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Using Education and Training to Prevent and Combat Youth Unemployment

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Prepared for the European Commission

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EENEE Analytical Report

Using Education and Training to Prevent and Combat Youth Unemployment[1]

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Content

[1]Analytical Report of the European Expert Network on Economics of Education (EENEE) prepared for the European Commission.

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Executive Summary

Labour market, education, and training institutions play a key role in shaping the way countries tackle youth unemployment. Youth unemployment and disengagement from both education and work are negatively associated with levels of completed education and skill proficiency. This report focuses on the supply aspect of the youth unemployment problem. It examines the role of education and training in preventing and combating youth unemployment by providing the existing evidence as found in recent economic research. (The report does not focus on the short-term cyclical developments of labour demand). By focusing on cutting-edge empirical findings and by examining country reforms recently introduced it discusses empirical evidence at different stages of the education system, ranging from early childhood to early adulthood. The report discusses recent empirical evidence related to three main strategies. First, the report examines existing evidence which highlights the importance of focusing on the quality of education, and *improving actual learning outcomes and skill proficiency for all*. In this context, research highlights the critical role of expanding education and fostering educational attainment and its long-run labor-market effects, mostly in middle-class or lower middle-class families. Second, the report focuses on *preventive* strategies which target children from a disadvantaged background. Empirical findings in this area show the central importance of early childhood interventions with respect to both cognitive and non-cognitive skills. Third, the report discusses *remedial* strategies. These are interventions at a later stage targeted towards disadvantaged families, as well as of other interventions that target those young adults who have already experienced, or are experiencing youth unemployment. Existing evidence also highlights the importance of improving learning outcomes of youth and providing youth with support during the critical transition from school to first employment. The design of policies

and interventions employed by EU countries has varied. Case studies of recent successful reforms are presented. Policy responses should take into account the institutional complexity of each Member State. Particular attention should be devoted to collecting data and rigorously evaluating pilot schemes and existing programs and interventions in a field where prejudices abound.

Résumé

Le marché du travail, le système éducatif et de formation jouent un rôle clé dans les choix adoptés par les pays dans leur lutte contre le chômage des jeunes. Le chômage des jeunes et le retrait du système éducatif et du marché du travail sont négativement associés au niveau scolaire et au niveau des connaissances de ces jeunes. Notre rapport se concentre sur l'offre de travail des jeunes. En particulier, il examine le rôle de l'éducation et de la formation pour prévenir et combattre le chômage des jeunes en présentant les résultats de recherches économiques récentes. (Le rapport ne se concentre pas sur le développement cyclique de la demande de travail de court terme). En se concentrant sur les résultats empiriques « à la frontière » et en examinant les réformes introduites récemment dans plusieurs pays, le rapport présente les connaissances empiriques sur les différents niveaux du système éducatif ; du niveau préscolaire jusqu'à l'âge adulte. Le rapport examine les résultats des recherches qui portent sur trois stratégies. Premièrement, les travaux de recherche recensés soulignent l'importance que revêt la qualité de l'enseignement, sans négliger l'importance des connaissances acquises par les étudiants. Les résultats des études récentes démontrent l'importance de promouvoir l'expansion de la scolarité, et garantir l'efficacité de l'apprentissage en termes de résultats, en particulier pour les classes moyennes ou « populaires supérieures ». Deuxièmement, notre rapport se concentre sur la stratégie de *prévention* pour les enfants des familles les plus démunies. Les études existantes montrent l'importance des interventions préscolaires pour ce qui concerne les compétences cognitives et non-cognitives. En troisième lieu, notre rapport présente les stratégies *correctives*. Celles-ci comprennent d'autres interventions lorsque les enfants sont plus âgés pour les familles les plus démunies. Les résultats des recherches montrent le rôle crucial des interventions pour aider ceux qui sont

(ou ont été) au chômage. Ces recherches montrent aussi l'importance qu'il y a à améliorer les résultats et de fournir soutien au cours de la transition entre école et premier emploi. Les stratégies utilisées par les pays Européens reposent sur des combinaisons très variées. Certaines réformes récentes ayant connu un succès important sont présentées. Nous rappelons que la structure des politiques adoptées doit prendre en compte la complexité institutionnelle de chaque Etat Membre. Une attention particulière doit être portée à la mise à disposition de données afin d'évaluer les politiques futures ainsi que les programmes déjà en place dans un domaine, l'éducation, où les préjugés sont très forts.

Zusammenfassung

Arbeitsmarkt-, Bildungs- und Ausbildungsinstitutionen spielen eine Schlüsselrolle für die Art und Weise, wie Länder Jugendarbeitslosigkeit bekämpfen. Jugendarbeitslosigkeit und ein Rückzug aus Bildung und Arbeit hängen negativ mit dem Bildungs- und Kompetenzniveau zusammen. Dieser Bericht beschäftigt sich mit der Angebotsseite des Jugendarbeitslosigkeitsproblems. Er untersucht, welche Rolle Bildung und Ausbildung dabei spielen, Jugendarbeitslosigkeit zu verhindern und zu bekämpfen, indem er die empirische Evidenz der aktuellen ökonomischen Forschung zusammenfasst. (Der Bericht befasst sich nicht mit den kurzfristigen zyklischen Entwicklungen des Arbeitsangebots.) Indem die aktuellsten empirischen Ergebnisse zusammengefasst und kürzlich eingeführte Länderreformen untersucht werden, wird die empirische Evidenz an unterschiedlichen Stufen des Bildungssystems von der frühkindlichen Bildung bis hin zum jungen Erwachsenenalter, diskutiert. Der Bericht diskutiert aktuelle empirische Evidenz, die sich auf drei Hauptstrategien bezieht. Zuerst untersucht der Bericht bestehende empirische Evidenz, die betont, wie wichtig es ist, sich auf die Bildungsqualität zu konzentrieren und darauf, *tatsächliche Lernergebnisse und das Kompetenzniveau für alle zu verbessern*. In diesem Zusammenhang hebt die Forschung die kritische Bedeutung von einer Ausweitung von Bildung und einer Verbesserung des Bildungsniveaus und dessen langfristige Arbeitsmarkteffekte, besonders für Mittel- und untere Mittelklasse-Familien, hervor. In einem zweiten Schritt konzentriert sich der Bericht auf *präventive* Strategien, die auf Kinder aus benachteiligten Verhältnissen abzielen. Empirische Ergebnisse aus diesem Forschungsfeld zeigen die zentrale Bedeutung von Interventionen in der frühen Kindheit in Bezug sowohl auf kognitive als auch auf nicht-kognitive Fähigkeiten. In einem dritten Schritt diskutiert der Bericht *rehabilitierende* Strategien. Das sind Interventionen

zu einem späteren Zeitpunkt, die sich an benachteiligte Familien richten, ebenso wie andere Interventionen, die sich an solche jungen Erwachsenen richten, die bereits Jugendarbeitslosigkeit erlebt haben oder gerade erleben. In EU Ländern wurden unterschiedliche Politikmaßnahmen und Interventionen angewendet. Fallstudien zu aktuellen erfolgreichen Reformen werden vorgestellt. Die politischen Reaktionen sollten die institutionelle Komplexität jedes Mitgliedstaates berücksichtigen. Besondere Aufmerksamkeit sollte dem Sammeln von Daten und der strikten Evaluierung von Politprojekten und existierenden Programmen und Interventionen zukommen, besonders dort, wo Vorurteile bestehen.

