proposed in this literature is that a large exit rate of the elderly workers, induced by early retirement, increases the cost of financing the pension system and consequently also the pension contribution (or labour tax) rate. The resulting increase in labour cost reduces the demand for workers, and thus also the employment rate, particularly among those individuals who are less attached to (and less protected in) the labour market, namely the young.

To further investigate the degree of substitutability between elderly and young workers, and thus to indirectly test the lump of labour, we use the 2009 EU Labour Force Survey data to construct the correlation between the labour force exit rate of elderly workers and the youth unemployment rate at the NUTS 2 level by education group. We particularly consider highly (third level education), medium (upper secondary education) and low (lower secondary education) educated individuals for both the elderly exit rate and the youth unemployment rates. Interestingly, no correlation exists for high and medium educated individuals (see figure 4 (Appendix)). However, among low educated individuals, a strong positive correlation emerges between the elderly exit rate and the youth unemployment rate. Again, this finding not only contradicts the lump of labour assumption, but it also rather suggests the existence of an opposite effect: early retirement (among the low educated elderly workers) worsening the labour market conditions of the low educated young workers. Overall, little evidence of a close substitutability between young and elderly

workers emerges from the empirical results. On the contrary, evidence from regional labour markets tend to suggest that early exit of elderly workers from the labour market may indeed worsen the labour market outcomes of young individuals, as in the case of male and low educated workers.

#### **4 What is being done at the European and the national level?**

##### **4.1 Youth employment policies in place at the European level**

EU Member States are primarily in charge of paving the way for young people to enter the labour market. However, the EU can support them by exerting influence in political decision-making. In this context, the European Commission launched the *Youth on the Move* programme, an EU flagship initiative that began in 2010 as part of the *Europe 2020* strategy. The programme shall promote policy measures at national and European level to enhance educational and training systems (European Commission 2011b). In particular, *Youth on the Move* focuses on three key areas.

Firstly, the initiative addresses the development of modern education and training systems as being crucial to deliver key competences. This contains the reduction of early school leaving to 10% by concentrating on prevention and targeting on those at risk of dropping-out of school, the encouragement of vocational education and training (VET), and early workplace experience in the form of apprenticeship-type training and traineeships as well as the expansion of career and life-enhancing learning opportunities for non-formal and informal learning for the youth. Secondly, the initiative intends to promote higher education for the knowledge economy, supporting the development of transnational learning. To reach the goal of 40% attainment of higher education or equivalent, all Member States are supposed to modernise higher education. For example, this can be achieved by increasing the quality and transparency of its institutions and creating partnerships throughout the entire world. Thirdly, learning mobility to increase future employability is supported, also by promoting employment mobility across the European Union to ease young workers' moving and working within the European Union. This might provide young workers with experiences and skills, as well as contribute to better matching labour supply with labour demand. Accordingly, the procedures in terms of the social security system and the general free movement of workers shall be simplified (European Commission 2010).

In December 2011, the *Youth Opportunities Initiative* was launched as response to the growing youth unemployment since 2008, followed by the *employment package*, adopted in April 2012. The package specifies policies regarding the reduction of early school leavers and a modernisation of education, and also addresses skills that should be developed to meet the demands of the labour market, thus easing the transition from school to work. In May

2012, in its resolution on the Youth Opportunities Initiative,<sup>5</sup> the European Parliament stressed the importance that Member States should take measures at national level to safeguard that young people are either employed, in education or training within a period of four months of becoming unemployed or leaving formal education (Council of the European Union 2013). Building upon existing Youth Guarantee approaches within some Member States, such as Austria, Finland, the Netherlands and Sweden, the establishment of a European-wide Youth Guarantee aims at supporting Member States with above average youth unemployment rates. This includes the establishment of partnerships and career guidance services at national, regional or local level to ensure that young people take informed decisions regarding their professional career and are aware of the fact that services are provided to them after leaving school. In addition to this, relevant labour market actors should create partnerships with employers to promote youth employment by offering first work experience and on-the-job-training. The Youth Guarantee shall also help safeguard an involvement of youth organisations or representatives to take into account the specific needs of beneficiaries (European Commission 2012a).

According to the European Commission's proposal, "the term 'Youth Guarantee' refers here to the fact that young people [aged 15-24] receive a good-quality offer of employment, continued education, an apprenticeship or a traineeship. An offer of continued education could also encompass quality training programmes leading to a recognised vocational qualification" (Council of the European Union 2013). Finally, at the EU's Council of Employment and Social Affairs Ministers on 28<sup>th</sup> February 2013, the Council adopted the proposed Youth Guarantee Recommendation (European Commission 2013). In January 2011, the Commission approved "Tackling early school leaving: a key contribution to the Europe 2020 agenda". Thereafter, policies should particularly target children with immigration backgrounds. It also highlighted the importance of intervention schemes dealing with problems such as absenteeism and poor performances, as well as second-chance learning schemes.

In 2010, the Commission adopted a communication on "A new impetus for European cooperation in vocational education and training to support the Europe 2020 strategy". That is, vocational education and training shall endow young people with skills relevant to evolving labour markets. For instance, those skills encompass abilities related to the use of information technology. In September 2012, the European Commission submitted a proposal for a "Council recommendation on the validation of non-formal and informal learning", as part of the *Youth on the Move* initiative. On the one hand, the proposal stresses the importance of creating new learning opportunities. On the other hand, it is designed to achieve a significant impact on the functioning of the labour market through a European-wide validation mechanism (European Commission 2012b).

#### **4.2 Youth employment policies in place at the national level**

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<sup>5</sup> European Parliament resolution on the Youth Opportunities Initiative (2012/2617(RSP)), May 24, 2012.

The following section describes the policies introduced in the EU Member States to target young people's entry into the labour market during the last five years. First, policies regarding the general school education are taken into account, before considering training and employment-related policies as well as the role of activation policies related to amendments within the benefit systems.

### **School education/Preventing early school leaving**

In the area of schooling, the most prominent means across the Member States relate to those preventing early school leaving. Early school leavers are those people aged 18-24 with a lower as secondary level education not participating in any further education or training. In countries such as Spain, Malta and Portugal, the rate of early school leavers exceeds 30%. To guarantee that young people learn basic skills, several countries have installed extra support classes, observing pupils' achievements much closer than previously. For instance, in Greece, such kinds of classes exist throughout primary and secondary education in order to enhance pupils' performance. The *Hope for suburbs* programme in France supports young people stemming from underprivileged areas, with 200 schools providing intense training for those delivering poor results. The *Acting for youth* plan in the same country has extended compulsory education from 16 to 18 years, entailing the *right to prepare for working life* in the sense of benefiting from training or taking up a job after leaving school. Other Member States have also introduced so-called second-chance schools, placing emphasis on practical skills and work experience or guidance measures for early school leavers. In Finland, early school leavers were assigned to personal advisors, providing advice and support in the form of a search team to find either employment or a way to further educate the early school leaver (European Commission 2011a). In the UK, the Education and Skills Act 2008 provides that all young people will have to remain in education or training until the age of 18 by 2015. Accordingly, young people have to either participate in education or training at a school, college and home education, or carry out work-based learning such as an apprenticeship (Skill 2009).

### **Development of training systems**

To better link the educational system with work experiences, a couple of Member States have initiated measures to close the gap between the educational system and the latter employment on the labour market. Several Member States have created vocational training programmes or expanded the number of vocational training places (European Commission 2011a). In Austria and Germany, a *dual* vocational training system has long been in place, combining work experience through on-the-job learning and classroom education at a vocational school.