I] Introduction

"Unemployment levels are alarmingly high, concealing many different realities and causes that often run deep", Herman Van Rompuy, President of the European Council, June 2013

"The lost generation […] Failing to employ the young today damages growth now and in the future", The Economist, May 2013

"La tasa de paro juvenil vuelve a superar el 55% en el cuarto trimestre de 2013", El Pais, January 2014

"Garanzia Giovani, dal governo 1,5 miliardi di euro contro la disoccupazione", La Repubblica, March 2014

Youth unemployment is considered by many to be one of the most pressing issues facing European governments, and is high on the agenda of EU leaders. According to recent statistics the average EU28 youth unemployment rate (age 15-24) is equal to 23.4% with significant heterogeneity across European countries [Eurostat 2014] which has been further strengthened after the economic downturn leading some advanced economies to reach the highest levels of youth unemployment ever recorded [ILO 2010].

When too high, youth unemployment should be regarded as a serious problem. Central to human capital theory is the idea that the acquired skills contribute to the individual's productivity and as an investment they affect the individual and societal returns.[2] According to Becker (1964; 1993), human capital is "what is embodied in one person in terms of knowledge, skills and health" and is relevant to the production process. It is therefore clear that with respect to skills, being also acquired on-the-job and through training and subject to obsolescence, a loss of employment generates a loss of human capital which, depending on the nature and spell of unemployment, may have a significant private and societal cost. In the case of the youth, there may be additional negative multiplier effects. In addition to this, a loss of autonomy and economic independence are also perceived as

[2] For greater details on human capital theory and the role of education in fostering individual and societal prosperity see the opening report by Ludger Woessmann on "The Economic Case for Education".

undesirable consequences that may affect the long-run trajectory of intergenerational mobility.

However, unemployment is normally much higher for younger than for older workers. Young people have higher turnover rates, and higher unemployment rates than adults (Freeman and Wise 1982; Topel and Ward 1992). These features reflect natural characteristics of this market: search (low reservation wage and opportunity cost) as well as assortative matching. Central is the concept of positive assortative matching whereby firms and workers are complements, with the most skilled/productive workers allocated to the most productive firms.[3] In this context, the process of matching, that is the sorting of workers of different levels of ability and productivity into different jobs, may require some time leading to turnover and unemployment spells. The important question is related to the quality of the 'matching function':[4] to what extent is the flow of new hires related to the stocks of vacancies and unemployment? To what extent and how do workers and firms' behaviour shape the transition from unemployment to employment?

More generally, a low level of unemployment is normal in a dynamic economy. To a certain extent job destruction is essential for the reallocation of resources to the sectors of the economy where they are needed. The evolutionary process of job destruction and job creation is therefore necessary for economic growth (Schumpeter 1942; Cahuc and Zylberberg 2004, 2006). Potentially young people are the most dynamic. Entry of new firms matters (because they hire the young), hence product market competition matters with the associated entry and exits (and we will talk about it later in this section). When a country seems to have mostly a "youth problem" and much less an older workers problem, it is likely that it protects its old firms too much with respect to the potential entrants. In this regard, is youth unemployment a problem? Or is it a symptom of other dysfunctions of something larger, other deeper problems in the economy?

[3] Seminal work in this area is Becker (1973) who focuses on assortative matching in the context of a neoclassical marriage market model. References related to assortative matching in the labour market include Abowd et al. (1999), Shimer and Smith (2000) and Shimer (2005).

[4] For a review of the literature on job search and matching functions see Rogerson et al. (2005).

The current scale of the problem (see Appendix A1.2) and the length of unemployment spells suggest that this is not an ordinary and transitory phenomenon but the youth has been disproportionately affected since the outset of the economic downturn (e.g., Bell and Blanchflower 2011; Scarpetta et al. 2010). In spite of attempts of reforming labour markets, several European countries are characterized by increasingly dual labour market segmentation between temporary and permanent-contract workers. The ratio between the youth and adult unemployment rates has reached for some Member States post-crisis levels that vary between two and three (Bivaschi et al. 2013) and the share of young people disconnected from the labour-market has also increased (Logez 2013). In this regard, the way unemployment affects its youth is revealing of each country situation and problems: different traits of unemployment emerge across countries. This calls for an understanding of the nature of youth unemployment and the multi-dimensionality of the policy response. Both labour-market and education/training (E&T) systems appear to be fundamental factors that shape youth unemployment. This report is going to focus to a greater extent on the role of education and training. The report aims at discussing the role of education and training policies in preventing and combating youth unemployment[5]. By focusing on the most recent and cutting-edge empirical research the aim is to provide an overview of the evidence related to the impact of policies that aim at addressing youth unemployment along different educational and training dimensions that span from early childhood to early adulthood. Our presentation will be structured around three main strategies: those interventions that are intended to apply to *all* children, those interventions that should focus on the more disadvantaged as *preventive strategies*, and those educational and training programs that should target adolescent and young adults in order to correct for past ills, i.e. *remedial strategies.*

The analysis proceeds as follows. This section discusses the evidence related to the nature of youth unemployment, as well some evidence about the long-lasting consequences. Section 2 critically reviews the empirical evidence related to the role that education and training play in preventing and combating youth unemployment by focusing on the three strategies outlined above. It also discusses some aspects related to the process of finding the first post-graduation job and presents empirical evidence on the schemes that aim at facilitating the school-to-work

[5] The aim of the report is not examining the economic causes of youth unemployment.

transition. Section 3 examines recent country reforms by highlighting evidence on factors critical for effective interventions. Last section concludes and provides policy recommendations.

1.1 Causes of Youth Unemployment

A summary of the key indicators related to youth unemployment and some stylized facts are presented in the appendix (sections A1.1 and A1.2).

There are several factors that are regarded as possible determinants of youth unemployment. Factors such as poor macroeconomic performance, institutional rigidities in the labour and product markets as well as the lack of educational qualifications and the mismatch between demand and supply of skills have all received some empirical support. Thus, the causes for youth unemployment appear to be complex and multi-dimensional. The analysis of these causes goes beyond the scope of this report. In what follows we are going to provide a brief overview of those factors most closely related to the focus of this study.

As suggested by the graphs, presented in the appendix, displaying cross-country comparisons among Member States, there is a strong inverse association between *educational attainment, skill proficiency* and youth unemployment. Youth joblessness and disengagement from the labour market appear to be most pronounced among young adults with lower levels of completed education and lower levels of skill proficiency. However, it is also important to notice that the unemployment rates for the less educated are more heterogeneous across countries than those for the more educated ones. Moreover, in countries with very high levels of unemployment, joblessness is more pervasive and also affects more educated individuals. For example, in some countries there is also a substantial number of medium or even high-qualified youth with low employment prospects (see i.e. Tertiary NEETS in Greece, secondary NEETs in Slovak Republic and Poland or Tertiary unemployed in Italy, Spain and Greece). This relationship appears to have further strengthened with the economic downturn, which had a deeper impact in the countries with already high (youth) unemployment (OECD

2013c). ***Because it is where education systems have a central role and full legitimacy and where policies are implemented and enforced that their impact can be examined, the next chapters will come back to the supply aspect of the youth unemployment problem by discussing state-of-the-art evidence on the impact of interventions on fostering youth employment and reducing unemployment.*** However, we must at this stage mention *demand* aspects too. In the remaining of this section recent empirical evidence related to the demand aspects is going to be presented. This section does not aim at drawing any conclusions or policy implications.

Indeed, *mismatch between demand and supply of skills* has received some attention in the existing literature. However, existing research has largely focused on the supply side of the labour market without considering the demand for labour. Some descriptive evidence suggests heterogeneity with respect to the skill mismatch between skills of the unemployed and skills demanded by employers. Manacorda and Petrongolo (1999) examine a set of 11 OECD countries over 1970-94, and find an increase in the skill mismatch correlated to education over time in some of the European countries in their sample (Britain, France, Germany, Italy and Spain) but this cannot explain the rise in unemployment in continental Europe. More recent reports and surveys also document the skill mismatch by highlighting the interaction between a changing demand and supply of skills, and the weak labour market integration of the youth (Conjearts et al. 2009; ILO 2013; McKinsey 2014).

More directly on the demand side, *labour market competition* has also received significant attention in the literature. Institutions such as the minimum wage, employment protection and union coverage may lead to divergent employment outcomes, making demand for labour less responsive to changes in wages. Existing research highlights the complexity of the evidence. From a firm perspective arguments are often that the young are not trained in the right way (e.g., recent survey of 2,600 employers in Europe by McKinsey (2014)). On the other hand, some incentives can lead to a greater involvement of the private sector in the provision of training. A review of the existing studies is presented by Ferracci (2013). Leuven and Oosterbeek (2004) examine the effect of tax deduction on participation to training. By exploiting a change in the Dutch legislation of tax deductions for work-related training

provided by firms they find mixed evidence over its impact. An increase in the training rate is partly explained by the postponement of training after 40, for which the greater tax deduction is provided.

Some recent research also suggests that the reported skill gap has not led to a change in the level of wages to address the skill shortage (e.g., Osterman and Weaver 2014). Many factors may contribute. It might be that firms have little incentive to hire the latest graduates coming from the education system because of labour-market rigidities and a lack of product market competition. Related to this is a growing area of research on the age composition of new firms. Haltiwanger et al. (2013) by relying on the U.S. Census Bureau's Business Dynamics Statistics and Longitudinal Business Database find that it is new firms that contribute largely to job creation. Moreover, conditional on their survival, evidence suggests that young firms grow more rapidly than their older counterparts, highlighting the key role that start-ups and young firms can play. Ouimet and Zarutskie (2014) show to what extent young workers contribute to the dynamism of firms. Young employees are more likely to join young firms that subsequently grow faster and raise venture capital financing (VC). Younger workers are also disproportionately represented in some of the fast-growing sectors of the economy (e.g., high-tech) and have a comparative advantage in computer skills (Behaghel and Greenan 2010). In this context, the job-filling firm behaviour has largely been neglected in the existing literature. In a recent study, Davis et al. (2013) provide new evidence on the vacancy and hiring behaviour. By focusing on a large sample of establishments surveyed in the framework of the Job Openings and Labour Turnover Survey they document how the success rate in generating hires declines with establishment size. They also document that job-filling rates are positively related with, among other factors, the gross hire rates across industries and employer growth rates.

The role of minimum wages has also received significant attention in the literature. Research highlights the significant differences among countries in employment effects of minimum wages, which are also shaped by the structure of labour market institutions. Abowd et al. (1999) using longitudinal data sources examine the causal effect of changes in the real minimum wage on the employment status of individuals in France and the United States. Results suggest that in both countries an increase in the real minimum wage leads to a decline in the future employment probability of those individuals currently employed at the

minimum wage level. The effects for the young are even much stronger than for adults (Abowd et al., 1998). Neumark and Wascher (2004) provide a descriptive analysis and document employment effects of changes in national minimum wages for 17 advanced OECD economies over 1975-2000. They find that minimum wages are associated with employment losses among individuals in the age group 15-24. They also find significant differences in among the countries in their sample. Their analysis suggests that restrictive labour standards and higher union coverage may further amplify the effect of the minimum wage on unemployment. On the other hand, employment protection policies and active labour-market policies may counterbalance the employment effects of minimum wages. Along these lines, Gorry (2013) by constructing a search model that includes changes in unemployment status early in the life-cycle suggests that an increase in the minimum wage in the United States over 2007-2009 has led to an increase in youth unemployment by 2.8 percent (as opposed to an increase in the workforce unemployment by 0.8 percent).

Several studies have examined the effect of *product market regulation* on employment and youth unemployment rates. The underlying mechanism being that product market competition has an effect on the employment protection and consequently on unemployment. Nicoletti et al. (2001) examine the effect of anticompetitive product market regulations (e.g. establishing entry barriers in potentially competitive markets or unduly restricting market mechanisms) on non-agricultural employment rates of OECD countries: significant and positive (they find that in some countries product market regulation may explain a deviation from the average OECD employment rate equal to 3 percent). In another study, Nicoletti and Scarpetta (2005)'s estimates suggest that restrictive regulations have reduced employment rates significantly in the OECD countries where no product market reforms were implemented, and these effects appear further enhanced by the interaction of these regulations with labour market settings that provide a strong bargaining power to insiders.

Another strand of the literature has examined the effects of product market competition on training. From a theoretical perspective, product market competition can lead firms to provide either lower or greater levels of industry-specific training (e.g., Gersbach and Schmutzler 2012). Bassanini and Brunello (2011) provide evidence of the fact that the deregulation of EU industries of energy, transport and communication in the 1990s, led to an increase in the

level of training provided by firms. By matching regulation to training data extracted from various sources they estimate that a 10 percent reduction in regulation leads to an increase in firm-level training that varies between 2.8 and 5 percent. On the other hand, Picchio and van Ours (2011) employ a Dutch firm-worker database and find that a decline in labour market frictions leads to a reduction in firms' training expenditures (i.e., a decline of a standard deviation in labour market frictions would lead to a decline of 5.4 percent in firm training expenditure), whereas an increase in product market competition does not have any significant effect on the provision of firm-specific training.

1.2 Short-Run and Long-Run Consequences

The negative consequences associated with youth unemployment have been the focus of several studies. A recent estimate of the direct cost[6] of the 15-29 in NEET in 26 EU Member countries provides a figure equal to €153 billion (1.2% of GDP), with an important heterogeneity across countries. This is an increase with respect to (pre-crisis) 2008: €120 billion (1% of GDP) (Eurofound 2012). However, the actual burden of youth unemployment can largely go beyond that. These estimates do not take into account other consequences such as crime (e.g., Fougère, Kramarz, and Pouget 2009). Being disconnected from the work force also entails a significant burden and human cost which may have long-lasting consequences for an individual.