The system is supported by employers, trade unions and the government, particularly with regard to the legal framework and financial means. The system facilitates a relatively smooth transition from school to work (Biavaschi et al. 2012: 35). In Austria, the *Vocational Training Act* ("Berufsausbildungsgesetz") entails an *Apprenticeship Guarantee* ("Ausbildungsgarantie") for all young people up to the age of 18 (European Commission

2011a). The act was refined in 2008, providing a supra-company training programme until its completion for those who cannot find a company-based apprenticeship (Arbeiterkammer 2009). Accordingly, young people are trained until they have either found a company-based apprenticeship or completed the apprenticeship. In the meantime, the *Public Employment Service Austria* (“Arbeitsmarktservice Österreich”) supports those concerned by searching for a company-based apprenticeship (Hohbein and Wieland 2011). In Germany, the *National Pact to Promote Training and Young Skilled Workers in Germany* has been in place since 2004, introduced to offer training opportunities to young people willing and able to hold an apprenticeship. The Training Pact was refined in 2007, to include joint efforts of social partners (Federal Ministry of Labour and Social Affairs 2010).

### **Employment protection**

While high levels of employment protection decrease labour demand, employment protection cushions the negative effects of an economic slump on the labour market. On the other hand, low levels of employment protection lead to generally higher labour demand yet relatively high unemployment rates during an economic downturn. Young people are predominantly hired under low protection contracts (Boeri 2011). Nevertheless, the Spanish example shows that high employment losses can occur despite high employment protection (Balakrishnan and Berger 2009). The Spanish reform of the labour market carried out in 2010 and 2011 contained changes regarding individual dismissals. Today dismissals for economic reasons, triggered by current and expected losses or reductions in revenues, are considered a cause of fair dismissal. In this context, the advance notice was shortened from 30 to 15 days. Moreover, the Spanish government decided to create a new permanent contract including an express dismissal procedure with a maximum severance pay of 33 days’ wages and no advance notice. For employees and workers with temporary contracts, severance pay was increased from 8 to 12 days’ wages (Bentolila et al. 2012).

In Italy, uncertainty and costs related to dismissals were previously responsible for employers relying on temporary contracts (IMF 2012: 15-16). Therefore, the labour market reforms, approved by the Italian Parliament in June 2012, included individual dismissal rules and procedures. In order to reduce time and uncertainty related to individual dismissals, the discretionary area for judges in this respect was restricted. The *fast judicial track* intends to reduce indirect costs with regard to time and uncertainty owing to dismissal disputes (Fornero 2012). The previous legislation included the possibility of every employee working in a business unit with more than 15 employees, or for an employer with more than 60 employees to claim their job back. In addition, the employee was entitled to receive all lost salary since their dismissal and the employer could be forced to rehire the employees through the labour court’s decision. Since the reform came into force in July 2012, the employee can no longer claim their job back in case of a lay-off due to an economic reason. Meanwhile the employee may only be granted an indemnity fixed by the labour court (Lexology 2012).

### **Active labour market policies (e.g. hiring subsidies)**

Lacking labour demand resulting from insufficient growth represents another factor for increasing unemployment among the youth, prompting active labour market measures aiming at increasing the employers' demand for hiring young workers (ILO 2010). Active labour market policies (ALMP) are usually understood as "bringing unemployed back to work by improving the functioning of the labour market in various ways. ALMP include programmes such as public employment services, labour market training and subsidised employment" (Boone and van Ours 2004: 2). One of the most prominent measures used to combat (youth) unemployment during the recession of 2008/2009 was short-time work resulting from an economic downturn and shortfall of orders. This scheme allows employers to reduce the working hours during times of economic difficulties. Many Member States have carried out short-time working schemes or partial unemployment benefit schemes during the economic slump, and some have even expanded the coverage of existing schemes or eased procedures for their application (Hijzen and Venn 2011: 7). Across a number of Member States, there are no tailor-made ALMPs for young people. However, several Member States have incentivised youth employment by hiring subsidies and reductions of the non-wage related costs. Such policies aim at stimulating additional demand from the employers' perspective, in order to create new jobs for the youth (European Commission 2011a). Measures such as wage and (labour market) training subsidies are taken to decrease work-related costs and incentivise the recruitment of young workers, and are typically provided by the government to support companies hiring or training an unemployed young employee or worker. Subsidies are sometimes paid directly to the employee or worker, with employment agencies or offices typically responsible for providing the funds. Public work programmes, which contain mostly direct employment opportunities through public activities, can also be mentioned in this context. Nonetheless, as stated by Kluge (2006), no significant positive effect and even some negative outcomes regarding the post-programme employment have been found (ILO 2010: 57-58). Another measure introduced with the outbreak of the financial crisis, is the promotion of self-employment. Other Member States have also initiated programmes to support self-employment, often encompassing mortgages or other forms of financial funding to start an own business and gain entrepreneurial knowledge (European Commission 2011a).

### **Reforms of the benefit system due to activation policies**

Within the youth employment framework, the modernisation of the social benefit systems is addressed as part of the *Youth on the Move* initiative. Hereafter, access to social benefits should be safeguarded when perceived as appropriate. In addition, it should be expanded in the case of insufficient coverage of income safety for the youth. At the same time, activation measures and conditionality should guarantee that those concerned are actively searching for workplaces or willing to participate either in education or training. Young people often face the same requirements regarding the entitlement of unemployment benefits as older employees. Accordingly, if a young person does not meet the criteria for the entitlement owing to a lacking overall working period, they are unable to claim unemployment benefits (European Commission 2011a).

### **4.3 Measures to prevent the early exit of the labour market of the older workers**

Measures fostering the employment of older workers should take two different aspects into consideration: first, the measures in countries with a high employment rate of older workers; and second, measures in countries with a strong dynamic in the employment rate of older workers. Within the second perspective, the decline in employment rate and rise in unemployment rate due to the economic crisis in 2008 hamper a clear picture of successful country-specific measures. Therefore, we focus on the literature and empirical evidence prior to 2008. The development of the employment rates of older workers and the transition to retirement since 2008 can be seen indicative of how successful the national states were in managing the economic crisis.

#### **Reform of the social security incentive structures**

Pension reforms have been on the agenda in all Member States during the past decade (overview in European Commission 2008, box 2.1). First of all, early exit schemes were closed in the majority of countries, leading to increasing average age of exit from the labour market. In five countries<sup>6</sup>, the average exit age is still below 60 (in 2010), whereas twelve countries have a retirement age of 62 years or above<sup>7</sup>. An increase in the statutory retirement age causes different reactions among persons and firms, with the extent to which such a reform increases the employment rate depending on many factors. Hakola and Määttänen (2007) calculated the impact of the pension reform 2005 in Finland on the average labour market exit age. In the reform, there was a restriction in access to early retirement options and an increase in retirement age of two years (also an increase in pension accrual rate and actuarial adjustment factors), which led to an increase of the average labour market exit age by 8.5 months. The increase of the pension age for early exits in Austria by 2.2 years between 2000 and 2006 leads to a decrease in retirement of 25 percentage points among women of the relevant age cohorts and 19 percentage points among men. Employment increased by 10.7 percentage points among women/men, although the unemployment rate also significantly increased (+11/10 percentage points among women/men) (Staubli and Zweimüller 2011). However, for the outsiders, the unemployed older, the reform leads to a decrease in employment probabilities. Empirical findings for the Netherlands suggest that 11% of all people entering the disability pensions constitute a form of hidden unemployment (1994 – 2003) (Koenig and van Vuuren 2010). To stop this dynamic, new measures among employers and employees have been established. To reduce labour lay-offs, a firm's firing costs of older workers were increased through increased pension contributions in the case of lay-offs. The employers' contributions are experience rated. That is, the higher the number of workers who exit from the labour market and enter disability pensions, the higher the employers' contributions are. The introduced system of experience rating in the health and disability insurance reduced the inflows in disability (Hakola and Uusitalo 2005). In Germany, public pension reforms led to

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<sup>6</sup> Lithuania, Hungary, Poland, Slovenia, Slovakia

<sup>7</sup> Denmark, Germany, Estonia, Ireland, Spain, Cyprus, Latvia, Netherlands, Portugal, Romania, Sweden, UK

an increase of average labour exit age among women from 61.6 to 61.9 and among men from 62.1 to 62.6 years within 2006 to 2009. The reason for this is the introduction of the means-tested *unemployment benefit II* in combination with the shortened entitlement period that paved the way for a higher job-search intensity as well as the broader acceptance of fixed-term contracts and agency work. In France, the past reforms increased the employment rate of older workers and persons beyond the retirement age up to 13%.

Unemployment benefit improves the job matches as employers and employees have a certain period to find the most suitable employee/job, and moreover macroeconomic efficiency can be enhanced. Employers can also use the insurance to reduce the labour costs in case of short-term contraction of demand (hire-and-fire). Labour turnover varies among the Member States. To reduce short-term labour turnover, many countries introduced a specific unemployment contribution rate for employers. If firms have a lay off beyond the average of the industry, the contribution rate to the unemployment insurance increases.

There is an indirect relationship between the employment level of older workers and health insurance. Health insurance can support employability of workers and workplace health promotion (WHP) through various incentives. For example, work organisation fosters an appropriate balance between individual level of skills, job demands and job control, work time, etc., and becomes particularly important with the increasing age of employees. Disability pensions and health insurance are closely related: A stricter health screening reduced disability pension in the US (Gruber and Kubik 1997). An experiment in the Netherlands shows that in regions with stricter screening, the disability rate declined (De Jong et al. 2011). Moreover, the compulsory rehabilitation plan has also had a positive impact on employment of older workers, reducing the disability inflow. Furthermore, Autor and Duggan (2003) calculated a significant screening effect on high-qualified employees but no effects on low qualified employees. In Sweden, there is just a small effect of stricter health screening on disability entrants and no effect on the employment level of older workers (Karlström et al. 2008). Johansson et al. (2012) find reduced entry rates between 1986 and 2008 in the context of screening stringency of the disability insurance in Sweden. The stricter health access criteria for disability pension in Austria decreased the disability entrances by ten percentage points, with 45% of the affected persons remaining employed, while 46% became unemployed and 9% received sickness benefits through health insurance (Staubli 2011).

### **Incentives of the tax system**

European tax systems in general and income and payroll tax systems in particular are not age-specific, given that the income tax rate relates to the level of income and not the age of the taxpayer. While there is extensive empirical literature on the relationship between taxes and the individual labour supply decisions,<sup>8</sup> there are few empirical findings of tax impacts on the labour supply decision of older workers. The age group that is in transition between employment and retirement is usually excluded from labour supply incentives. The labour

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<sup>8</sup> E.g., Auten et al. 2008; Saez et al. 2012.

income of workers includes decisions of qualification, income level of the industry, hours worked, age, gender, etc., with tax incentives corresponding to the elasticity of the mentioned components. Empirical findings show that working aged women are more responsive to taxes and wages than men. For US employees, Alpert and Powell (2012) find significant effects of payroll taxes on labour exit and pension entries of older workers (55 to 74 year old): the higher the tax burden of older men, the sooner they will quit employment for retirement. The authors suggest that a tax decrease for older workers by one-percentage point would decrease labour market exits by 4%. Age specific deductions of contributions in the social security systems try to reduce labour costs of older workers to promote their labour market attachment. In Finland, the employer pension contribution rate decreased by 1.2 percentage points to 16.1%, and vice versa increased the contribution rate for the older employee by 1.2 percentage points to 5.8% of pensionable income.

In Austria, there is also an evident reduction in social security contributions: for workers older than 60 years, firms do not pay contributions to the unemployment insurance (6% of pensionable income), to the work accident insurance (1.4%), insolvency safeguarding fund (“Insolvenzentsicherung”) (0.55%), and contributions to the family-fund (“Familienlastenausgleichsfonds”) (4.5% of the assessment basis). Up to 2012, the social security contribution rate for employees older than 60 years decreased by 12.45 percentage points. There are no evaluations of the impact of the deduction on employment levels of older workers, and by 2013, the contribution deduction is going to be less generous.

#### **4.4 Measures promoting employment of both groups**

The specific problems of young and old workers within the labour market relate to the lack or obsolescence of relevant skills and insufficient work experience. To counter this, active labour market policies are in place in all EU Member States, along with labour market reforms to raise employment levels. In this context, it makes sense to distinguish between targeted and universal policies, with targeted policies addressing specific socio-economic groups such as youths and older workers and universal policies aiming to generally stimulate employment growth and job creation, thereby benefiting a broad range of potential target groups.

##### **Targeted measures**

The evidence collected shows that there are very few targeted schemes trying to simultaneously promote the employment of young and old workers. Most targeted measures focus on training and hiring incentives to employers, such as specific skill adjustment programs or hiring incentives. Nonetheless, diverse measures may be used to reach the same goal: while some of these measures were designed to encourage the retention of older workers, others focus on improving the labour market access and early career mobility of young people. One such measure involves the introduction or expansion of tax and social security incentives for employers and/or employees to hire and retain

younger and older workers (Eurofound 2012). Similar financial incentives targeting both younger and older workers at risk can be found in other countries. Specific programmes aiming to establish a labour market *bridge* between older and younger workers rarely exist. However, one particularly notable policy approach in this respect is old-age part-time work. In some countries, this was designed to promote a gradual exit from work to retirement, thereby prolonging the employment career whilst also facilitating the integration of younger people into work.

In an ideal-type, old-age part-time work programme employers received a subsidy if they: (a) established a phase-out programme for older workers and topped up their pension contributions during the part-time work period; and (b) hired a young unemployed person as a replacement worker. One prominent example is the system that was in place in Germany until 2009 (“Altersteilzeit”). However, old-age part-time work neither helped to retain older workers, as it was hardly used for progressive retirement but rather for premature exit from work, nor was there any positive effect on the employment of younger workers (see the evaluation study by Wanger 2009). Indeed, at best it was neutral regarding its effects on younger workers while effectively lowering the employment rate of older workers. This is also confirmed by the similar case of Austria (Graf et al. 2011). Furthermore, the costs for subsidised early retirement had to be borne by employers and employees via social security contributions. In turn, this might have actually reduced overall demand for labour, therefore with detrimental effects on younger people. Accordingly, removing older workers from the labour market can harm the employment prospects of younger people.

### **Universal measures**

More universal policy approaches are fundamentally different as they aim at more jobs and better labour market access for all working-age people. Such general policies to promote high employment and facilitate mobility on the labour market for all groups are beneficial for all (Bassanini and Duval 2006), and thus are also conducive to the better employment record of young and old workers. The most fundamental policy areas and initiatives in this area include:

- skill formation and updating via vocational education and training and continuous vocational training later in life;
- effective forms of active labour market policies and activation strategies that make the receipt of social benefits for working-age people conditional upon reintegration efforts;
- policies to reduce taxes on work and non-wage labour costs, particularly involving expenditure for *passive* social benefits granted to working-age people without a reintegration perspective;
- reforming employment protection to enable entry into the labour market and facilitate mobility between jobs; while the effects of reforms of employment protection legislation may generally be ambiguous, deregulatory reforms on the labour market to promote (re-)entry into employment by creating flexible jobs can at least facilitate labour market access for those outside the labour market, to some

extent.