The *scarring effect* has received significant attention in the existing literature. The damaging effect of joblessness can persist. Findings in this area of the existing literature suggest an either temporary or long-run effect of unemployment on labour-market outcomes with subsequent higher unemployment, lower employment and/or earnings (e.g., Heckman and Borjas 1980, Ellwood 1982, Corcoran 1982). Mechanisms explaining this phenomenon include human capital depreciation; skills and motivation decline; employers may take unemployment spells as a signalling device. The main identification problem in

[6] The cost estimate is for the year 2011 and includes public finance savings (unemployment benefit, foregone earnings, unpaid taxes, unpaid social contributions, etc.).

these studies consists of separating the effect of unobserved heterogeneity from the causal impact of unemployment. This issue arises given workers' different probabilities of being unemployed. Some recent studies have tried to address this issue.

The negative effect of economic downturns seems to exist also for college graduates, which suggests that early labour market experience matters and is independent on whether workers are endowed with more general or specific skills. Kahn (2010) examines labour market performance of those who graduated before, during or after the recession of the early 1980s in the United States. The analysis relies on the National Longitudinal Survey of Youth whose (white, males) respondents graduated from college between 1979 and 1989. It employs two instruments: one for the national unemployment rate (i.e., year of birth) and the other for the state unemployment rate (i.e., year of birth and state of residence at age 14). Results suggest a large negative effect that persists over the time period examined (i.e., at the national level, a 1 percentage point increase in the unemployment rate measure leading to an initial wage loss of 6 to 7%). The negative effect persists after the end of the economic downturn with a negative correlation between the national unemployment rate and occupational attainment (measured by a prestige score) and a slight positive correlation between the national rate and tenure.

The effect of displacement is not only limited to labour market outcomes but also include other aspects of an individual's life. Several studies suggest a significant negative effect on physical and mental health with an increased probability of depression, and mortality. Kuhn, Lalive and Zweimuller (2009) use plant closure in the Austrian private sector as an instrument for unemployment. Their main findings suggest that lack of employment reduces mental health for men but not for women, and sickness benefit payments strongly increase due to job loss.

Life expectancy can be regarded as the outcome of a cumulative investment in human capital that takes place during the life-cycle. Sullivan and von Wachter (2009) examine the effect of job displacement on mortality for Pennsylvanian workers in the 1970s and 1980s. They find a significant effect on mortality which declines over but would still imply a loss

in life expectancy of 1.0–1.5 years for a worker displaced at age forty. Comparable results are found by Eliason and Storrie (2009) in the Swedish context in the short but not in the long-run where they find no effect on mortality.

The effect of job displacement on probability of divorce has also been found to be significant for couples in which the husband had been dismissed (in the Swedish context estimated excess risk of divorce equal to 13%) but not significant when the wife was displaced (Eliason 2011).[7]

II] The Role of the Education and Training Systems in Preventing and Combating Youth Unemployment

The following facts were established in the previous section. Youth unemployment is higher than that for the equivalent adult population (especially at times of economic downturns). Youth unemployment is negatively associated with level of education and skill proficiency *hence the supply of education – level and quality -- clearly matters*. Figure 1 (in the Appendix) presents the unemployment rates by completed level of education for individuals in the age group 25-34 in the EU21. It shows that unemployment rates decline by level of completed education. Employment rates by completed level of education, displayed in Figure 2 (in the Appendix) provide consistent figures. Similarly, on average, among the EU21, the share of NEETs (Figure 3 in the Appendix) is lower for the tertiary educated than for those with lower levels of education. In this regard, it is important to notice that the quality of the cognitive skills acquired through education appears to be an important determinant of workers' productivity. The relationship between skill proficiency and work status can be examined by relying on the most recent wave of the OECD's Programme for the International Assessment of Adult Competencies (PIAAC). Figure 4 (in the Appendix) shows that

[7] Eurofund is planning to carry out some future work "to provide a comprehensive view of the impact of long-term unemployment of young people on the individual and on society" (http://www.eurofound.europa.eu/spotlight-on/youth/youth-issues-top-priority). No study on this topic is currently available.

employment rates are on average below 60 percent at the lowest levels of proficiency in literacy skills. On the other hand, at the highest levels of skill proficiency, employment rates are on average close to 80 percent.

A significant increase in youth unemployment rates has occurred over time in virtually all Member States, especially for the less educated. Figure 1 (in the Appendix) shows that, on average, the most significant increase in unemployment post 2008 economic crisis has been experienced by those who completed less than upper secondary education. The NEET has been rising in the EU (and in most countries is related to low educational attainment and low skill proficiency). Inactivity rates are associated with significant private and social costs; the jobless are disadvantaged along multiple dimensions.

What are the potential problems? We mentioned the demand of firms. Another comes from what many politicians tend to view as an important problem, namely the restricted supply of and demand for apprentices. Unemployed youths (and NEET) are often from socio-economically disadvantaged backgrounds: low education, poor areas, minorities, immigrant origins, etc.

The focus should be on expanding access to education by fostering educational attainment and skill proficiency for all. However, this general strategy needs to be adjusted to the needs of specific groups. How should we address the problems faced by those with lower abilities or coming from less advantaged backgrounds? The focus should be on *preventing* youth unemployment in the context of a long-run strategy **as well as** *combating* youth unemployment in the context of a remedial, short-run strategy, for those already at risk. Among others, early childhood interventions can be regarded as preventive strategies, targeting those who are more likely to become drop-outs and experience youth unemployment. On the other hand, later interventions can be regarded as remedial policies, targeting adolescents and young adults who have already experienced, or are experiencing, unemployment. What appears to be important in the context of education and training is to decrease the fraction of those who drop-out from school early on. Such students leave school with very low levels of qualifications and a deficient set of skills, general as well as

practical/technical, will face the highest unemployment risk. The focus has to be on low-achievers and future low-achievers, more likely to come from disadvantaged groups. On top of providing economic independence, such targeted policies will contribute to lowering the future costs (health, in particular), these individuals will incur, with the associated effects on social programs. It will also lower those costs induced by criminal activities that such groups of young uneducated and unemployed individuals have been shown to perform.

In what follows we are going to review evidence related to the expansion of education; early childhood and other interventions as *preventive strategies*; adolescent/young adults programs as *remedial strategies,* and schemes that aim at facilitating the school-to-work transition.