These general employment-friendly policies can have particularly beneficial effects on demographic groups seeking access to the labour market at a young age or when re-entering the labour market after a phase of unemployment or inactivity. Therefore, it can be stated that universal policies can have a particular impact on certain groups. Regarding active labour market policies, one can argue in a more generalised fashion that many active labour market policy schemes can be targeted flexibly to address the employment obstacles of target groups identifiable in the national context, with age representing just one parameter among others here. In particular, ALMPs can help to make jobseekers more attractive to potential employers by reducing labour costs in the initial phase of employment or by raising productivity via skills upgrading.

In principle, active labour market policies such as (i) publicly sponsored training, (ii) hiring incentives for employers, (iii) start-up support, (iv) in-work benefits topping up low wages and (v) activation policies establishing an effective conditionality between benefit receipt and participation in ALMP programmes or acceptance of job offers are available to address the whole working-age population. As shown above, there is some potential to deliver effective active labour market policies tailored to the needs and employment barriers of particular groups, such as the young and the old, so that the employment prospects of both groups are promoted. To summarise, general policies are particularly relevant in terms of raising the employment levels of all, including young and old workers. Targeted policies are justified if particular barriers to employment exist, yet age is only one criterion amongst many in identifying specific target groups and designing policies accordingly. As can be seen from the experiences of EU Member States, it is less obvious to have policies addressing specifically young and old workers (but only them). Rather, if these groups are targeted, they are dealt with separately. Finally, consistently both with respect to developments over time and in cross-country comparisons, there is no competition between the two groups in terms of opportunities to obtain jobs. Accordingly, there is also no economic or political trade-off between a good start into employment for young workers and the retention of older workers.

## **5 Conclusion and policy recommendations**

This study provides an overview of the employment situation of young and older workers in EU Member States. Regarding the recent and present situation in European labour markets, it is evident that young people have suffered most from the recent crisis in terms of rising unemployment and declining employment, particularly in countries where entry into employment and particularly into permanent jobs, was difficult already before the crisis. At the same time, the employment rates of older workers have been more resilient and less responsive to the crisis, owing to the withdrawal of early retirement incentives and a more stable employment position compared to younger labour market entrants. With respect to policies being implemented to further the labour market participation of young and old

workers, it should be noted that particular barriers might exist for young and old workers. Policies such as hiring subsidies, extended training programmes, start-up support schemes and general activation programmes have been put in place to combat the unemployment of working-age people, including younger and older workers. Regarding the former, many EU Member States have developed a set of targeted active labour market policies and flexibilised the labour market. However, not all such programmes are delivered in an effective way, and some preparatory or temporary training and employment schemes may simply postpone integration problems, as is the case for fixed-term contracts and other flexible forms of employment that often fail to provide a proper stepping-stone into more stable employment. Concerning older workers, the withdrawal of early retirement programmes, less generous unemployment benefits and changes in public pension schemes have contributed the most to prolonging the working life. Moreover, training over the life cycle and other active labour market policies can also have a positive impact in this regard. Higher employment rates of older workers often mean a longer employment of employed people, whereas re-entry into work may still be difficult for the older unemployed. It is most notable that incentives to retire early or move into long-term unemployment benefit have been cut, with EU Member States having generally not opted to further expand early retirement in the current situation, unlike in earlier economic crises.

Comparing the two groups, more significant problems are found regarding youth unemployment and their entry into the labour market in countries where the labour market is deeply segmented, where effective vocational education and training systems are lacking and the economy is in a particularly difficult situation due to the crisis. The evidence shown in our study also highlights that structural, general policies are most relevant in promoting the employment of both younger and older workers, and are more prominent than targeted policies addressing either group. In fact, while targeted policies focus on either group, policies aiming to establish employment *bridges* between young and older workers have not been of major importance, and where implemented, have proven to be rather ineffective. Most importantly, the early retirement of older workers is neither beneficial nor necessary to promote young people's entry into the labour market. Indeed, a labour market arrangement that is sufficiently flexible and adaptable through well-designed vocational education and training, as well as continuous training policies, activation and active labour market policies, wage setting and labour market regulation as well as tax and benefit systems by setting the right incentives is the most conducive approach to achieve a high level of employment. There is also strong evidence that there is no fixed amount of labour that has to be distributed among different age groups; moreover, despite a widespread belief in a *lump of labour*, this does not hold empirically.

Apart from particular circumstances that may arise in certain (stagnant) firms or sectors with no labour mobility, there is no competition for jobs between young and old workers, given that there is only limited substitutability of the two age groups, owing to differences in sectors, occupations, experiences and skills. There is no need for concern regarding negative side effects of the better employment retention of older workers. Rather, this is generally beneficial for overall labour market performance in easing the burden of ageing on the

welfare state in order for young people to benefit from the higher employment of older workers as well.

### **Policy recommendations**

This study indicates that there is no political or economic trade-off between a good start into the working life for young people and a better retention of older workers in employment. Rather, well-designed policies can promote better employment opportunities for all by making working-age people employable and adaptable to a dynamically changing economy. In the current crisis, this is particularly relevant regarding younger people, who bear a major burden of the economic and labour market consequences of the crisis. Here, appropriate policies and labour market reforms are high on the agenda to improve the labour market access of youth, offering them a realistic chance of promotion to stable, gainful and productive employment. Otherwise, they will remain in a most vulnerable situation with long-term consequences over the subsequent life course. Most of these policies are currently designed and implemented at the national level, under the responsibility of national governments and social partners.

### **Supporting the implementation of employment-friendly policies**

The most important policy priority is to enhance labour market performance by general employment policies to improve the employment prospects of both young and older workers. The empirical findings of this study clearly support the view that such general employment-oriented reforms are beneficial to both target groups, without any significant direct or indirect negative side effects between the two. Hence, as has been the case, policy makers could continue to ask the Member States to pay attention to designing and implementing structural employment-friendly policies that help to stimulate job creation and economic growth. Furthermore, European policy makers could continue to refrain from policies aimed at reducing labour supply via easier access to passive benefit receipt or public employment schemes that do not pave the way to gainful regular employment. Our research indicates that early retirement needs to be phased out, as has been achieved over the past decade, given that the sustainability of pension systems and demand for skilled labour in ageing societies will have to lead to a longer rather than shorter working life in the short- and medium-run. Accordingly, appropriate incentives in unemployment benefit and pension systems should be set in order to prevent an early, irreversible and prolonged exit from work.

### **Promoting tailor-made activation policies for the youth**

Activation policies introduced over the past decade and expanded to cover ever-larger groups of the working-age population remain valid policies, helping to reduce benefit dependency and bring more people into the labour market with a realistic chance of moving into gainful and productive employment. Accordingly, these activation policies should be applied to the whole working-age population in a universal manner, in order to minimise the risk of benefit dependency. While it is necessary to safeguard the living standard for those

who become unemployed, a further goal of benefit systems should be to ensure that people remain in the labour force.

Thus, it is important to turn benefits into re-employment payments in order to avoid the benefit systems leading to social exclusion, becoming a trap that permanently excludes people's participation in the labour market. The activation of young people constitutes a very constructive political option, with tailor-made integration services of utmost importance, given that successful insertion into employment can only work if public employment agencies take the particular individual factors into account, including health problems, motivational or psychological problems, skill deficits and others. Barriers and disincentives must be prevented by focusing on measures that create access to the labour market by easing the transition from education to work. These barriers can include seniority wages or high severance payments. A comprehensive review of existing benefits systems and an investigation of possible distortions of the benefits system on the labour market can contribute to a general enhancement of the employment rate.