2.1 The Expansion of Education for *All*

Central to most adolescent programs is the aim of providing young people with a set of skills that will prepare them to employment for all their life, and to keep in school those who would otherwise leave the education system at an early stage. Evidence from several studies suggest that high-school dropouts are more likely to experience lower wages, more unemployment spells and overall less work experience accumulated over the life-cycle (e.g., Heckman and Rubinstein 2001). Should we focus on general (higher education) or professional/occupational education? In the short-run, it seems easier to provide professional education because these children tend to develop a strong disaffection of school but, in the longer run, they will lack the appropriate general skills; recent research suggests they will face lower employment prospects than workers with general education (Hanushek et al. 2014). Hence, as discussed in the previous sub-section, giving as much general education (including non-cognitive skills) as possible and as early as possible to low-achievers before they become adolescents is crucial. Otherwise, the system is forced to catch up at a later date when this is much more costly and difficult. In what follows we are going to review a selected number of policies related to general and vocational education and training *for all.*

A] General Education

The provision of general education through the expansion of compulsory schooling has received significant attention in the existing literature. This type of strategy can be regarded as a strategy to avoid early school leavers. Most of the changes in the school-leaving-age laws of Member States started in the post-World War II period (see Murtin and Viarengo 2011 for a timeline of the policy changes and an analysis of their determinants). These contributed to the democratization of the schooling experience which was to a large extent determined by the fact that compulsory education was set free of charge. Such policies guaranteed the access to education to children from the working class and the poorest households, therefore allowing them to stay in school more years than what they would have otherwise done without such policy changes. In this context, the policy had **no impact** on children who would have otherwise stayed in school beyond the school-leaving age, but had an impact on those students at the *margin*, who would have otherwise left school earlier, had the expansion of compulsory schooling not occurred. And research has shown that such children mostly came from the lower-middle or lower economic and social backgrounds.

The standard approach in the literature has been to estimate the impact of additional schooling on educational attainment and on earnings. Most studies are country-specific and rely on the exogenous variation in years of schooling to identify the causal impact of schooling on outcomes. The causal impact is identified for those who would have otherwise left school before the expansion of compulsory schooling; that is the *local average treatment effect*. The basic model from which all the empirical analyses have been derived owes its origins to Mincer (1974). Among the existing studies that rely on the estimation of this model, starting from Angrist and Krueger's (1991) pioneering analysis, returns to schooling have been estimated for Portugal by Vieira (1999), for Italy by Flabbi (1999) and for Ireland by Callan and Harmon (1999). For the United Kingdom, Harmon and Walker (1995, 1999) have improved the quality of the estimation in their second study by controlling for the changes in schooling participation and returns independent of the increase in the level of minimum compulsory schooling of 1947 and 1973. Later, Oosterbeek and Webbink (2007) have used the same technique to estimate the returns to

schooling for the Netherlands, Grenet (2013) for France, Pischke and von Watcher (2008) for Germany as well as Meghir and Palme (2005) for Sweden. Finally, Oreopoulos (2007) has estimated separately the earnings from schooling for Canada, the United Kingdom and the United States. Estimates of the returns to an additional year of schooling for these country-specific studies are in the range of 6 to 15 percent. An exception to these findings is Pischke and von Watcher (2008) who find no returns in terms of higher wages and a positive effect on the probability of employment only when state-specific trends are not included in the model specification. The possible explanation they put forward relies on the fact that in Germany skills relevant to the labour market are acquired at an earlier stage. The heterogeneity across countries can be explained by several factors. For example, this may be related to the fact that the expansion of compulsory schooling occurs at different stages of the schooling cycle which coincide with different qualifications.

Brunello et al. (2009) use the waves 1993 to 2002 of the International Social Survey Program among other data to provide consistent evidence for twelve European countries. Their findings confirm that the extension of school-leaving age increased the educational attainment of the cohorts affected by the reform. The impact is greater for those at the low end of the educational attainment: 0.30 to 0.40 years of additional education or higher as opposed to 0.10 for the others. There is also evidence of a reduction in conditional wage dispersion. To understand the effect of such reforms as well as why they matter to better educate the potentially "low-achievers", it is essential to see that those affected are not children of middle-class or wealthy families since they virtually all continued their education into the tertiary, even before the reforms, but children of blue-collar or clerical workers, coming from less well-off backgrounds.

Maurin and McNally (2008) rely on another 'natural experiment' to examine the impact of widening access to higher education. They look at the consequences of the May 1968 riots in France which led to a lowering of the threshold of the qualifying examinations to get access to higher education. As a result of this, a greater share of individuals, who were exposed to these changes in the *baccalauréat* examination, completed more years of higher education than would have otherwise been possible. The authors find that this had a

significant impact on labour market outcomes (in terms of wages) and occupational prospects (as measured by the probability of holding an upper-white-collar occupation) for those individuals, who were largely from a middle-class background. Interestingly, they also find that this widening of higher education had a further positive effect by reducing their children's grade repetition. These findings suggest that a very likely explanation of what happened may be related to the fact that standards were too high. That is, standards may have not been adjusted to the changing composition of the student body. This suggests that strategies and standards need to take into account changes in enrolment patterns and student composition.

B] Vocational Education, Apprenticeship and Training

Much attention has been devoted to the topic of apprenticeship. The content and length of the programs, the provision of more applied skills and some evidence on the pathways to stable employment are among the reasons that make vocational education, apprenticeship and training to be regarded in many countries as an option for low-performing children at risk of dropping out, or for young adults who have dropped out of the education system. A summary of the existing research is presented in Wolters and Ryan (2011). They review the theoretical framework that helps understand differences among training systems, incentives for firms, and outcomes for apprentices. In another piece, Ryan (2001) describes the interaction between the institutions that shape youth education, training, and employment in five Member States (France, Germany, the Netherlands, Sweden, UK), Japan and the US, whereas Ferracci (2013) provides a comprehensive summary of studies in European countries. Existing research on the vocational education and training systems shows the heterogeneity across countries and the complexity within countries, with different degrees of collaboration between the labour-market institutions – including unions and firms - and education system to guarantee their effectiveness.

A discussion on the empirical evidence related to the transition from school to work under different education and training regimes is presented later in this chapter. In what follows we

discuss findings from recent research that provides evidence on the role of training on the employment life-cycle.

Hanushek et al. (2014) use the International Adult Literacy Survey to document higher employment rates at the start of the employment life-cycle for workers with vocational education. This positive effect declines later, towards the middle of the employment life cycle, to induce lower employment rates than for general education workers. Adda et al. (2013) follow German workers from their early career on to understand the effect of the recent economic downturn on their labour-market outcomes. Workers who completed a three-year apprenticeship program are shown to be more likely to experience low job mobility and to stay with the same employer.

Moreover, there seems to be mixed evidence on early tracking, commonly defined as the streaming of students into different types of schools according to their academic performance. According to the standard approach, countries where the first age at which sorting takes place is below 16 are regarded as having tracking systems, whereas those where sorting takes place above age 16 are regarded as not having one (Freeman and Viarengo 2014). The impact of tracking has been a highly debated topic in many countries with relatively scarce evidence available (see Woessmann (2009) for a review; and Hanushek and Woessmann (2011, section 4.4.4) for an overview of the evidence related to the international studies). Hanushek and Woessmann (2006) document an increase in inequality of academic performance between the end of primary and the end of secondary school as a result of early tracking. Freeman and Viarengo (2014) document a greater variance in test scores among schools and lower dispersion in test scores within schools in countries with early tracking. To extend existing research, Dustmann et al. (2014) examine the long-run effects of early tracking in Germany by looking at the effectiveness of built-in flexibilities that allow for the correction of initial choices at a later point. They focus on those students who, after the early streaming (at age 10), perform close to the threshold between two different tracks in middle school. The middle school track assignment does not appear to have any impact on registered unemployment (and employment rates) in the long-run (i.e., when students are 30 year-old and older), a result due

- according to the authors - to the fact that students can change track after the initial allocation is made.