### **Facilitating regional and cross-border mobility**

Policy makers should also facilitate the mobility of working-age people, including both younger and older workers, to best available jobs, implying both sectoral and occupational mobility as well as regional and cross-border mobility, which is an important lever in reducing mismatch within the labour market and making productive use of increasingly scarce human resources. Initiatives taken at European level complementary to national policies can promote occupational, regional and cross-national mobility. Accordingly, while mobility-friendly labour markets with appropriate training and skill adjustment infrastructure represent one element, policies to ease labour market mismatch by encouraging regional and trans-border mobility are equally important. In a situation of high youth unemployment, opportunities available in neighbour countries represent an important option to avoid unemployment and make productive use of acquired skills. Nonetheless, advancing cross-border mobility represents a challenging task, and major progress is only possible with sufficient support from all stakeholders. Strengthening the mobility at the European level constitutes a step in the right direction.

### **Reforming employment protection legislation**

Apart from mobility support and skills adjustment, it is also necessary to address regulatory issues in this context. Unbalanced employment protection legislation creates barriers to mobility, thus leaving younger people in a vulnerable situation characterised by temporary employment spells, and discouraging the job-to-job or occupational mobility of prime-aged or older workers due to strong dismissal protection. Here, reforms of labour market regulation should facilitate transitions between jobs and firms, reducing barriers to labour market entry and transitions between different forms of employment. This issue challenges the duality between strict dismissal protection for permanent workers and highly flexible temporary contracts or self-employment, which is characteristic for many EU Member States.

### **Initial vocational education and training as well as continuous skill updating and retraining**

The importance of initial vocational education and training as well as continuous skill updating and retraining during the working life cannot be overstated. Acquiring and adjusting job-related skills is essential in a dynamically changing economy, where future job creation also depends on speedy technological innovation and adjustment. While this is relevant for all, it is particularly the case for young people, where initial training and early work experience help to establish a solid employment record, as well as for older workers, whose productivity and employability would be at risk if skills become obsolete owing to a neglect of continuous training. Given that young people benefit most from proper vocational education and training and early work experience, general policies should be initiated to establish a strong learning component combined with work experience, such as the models found in countries with dual vocational training systems, which can be adjusted to national, sectoral or occupational requirements and preconditions. Furthermore, tertiary graduates could often benefit from some elements of duality within their educational curriculum. Finally, given that productivity does not automatically decline with age and can be maintained or improved with appropriate policies, there is a strong potential for labour force productivity and adaptability to be gained from continuous job-related training over the life cycle.

## REFERENCES

- Alpert A, Powell D (2012) Tax elasticity of labor earnings for older individuals. Michigan Retirement Research Center Research Paper No WP 2012-272. doi: 10.2139/ssrn.2188401
- Arbeiterkammer (2009) Berufsausbildungsgesetz (BAG). AKTUELL, Das Info-Service der AK 8. Wien
- Aubert P (2003) Productivity, wage and demand for elder workers: An examination of French matched employer-employee data. Technical report. INSEE, Paris
- Aubert P, Caroli E, Roger M (2006) New technologies, organisation and age: firm-level evidence. *The Economic Journal* 116:F73–F93. doi: 10.1111/j.1468-0297.2006.01065.x
- Auten G, Carroll R, Gee G (2008) The 2001 and 2003 tax rebate reductions: An overview and estimate of the taxable income response. *National Tax Journal* 61:345–364
- Autor DH, Duggan MG (2003) The rise in disability reciprocity and the decline in unemployment. *The Quarterly Journal of Economics* 118:157–205. doi: 10.1162/00335530360535171
- Avolio BJ, Waldman DA, McDaniel MA (1990) Age and work performance in nonmanagerial jobs: The effects of experience and occupational type. *Academy of Management Journal* 33:407–422. doi: 10.2307/256331
- Balakrishnan R, Berger H (2009) Regional economic outlook: Comparing recessions in Germany, Spain, and United Kingdom. *IMF Survey Magazine*. <http://www.imf.org/external/pubs/ft/survey/so/2009/num11809a.htm>. Accessed 27 November 2013
- Barth MC, McNaught W, Rizzi P (1993) Corporations and the aging workforce. In: Mirvis PH (ed) *Building the competitive work-force: Investing in human capital for corporate success*. Wiley, New York, pp 156-200
- Bassanini A, Duval R (2006) Employment patterns in OECD countries: Reassessing the role of policies and institutions. *OECD Social, Employment and Migration Working Paper No 35*. OECD, Paris
- Behaghel L, Crépon B, Sédillot B (2004) Contribution Delalande et transitions sur le marché du travail. *Économie et Statistique* 372:61–88. doi: 10.3406/estat.2004.7267
- Bentolila S, Dolado JJ, Jimeno JF (2012) Reforming an insider-outsider labor market: the Spanish experience. *IZA Journal of European Labor Studies* 1:1–29. doi: 10.1186/2193-9012-1-4
- Biavaschi C, Eichhorst W, Giulietti C, Kendzia MJ, Muravyev A, Pieters J, Rodriguez-Planas N, Schmidl R, Zimmermann KF (2012) Youth unemployment and vocational training. *IZA Discussion Paper No 6890*. IZA, Bonn

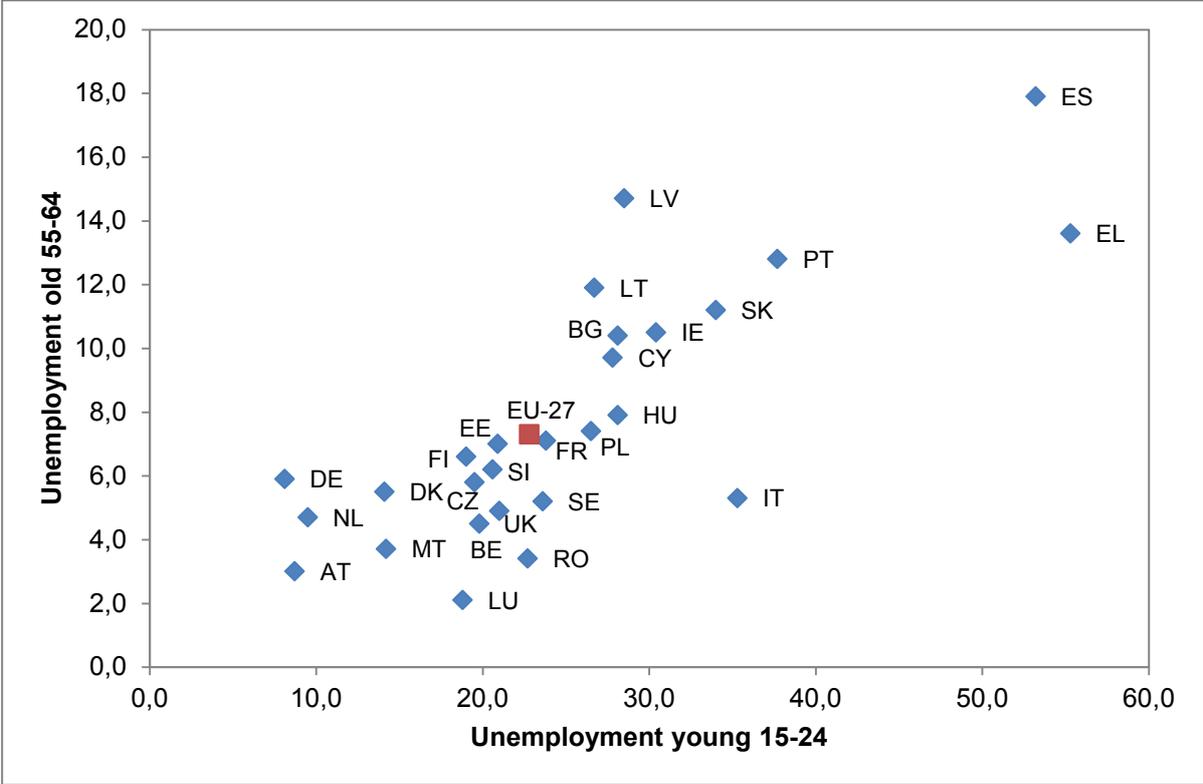
- Boeri T (2011) Institutional reforms and dualism in European labor markets. In: Card D, Ashenfelter O (eds) Handbook of labor economics: Part B. 4th edn. Elsevier, Amsterdam, pp 1173-1236
- Boeri T, van Ours JC (2013) The Economics of Imperfect Labor Markets, Princeton University Press, 2nd edition
- Boone J, van Ours JC (2004) Effective active labor market policies. IZA Discussion Paper No 1335. IZA, Bonn
- Chan S, Stevens AH (1999) Employment and retirement following a late-career job loss. American Economic Review 89:211–216. doi: 10.1257/aer.89.2.211
- Chan S, Stevens AH (2001) Job loss and employment patterns of older workers. Journal of Labor Economics 19:484–521. doi: 10.1086/319568
- Council of the European Union (2013) Proposal for a council recommendation on establishing a youth guarantee No 6463/13. Brussels, 22 February 2013
- Daniel K, Heywood JS (2007) The determinants of hiring older workers. Labour Economics 14:35–51. doi: 10.1016/j.labeco.2005.05.009
- De Grip A, van Loo J (2002) The economics of skills obsolescence: a review. In: de Grip A, van Loo J, Mayhew K (eds) The economics of skills obsolescence: Theoretical innovations and empirical applications (Research in labor economics, Vol 21). Elsevier, London, pp 1–26
- De Jong P, Lindeboom M, van der Klaauw B (2011) Screening Disability Insurance Applications. Journal of the European Economic Association 9: 106-129. doi: 10.1111/j.1542-4774.2010.01002.x
- Dostie B (2011) Wages, productivity and aging. De Economist 159: 139-158. doi: 10.1007/s10645-011-9166-5
- Dygalo NN, Abowd JM (2005) Estimating experience-productivity profiles from earnings over employment spells. Working paper. University of Western Ontario, London CN
- Eichhorst W, Hinte H, Rinne U (2013) Youth unemployment in Europe: What to do about it? IZA Policy Paper No 65. IZA, Bonn
- Eurofound (2012) Employment trends and policies for older workers in the recession. Publications Office of the European Union, Luxembourg. <http://www.ilo.org/public/libdoc/igo/2012/470631.pdf>. Accessed 27 November 2013
- European Commission (2008) The 2009 Ageing Report: Underlying Assumptions and Projection Methodologies. European Economy 7. doi: 10.2765/51050
- European Commission (2010) A new impetus for European cooperation in vocational education and training to support the Europe 2020 strategy. Communication from the commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions
- European Commission (2011a) Youth employment measures 2010. European Employment Observatory Review. doi: 10.2767/21405

- European Commission (2011b) Youth on the move: A Europe 2020 initiative. [http://ec.europa.eu/youthonthemove/about/policy-actions/index\\_en.htm](http://ec.europa.eu/youthonthemove/about/policy-actions/index_en.htm). Accessed 27 November 2013
- European Commission (2012a) Preparatory action “youth guarantee”: Supporting partnerships for activation measures targeting young people through projects in the context of youth guarantee schemes at national, regional or local level. Call for proposals No VP/2012/012
- European Commission (2012b) The 2012 Ageing Report: Economic and budgetary projections for the 27 EU Member states (2010-2060). European Economy 2. doi: 10.2765/19991
- European Commission (2013) Youth employment: Commission welcomes Council agreement on youth guarantee. [http://ec.europa.eu/youth/news/20130301-youth-guarantee\\_en.htm](http://ec.europa.eu/youth/news/20130301-youth-guarantee_en.htm). Accessed on 27 November 2013
- Federal Ministry of Labour and Social Affairs (2010) Training pact: National pact to promote training and young skilled workers in Germany. <http://www.bmas.de/EN/Our-Topics/Initial-and-Continuing-Training/training-pact.html>. Accessed 27 November 2013
- Fornero E (2012) Jobs for Europe. The employment policy conference on 6-7 September 2012. European Commission, Brussels
- Graf N, Hofer H, Winter-Ebmer R (2011) Labor supply effects of a subsidized old-age part-time scheme in Austria. Journal for Labour Market Research 44:217–229. doi: 10.1007/s12651-011-0072-8
- Gruber J, Kubik JD (1997) Disability insurance rejection rates and the labour supply of older workers. Journal of Public Economics 64:1–23. doi: 10.1016/S0047-2727(96)01590-3
- Gruber J, Wise DA (2010) Social security programs and retirement around the world: The relationship to youth employment. The University of Chicago Press, Chicago IL and London
- Hakola T, Uusitalo R (2005) Not so voluntary retirement decisions? Evidence from a pension reform. Journal of Public Economics 89:2121–2136. doi: 10.1016/j.jpubeco.2004.12.001
- Hakola T, Määttänen N (2007) The effect of the pension reform on retirement age and income distribution – estimates from a dynamic programming model. Finnish Centre for Pensions, Helsinki
- Hellerstein JK, Neumark D, Troske KR (1999) Wages, productivity and worker characteristics: Evidence from plant-level production function and wage equations. Journal of Labor Economics 17:409–446. doi: 10.1086/209926
- Hijzen A, Venn D (2011) The role of short-time work schemes during the 2008-09 recession. OECD Social, Employment and Migration Working Paper No 115. doi: 10.1787/5kgkd0bbwvxp-en

- Hohbein A, Wieland C (2011) Ausbildungsgarantie zur Fachkräftesicherung: Die Initiative "Übergänge mit System" und was Deutschland von Österreich lernen kann. *Berufsbildung* 131:40–41
- Ilmakunnas P, Maliranta M (2005) Technology, labor characteristics and wage-productivity gaps. *Oxford Bulletin of Economics and Statistics* 67:623–45
- ILO (2010) Global employment trends for youth: Special issue on the impact of the global economic crisis on youth. International Labour Office, Geneva
- IMF (2012) Italy: Selected issues. IMF country report No 12/168. IMF, Washington D.C.
- Johansson P, Laun L, Laun T (2012) Screening stringency in the disability insurance program. In: Laun L (ed) *Studies on social insurance, income taxation and labour supply*. Stockholm University, Stockholm, pp 83–114
- Johnson P (1993) Ageing and European economic demography. In: Johnson P, Zimmermann KF (eds) *Labour markets in an ageing Europe*. Cambridge University Press, Cambridge
- Karlström A, Palme M, Svensson I (2008) The employment effect of stricter rules for eligibility for DI: Evidence from a natural experiment in Sweden. *Journal of Public Economics* 92:2071–2082. doi: 10.1016/j.jpubeco.2008.04.014
- Kluve J (2006) The effectiveness of European active labor market policy. IZA Discussion Paper No 2018. IZA, Bonn
- Koenig P, van Vuuren DJ (2010) Disability insurance and unemployment insurance as substitute pathways. *Applied Economics* 42:575–588. doi: 10.1080/00036840701704436
- Lexology (2012) The Reform of Italian Employment Law (92/2012): A practical overview. <http://www.lexology.com/library/detail.aspx?g=9ab9c7b6-ba7b-4b3e-8a75-cae72bdad0aa>. Accessed 27 November 2013
- Remery C, Henkens K, Schippers J, Ekamper P (2003) Managing an aging workforce and a tight labor market: Views held by Dutch employers. *Population Research and Policy Review* 22:21–44. doi: 10.1023/A:1023543307473
- Rosen S (1975) Measuring the obsolescence of knowledge. In: Juster FT (ed) *Education, income and human behaviour*. Carnegie Foundation and Columbia University Press, New York, pp 199–232
- Saez E, Slemrod J, Giertz S (2012) The elasticity of taxable income with respect to marginal tax rates: A critical review. *Journal of Economic Literature* 50:3–50. doi: 10.1257/jel.50.1.3
- Skill (2009) Staying in education or training until you are 18. <http://www.skill.org.uk/youth/page.aspx?c=309&p=430>. Accessed 27 November 2013
- Staubli S (2011) The impact of stricter criteria for disability insurance on labor force participation. *Journal of Public Economics* 95:1223–1235. doi: 10.1016/j.jpubeco.2011.05.008