2.2 Interventions targeting the more Disadvantaged Children as *Prevention Strategies*

Even when the aim of the policy is to target everyone as in the case of compulsory schooling, children from a disadvantaged background are more likely to benefit less from such policies in absolute terms. Children from a more affluent socio-economic status may stay in education longer and get access to additional educational resources no matter what the policy context is. The design of an effective strategy should therefore take into account those who could/will be excluded from the benefits of such general (intended for all) policies.

Early childhood interventions have received significant attention in the recent literature and are regarded by many as key *preventive* strategies. Research findings show the role that *cognitive* and *non-cognitive* skills play in shaping most future labour market outcomes, in particular employment (Heckman et al. 2006), and the importance of a very early acquisition of some of these skills. This area of research suggests that potentially future employment trajectories are already in significant part determined *before* children start attending school.

Cunha et al. (2006) provide the theoretical framework that helps explaining a substantial body of empirical findings on the dynamics of early child development. They look at skill formation as a multistage process that shapes childhood. Central are the ideas of *self-productivity* (i.e., acquired skills persist) and *complementarity* (i.e., acquired skills facilitate subsequent skill acquisition), which makes "skill begets skill through a multiplier process" (p. 698). The other key pillar of this body of research derives from the evidence that a lack of early child investment requires a more costly later investment in education and training (e.g., Cunha et al. 2006; Cunha and Heckman 2007). Because of their "early nature", families play a key role in the provision of these skills, and policies to help the disadvantaged have to target young children.

An early investment in children education may lead to societal gains in terms of reduced social welfare costs, lower crime rates as well as higher workers' productivity. The impact is substantial. According to James Heckman's estimates, the returns to society of such investments are large. An early investment in children through education and development resources, from birth to age 5, leads to a return on investment through increased educational achievement, better labour market outcomes and reduced social costs (i.e., remedial education, health and criminal justice expenditures) that varies between 7 and 10 percent per child per year (Heckman 2008, *the Heckman equation*[8]).

Some early childhood programs have been extensively studied and have provided the foundations for policy initiatives. A review of the early childhood U.S. programs with randomized design is provided by Currie and Blau (2006, Table 16) whereas Lynn et al. (2005) also provide a summary of the various costs-benefits analyses, and Kautz et al. (2014) discuss various aspects related to the measurement of the cognitive and non-cognitive skills during the life-cycle. Most of the existing programs are targeted towards disadvantaged populations, and aim at enhancing child development. They are designed to provide a combination of home visiting (or parent education) with early childhood education. Some of the programs that have received greater attention are quite old by now (e.g., the *Jamaican Study* focuses on individuals born in 1984-87, the *Chicago Child-Parent Program* focuses on individuals born in 1980, the *Abecedarian Project* on those born in 1972-77, and the *Perry Pre-School Program* in 1962-67). However, some of the more recent ones do not have sufficient time-depth to provide a long-term view (Heckman 2014[9]) and it is therefore not possible to look at their impact on employment and other outcomes.

Among those programs that provide some evidence on employment outcomes, prominent is the *Perry Pre-School Program.* The target population was low-income, low-IQ, 3-4 year-olds children in Ypsilanti, Michigan. The program consisted of focusing on children's cognitive and social development through one- or two-year part-day school-year, which also included periodic home visits, and lasted one year. The focus of the curriculum was on fostering active

[8] http://heckmanequation.org/heckman-equation

[9] http://www.businessweek.com/articles/2014-01-16/the-heckman-equation-early-childhood-education-benefits-all

learning through problem solving and a plan-do-review process (Heckman et al. 2010b). Impact evaluations of the program (Heckman et al. 2010a, 2010b) have found among the positive outcomes (e.g., increase in educational attainment, crime reduction) that it increased employment by age 19, earnings and income. According to a recent study by Heckman et al. (2013) the program operated through changes in personality skills, with a reduction in externalizing behaviour as a result of a greater focus on planning and organization.

On the other hand, the *Abecedarian Project* provided early education services as well as parental support to disadvantaged families aimed at increasing maternal education and employment. The program consisted of educational activities provided to children in a childcare setting from infancy to age five. The curriculum focused on cognitive and language development. Evaluations of the program suggest no significant effect on employment rates but one on the likelihood of having a skilled job[10] at age 21, as well as a positive effect on some educational outcomes (Campbell et al. 2002, Barnett et al. 2007).

A recent impact evaluation of the *Jamaican Study* is provided by Gertler et al. (2013). The program consisted of randomly assigning 129 stunted children to three programs: psychosocial stimulation, nutritional supplementation, both, and to a control group. The psychosocial stimulation focused on both cognitive and language development. Children were aged between 0 and 2 at the start of the program (1986-87) and the treatment lasted two years. Findings suggest that, for those participants who were interviewed twenty years later, the treatment had no impact on employment or labour-force participation. The attrition rate was 17 percent, a group comprising those individuals who benefited from the early childhood intervention but, for various reasons, could not be interviewed when young adults. However, conditional on being employed, the early childhood program increased participants' earnings by 42 percent.

Another recent study by Black et al. (2014) examines the impact of subsidies for childcare on parents and children's outcomes in Norway. Families with children who received an offer

[10] Treatment and control groups differed with respect to the level of skills employed in each occupation according to the Hollingshead scale (Campbell et al. 2002, p.51).

from a formal childcare and whose income was below a certain threshold (which varied by year and municipality) were eligible to apply for the subsidy in the 1990s. They find that the increased disposable income had a positive impact on children's exam grades at age 5, but no effect on parents' labour supply and income.

Some interventions have also been directly targeted at disadvantaged students in order to increase their educational attainment at a later stage. In this context, the *Excellence in Cities* program was introduced in England in 1999 to address cognitive and behavioural problems of children in secondary schools in inner city areas. It was gradually extended to include one third of all the secondary schools. Machin et al. (2004) find a small impact on educational attainment in mathematics, none in English, and a significant reduction in absenteeism. We also acknowledge other programs such as the *Success for All*[11] which has targeted disadvantaged elementary schools in the U.S. to improve children's reading and learning outcomes.

Another intervention is related to the introduction of academies in England. There is heterogeneity among these schools but in several cases, starting from 2002 low-performing state-funded and non-selective secondary schools were converted into academies and were granted greater autonomy with respect to the management and in some cases to the curriculum (Machin and Silva 2013). Machin and Vernoit (2011) examine the impact of the academy conversion and find that in some settings by 2009 it had led to an improvement in the educational attainment of the student-intake (as measured by test scores at age 7) and to an improvement in students' educational achievement in the academies.

There are other examples of interventions that target those from a less advantaged background. In this context, Fack and Grenet (2014) examine the impact of the largest French financial aid program, the *Bourses sur Critères Sociaux*. They find a positive effect on enrollments for both undergraduate and graduate students, and also a significant effect on degree completion for those college and master students who are in the final year of their

[11] http://www.successforall.org/

program. They do not find any impact on the probability of degree completion for college entrants.

2.3 Interventions targeting Adolescent and Young Adults who are (or are more likely to become) Unemployed as *Remedial Strategies*

Evidence on the effectiveness of *training programs* is more limited. It partly reflects the heterogeneity of the existing programs (e.g. length, design, and provider), a lack of data availability and the difficulty of addressing the issue of self-selection in the context of the evaluation (Wolters and Ryan 2011). Depending on the context, *training programs* often do not only aim at providing occupation-specific skills but also giving professional retraining and at smoothing transitions, from school to work as well as, from unemployment to re-employment.

An accurate evaluation is available for the *Job Corps* program, the largest training program for disadvantaged youth in the United States. It was introduced in 1964 in the framework of President Johnson's *War on Poverty*. It aims at providing low-income and low-educated youth (i.e., those who have not completed secondary education) with residential vocational training to help them work in a specific trade, and, therefore, provide remedial education and career support.[12] Schochet et al. (2008) provide an evaluation of the National Job Corps Study, the first nationally representative randomized experiment of the program. It consisted of randomly allocating the 81,000 applicants to a treatment and control groups over the period 1994-6. After a baseline survey, three follow-up surveys were used to collect information on youth education, employment, earnings, and crime. The average length of the participants' residential stay was eight months. Findings suggest that participants experienced a significant increase in educational attainment and reduction in arrest charges for all crimes. The estimated impact on employment rates was positive and significant from year three on, when participants had completed their residential training. Blanco et al. (2013) further examine the impact of the training program by drawing a distinction between adolescents (aged 16-19) and

[12] More information on the program is available at: http://www.jobcorps.gov/centers.aspx.

young adults (20-24). To address possible selection bias into employment they rely on nonparametric methodologies using bounds to estimate average and quantile treatment effects and find that the older group displays higher earnings than the younger group four years after randomization, which suggests that the different effect of the program on the labour supply of the two groups may be important.

More limited empirical research is available for Member States, and existing results provide mixed evidence on the impact of training.

Fersterer et al. (2008) examine the apprenticeship training for all private sector workers in Austrian firms over the period 1972-98. Their identification strategy is based on comparing the effect of length of training on labour market outcomes by relying on exogenous changes in the duration of training induced by firms that close down their operations during the time period considered. They provide results for firms with less than ten employees, those that provide most of the apprenticeship positions in a variety of sectors of the economy. They estimate labour-market returns to apprenticeship to be similar to other forms of school-based education, with an additional year of apprenticeship equal to an increase in wages of five percent. This analysis does not provide estimates for larger firms, as well as for future employment probabilities.

More recently, Blasco et al. (2012) adopt a more integrated approach to evaluate the French training system. They focus on both the *on-the job* and *out-of-job training programs* and how they have an impact on the distribution of the employment duration. They use the nationally representative French survey *Formation et Qualification Professionnelle*s which gives workers' labour-market experience over the years 1998 to 2003. Younger workers, and more educated individuals, are more likely to participate in a training program and workers younger than 26 are more likely to be enrolled in a longer training program. The estimation of a multi-spell multi-state transitions model with unobserved heterogeneity shows that training increases the likelihood of reemployment for unemployed individuals, and that training of out-of-employment individuals leads to an increase in reemployment stability.

Another program that targets those who left the educational system without any formal qualifications are the *Ecoles de la Deuxième Chance* which were adopted along the lines proposed by the European Commission in 1995 and introduced in France under the support of the Fondation de France.[13] It provides young adults between 9 and 12 months of tailored training which at the end of the program gives them a certificate which testifies the skills acquired. Unfortunately, no rigorous evaluation of their effectiveness is at this stage available.

2.4 Finding a Job: Are the Young Different?

A natural question to ask is whether the young behave differently when looking for their first post-graduation job. A recently growing area of research highlights a significant lack of career support and the importance of social ties which is greater for children with lower schooling achievement or from more disadvantaged backgrounds.

Kramarz and Skans (2014) rely on a large Swedish employer-employee dataset of graduates from all levels of schooling (i.e., compulsory school, high school, or universities/colleges) graduating over the years 1988 to 1995 and follow each cohort for seven years. The dataset includes detailed information on family background, social ties, as well as parents' and children' employers, over a period covering years with both high and low unemployment, as well as measures of firm performance. The innovation of their empirical strategy consists of looking at the three sides of the potential match: the worker looking for the first job, the employed worker and the firm. Their findings suggest that strong social ties (parents) affect the transition from school to work. Having a parent within the plant increases the probability of being hired, especially for the low educated graduates with low grades. Moreover, strong ties reduce the length of the school-to-work transition and are associated with better labour-market outcomes (employment and wages) a few years after graduation, and the greater their role the less specific (i.e. targeted to a specific type of occupation or firm) the training is.

[13] More information is available at: http://www.fondatione2c.org/srt/e2c/home.

Pellizzari (2010) by using as an exogenous change the 1998 Italian liberalization of the employment services also finds a wage effect for jobs obtained through personal contacts, suggesting that family ties are particularly important for the less educated, especially where there are more professional recruiters.

Further evidence is provided by Corak and Piraino (2011) for Canada and by Stinson and Wingnall (2014) for the United States. The latter find that the probability for father and son to share the same employer increases with the father's earnings. In the section that follows we discuss the evidence over the effectiveness of different school-to-work transition strategies across Member States.

2.5 School-to-Work Transition Programs

There are important differences that shape the school-to-work transition of youth in Member States. Significant differences appear to be associated with the design and the organization of the vocational education and training systems. A commonly used classification (e.g., Echhorst et al. 2013, Ryan 2001) makes a distinction between countries that rely on a dual apprenticeship system (e.g., Austria, Denmark, Germany and Switzerland) characterized by a significant workplace training, and others that rely on a school-based vocational education system (e.g., Finland, Sweden). However, within these broad categories there are significant differences among countries that belong to the same group (Eichhorst et al. 2013) and which are closely related to the institutional design and structure of industrial relations of each country. Quintini and Manfredi (2009) illustrate the school-to-work transition pathways for several European countries over the 1990s and 2000s. They document a greater success in terms of transitions to stable employment and a smoother path from school to work for those countries with a well-established apprenticeship system. On the other hand, some Southern and continental European countries are characterized by a higher incidence of temporary work

as first employment that leads to more unstable career paths, and frequent unemployment spells.

However, there is mixed evidence on whether vocational education and training improve youth prospects from graduation to their first employment. Cross-country comparisons suggest a positive association between apprenticeship/training and probability of employment after graduation (e.g., Van der Velden and Wolbers 2001; Gangl 2003). In spite of this, existing comparative studies are mainly descriptive and do not make it possible to draw any causal implication. From an education and training perspective, it is clear that improving the learning outcomes and skill proficiency of the youth at risk could improve their labour-market prospects. This could be through general education or through shorter vocational education and training courses for those who would otherwise drop out from the schooling system. The possible mechanisms are related to the experience in the workplace and the prior acquisition of skills specific to the job (Acemoglu and Pischke 1998), as well as the signalling of ability/experience to the employer. However, issues of self-selection and lack of a counter-factual (Ryan 2011) may plague identification of the real effects of such programs. Studies that address the issue of causality are limited. Recent analyses with reliable identification strategies are country-specific and are only a few. For example, Malamud and Pop-Eleches (2010) exploit an exogenous change driven by the introduction of an education reform in Romania in 1973 which led to the expansion of general education and a reduction of the vocational training courses offered. Their findings suggest no significant difference in labour-market outcomes between the cohorts who experienced the policy change and those who did not. These results suggest that the observed raw difference was mainly driven by selection, and by the sorting of students into different academic streams according to their ability, prior educational performance and other unobservable characteristics.