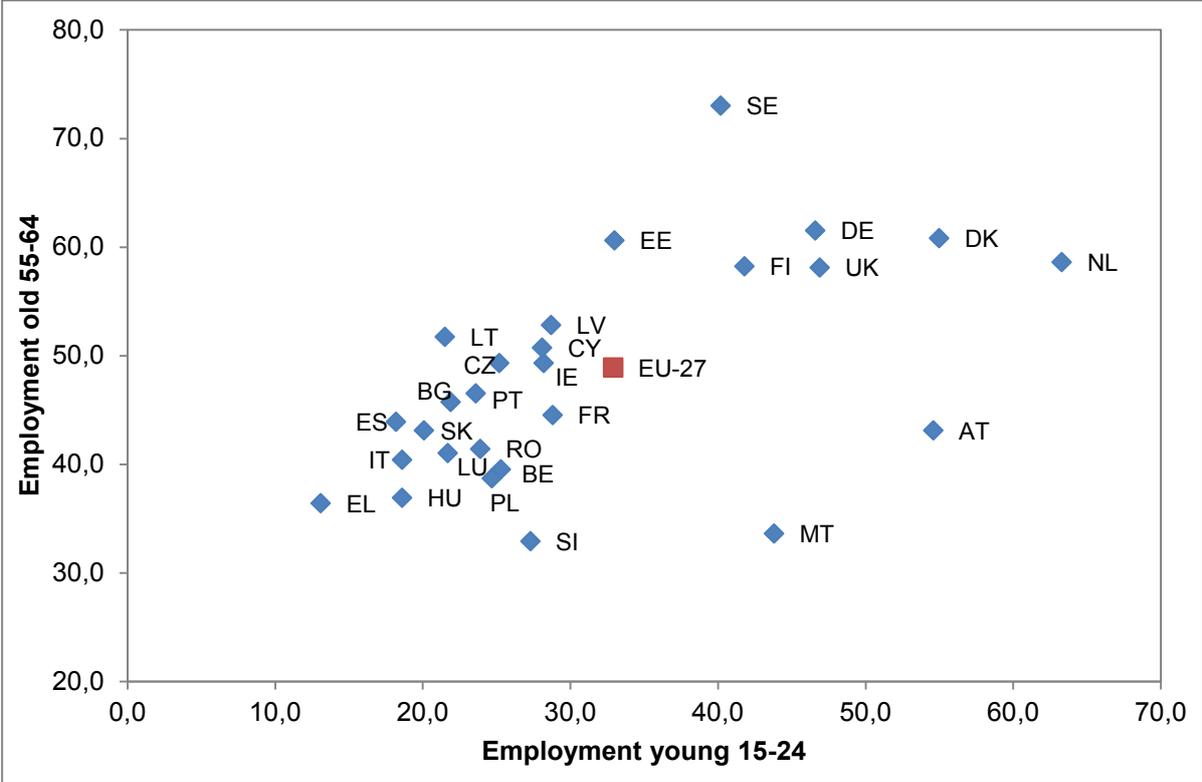
- Staubli S, Zweimüller J (2011) Does raising the retirement age increase employment of older workers? IZA Discussion Paper No 5863. IZA, Bonn
- Van Dalen HP, Henkens K (2002) Early-retirement reform: Can it and will it work? *Ageing and Society* 22:209–231. doi: 10.1017/S0144686X02008656
- Wanger S (2009) Altersteilzeit: Beliebt, aber nicht zukunftsgerecht. IAB Kurzbericht 8. IAB, Nuremberg
- Warr P (1998) Aging, competence and learning at work. Aging of the Workforce workshop on 23-24 March. Brussels

Figure 1: Unemployment rates of the two age groups, 2012



Source: Eurostat (2012).

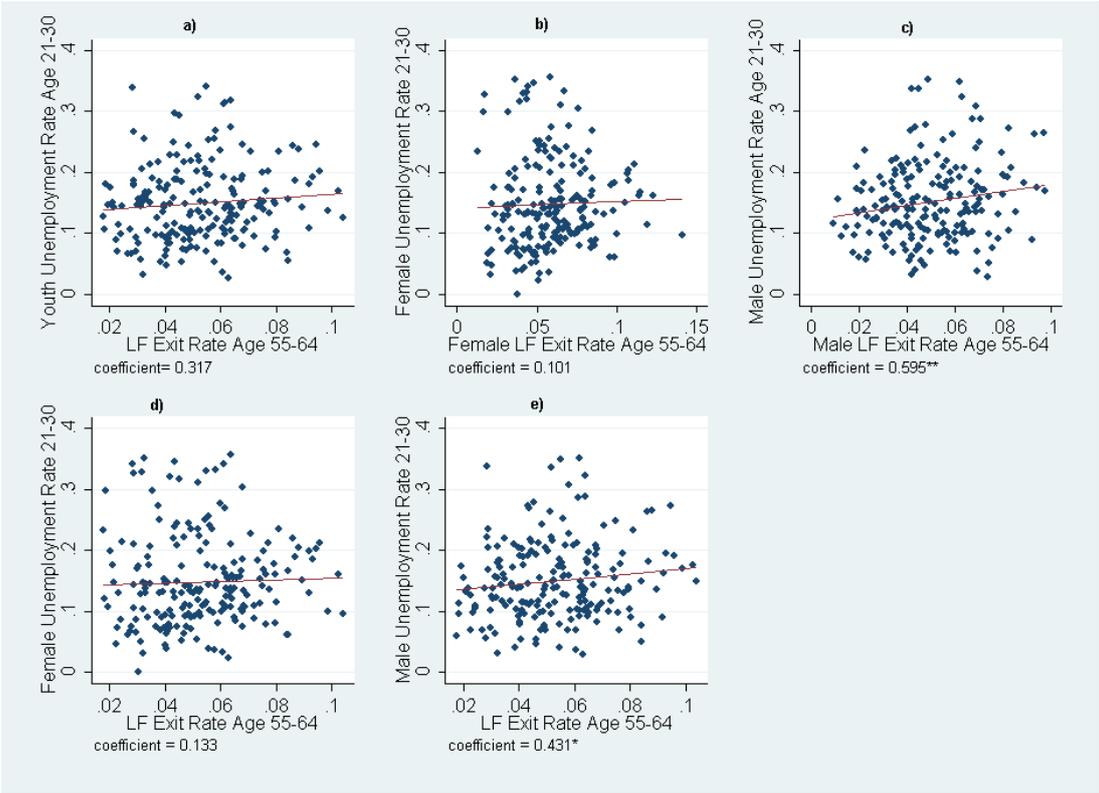
**Figure 2: Employment rates of the two age groups, 2012**



Source: Eurostat (2012).

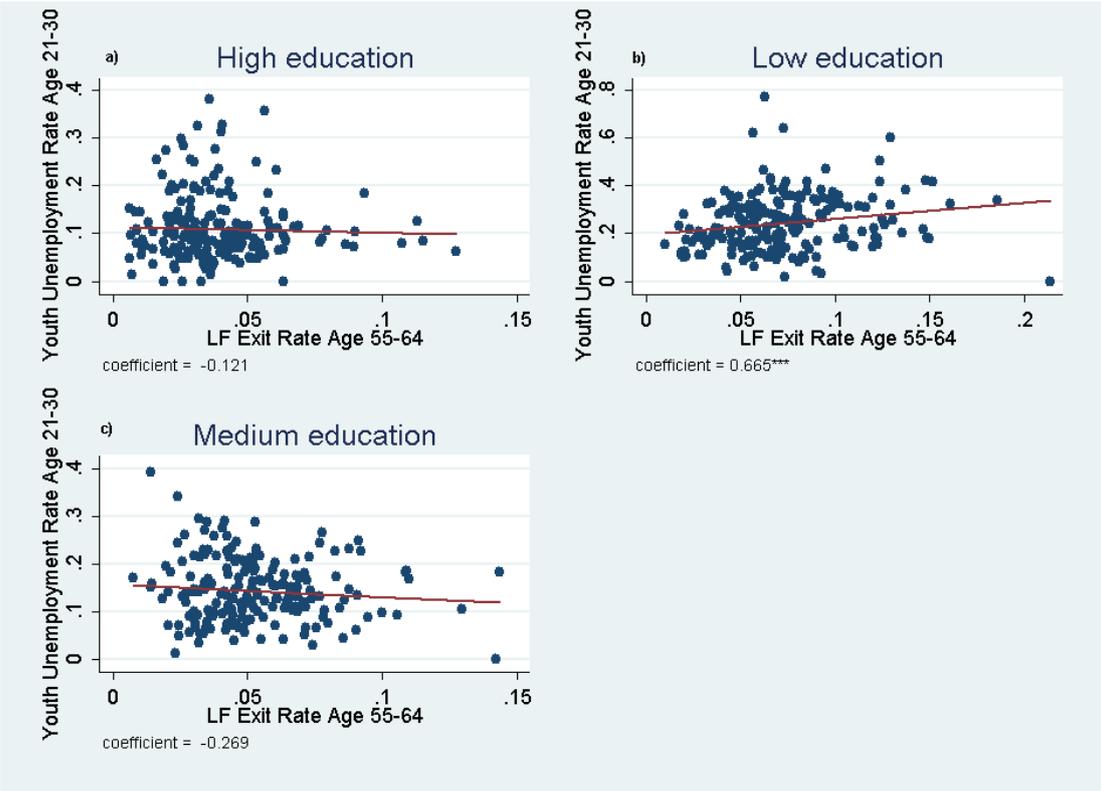
**Appendix:**

**Figure 3: Elderly exit rate, youth unemployment rate and gender**



**Source:** Labour Force Survey 2009.

**Figure 4: Elderly exit rate and youth unemployment rate by level of education**



**Source:** Labour Force Survey 2009.

**Table 1: Youth (un)employment rate vs. rate of elderly (un)employed workers in 2008 and 2012**

GEO/TIME	Youth unemployment rates (%)			Youth employment rates (%)			Elderly unemployment rates (%)			Elderly employment rates (%)		
	2008	2012	Difference	2008	2012	Difference	2008	2012	Difference	2008	2012	Difference
European Union (EU-27)	15.6	22.8	7.2	37.4	32.9	-4.5	5.1	7.3	2.2	45.6	48.9	3.3
Belgium	18.0	19.8	1.8	27.4	25.3	-2.1	4.4	4.5	0.1	34.5	39.5	5.0
Bulgaria	12.7	28.1	15.4	26.3	21.9	-4.4	5.5	10.4	4.9	46.0	45.7	-0.3
Czech Republic	9.9	19.5	9.6	28.1	25.2	-2.9	3.9	5.8	1.9	47.6	49.3	1.7
Denmark	8.0	14.1	6.1	66.4	55.0	-11.4	2.6	5.5	2.9	58.4	60.8	2.4
Germany	10.6	8.1	-2.5	46.6	46.6	0.0	8.5	5.9	-2.6	53.7	61.5	7.8
Estonia	12.0	20.9	8.9	36.4	33.0	-3.4	4.1	7.0	2.9	62.4	60.6	-1.8
Ireland	12.7	30.4	17.7	45.9	28.2	-17.7	3.3	10.5	7.2	53.7	49.3	-4.4
Greece	22.1	55.3	33.2	23.5	13.1	-10.4	3.2	13.6	10.4	42.8	36.4	-6.4
Spain	24.6	53.2	28.6	36.0	18.2	-17.8	7.3	17.9	10.6	45.6	43.9	-1.7
France	18.6	23.8	5.2	31.3	28.8	-2.5	4.6	7.1	2.5	38.2	44.5	6.3
Italy	21.3	35.3	14.0	24.4	18.6	-5.8	3.1	5.3	2.2	34.4	40.4	6.0
Cyprus	9.0	27.8	18.8	38.0	28.1	-9.9	3.2	9.7	6.5	54.8	50.7	-4.1
Latvia	13.1	28.5	15.4	37.2	28.7	-8.5	6.2	14.7	8.5	59.4	52.8	-6.6
Lithuania	13.4	26.7	13.3	26.7	21.5	-5.2	4.4	11.9	7.5	53.1	51.7	-1.4
Luxembourg	17.9	18.8	0.9	23.8	21.7	-2.1	n/a	2.1	n/a	34.1	41.0	6.9
Hungary	19.9	28.1	8.2	20.0	18.6	-1.4	5.0	7.9	2.9	31.4	36.9	5.5
Malta	12.2	14.2	2.0	45.8	43.8	-2.0	4.0	3.7	-0.3	29.3	33.6	4.3
Netherlands	5.3	9.5	4.2	69.3	63.3	-6.0	3.2	4.7	1.5	53.0	58.6	5.6
Austria	8.0	8.7	0.7	55.9	54.6	-1.3	2.1	3.0	0.9	41.0	43.1	2.1
Poland	17.3	26.5	9.2	27.3	24.7	-2.6	5.3	7.4	2.1	31.6	38.7	7.1
Portugal	16.4	37.7	21.3	34.7	23.6	-11.1	6.6	12.8	6.2	50.8	46.5	-4.3
Romania	18.6	22.7	4.1	24.8	23.9	-0.9	2.5	3.4	0.9	43.1	41.4	-1.7
Slovenia	10.4	20.6	10.2	38.4	27.3	-11.1	4.0	6.2	2.2	32.8	32.9	0.1
Slovakia	19.0	34.0	15.0	26.2	20.1	-6.1	6.4	11.2	4.8	39.2	43.1	3.9
Finland	16.5	19.0	2.5	44.7	41.8	-2.9	5.4	6.6	1.2	56.5	58.2	1.7
Sweden	20.2	23.6	3.4	42.2	40.2	-2.0	3.8	5.2	1.4	70.1	73.0	2.9
United Kingdom	15.0	21.0	6.0	52.4	46.9	-5.5	3.1	4.9	1.8	58.0	58.1	0.1

Source: Eurostat, Ifsa\_organ &amp; Ifsa\_organ (Last updated November 18, 2013)