Another recent study reaches a different conclusion. Parey (2012) relies on a large panel database of all German employees paying social security contributions over the period 1975-2001, the so-called IAB database. The empirical strategy relies on the fact that the availability of apprenticeship slots affects young people's educational choice to exploit a multinomial choice setting where individuals can make their education decision by relying on three options

(i.e., vocational school, training, remain unskilled). The estimation of the empirical model which includes a set of controls, district, and region fixed effects as well as region-specific trends shows lower unemployment probabilities among those who complete an apprenticeship.

However, in spite of some positive results there is no conclusive evidence as to whether, in the long-run, apprenticeship and training are associated with better labour-market outcomes (Ryan 2001; Wolters and Ryan 2011; Hanushek et al. 2014).[14]

III] Case Studies of Effective Interventions

In the previous section, different tools to combat and prevent youth unemployment have been discussed. These include the *expansion of compulsory schooling* to prevent children from leaving school without having acquired some basic skills, and the provision of job specific skills through *vocational education and training.* Other interventions are under the form of *prevention strategies* aiming at redressing inequality and disadvantage at an early stage through preschool programs. Such strategies should allow children to acquire those cognitive and non-cognitive skills regarded as predictors of future labour market success (*early childhood interventions*). Complementary, and necessary in the short-run at a minimum, are schemes that are intended to *remedy* ills of the existing systems. Other schemes are more closely tailored to facilitate the transition from school to first employment or from unemployment to re-employment (*job training programs*). There is great heterogeneity among existing policies and programs across countries as well as in the way they can be implemented in countries with different education systems and labour-market, political, legal, etc. institutions.

[14] The GHK-European Commission (2014) study is discussed in the appendix, section A2.4. It provides a description of some youth work programs and practices employed by Member States and at the EU level.

Other features that often make it difficult to identify the causal impact of a specific policy or intervention include lack of data, the fact that participants are not randomly assigned to the program (*selection bias*) or the fact that policies have been recently introduced. These among others have been acknowledged in the existing literature (e.g., Wolters and Ryan 2011).

In what follows we are going to focus on a selected number of country examples that illustrate the analysis of the previous section. They are related to either existing programs or recently introduced reforms that offer important lessons for Member States. An evaluation study of each such program or scheme is going to be summarized and discussed.

We also acknowledge the possible role played by programs at the EU level such as the Youth Guarantee adopted by the EU's Council of Ministers in April 2013 which provides guidelines and funding for Member States to "ensure that, within four months of leaving school or losing a job, young people under 25 can either find a good-quality job suited to their education, skills and experience or acquire the education, skills and experience required to find a job in the future through an apprenticeship, a traineeship or continued education"[15]. In this regard, the Youth Employment Initiative was introduced earlier in 2014 within the framework of the European Social Fund to tackle youth unemployment. This program is designed to provide financial and technical support to Member States to favour labour market integration of youth, and in particular of those disengaged from both education and labour market participation.[16] It is open to all EU regions that experience levels of youth unemployment greater than 25 percent. However, given that these programs have been recently introduced, an evaluation of their impact is currently not available. However, we will discuss in our Conclusion the lessons we draw from the research reviewed here on the structure and focus of this Youth Guarantee.

[15] http://europa.eu/rapid/press-release_MEMO-14-571_en.htm
[16] More information is available at http://ec.europa.eu/social/main.jsp?catId=1036

3.1 Expansion of General Education - *Poland: The 1999 Education Reform*

The 1999 Polish Education Reform was part of a redesign of the structure of the education system which, among other changes, expanded general education and delayed tracking into vocational education. Poland is now regarded by many as "the biggest education success story" among Eastern European countries former allies of the Soviet Union and as "one of the rising stars in education"[17] thanks to its performance at the most recent PISA international study. Central to the reform was the redesign of the stages of education. A three-year gymnasium was introduced between the end of primary education –which was shortened by one year - and the start of secondary education (Jakubovsky et al. 2011). This intervention postponed the sorting of students into streams of different ability. Notice, importantly, that this redesign goes against some of the "celebrated" features of the vocational education and training programs in which tracking takes place at a relatively early stage in the curriculum. Other aspects of the reform included a change in the curriculum (i.e., the "elimination of indoctrination", "introduction of foreign languages", "elimination of Russian as a compulsory language"[18]), as well as a change in the management and accountability of the education system (UNESCO 2012). At the core of this change was the introduction of examination boards to develop standards and organize the external assessment at the different stages of compulsory schooling.[19] However, some of these changes were not fully implemented (Dabrowski and Wisniewski 2011).

Jakubovsky et al. (2011) provide an evaluation of this reform. They test whether the 1999 reform had an impact in improving test scores in PISA from 2000 to 2003, and from 2003 to 2006. The empirical strategy relies on a difference-in-difference method after matching treatment (*vocational-track students*) and control (*general-track students*) groups by background characteristics. It consists of comparing the performance of general-track to vocational-track students and examining how the difference changes over time. Results show

[17] http://www.bbc.com/news/business-18151512
[18] Dabrowski and Wisniewski (2011, pp. 323-24).
[19] UNESCO (2012, p. 4).

that delaying the start of vocational education had an overall improvement in test scores for those students who were affected by the reform and were exposed to more general education.

As the authors highlight the expansion of general education was only an aspect of the reform as also the curriculum was modified to eliminate its Soviet influence. Therefore general education may be regarded as one of the policy changes that contributed to the improvement in students' learning outcomes.

3.2 Expansion of Vocational Education - *The Netherlands: The Basic Vocational Education Reform*

A limited number of studies provide a rigorous evaluation of the effectiveness of vocational education and training systems (e.g., Elkstrom (2002) for Sweden). It is important to acknowledge that the vocational and education training systems vary along several dimensions. Among other aspects, they differ with respect to the provision of school-based education, firm-based training and informal training (Eichhorst et al. 2012). Oosterbeek and Webbink (2007) evaluate the impact of a Dutch educational reform that in 1975 extended the length of the basic vocational education program from three to four years. The policy change consisted of providing students with general skills during the additional year of education. This intervention did not have any effect on those students who were already involved in a 4-year vocational education program. At the same time when the reform was implemented, the school-leaving age was increased by one year. The authors rely on a difference-in-difference approach to identify the causal effect of this policy change on labour market outcomes. They compare wages of those exposed to the additional year of education before and after the reform to wages of those in the 4-year vocational education track who were not affected by the reform. Their findings show no significant effect on wages of graduates.

3.3 Early Childhood Prevention - *Chicago, IL: The Chicago Child-Parent Center Program*

Early childhood initiatives and the rationale underlying them have been discussed in an earlier section of this report. The *Chicago Child-Parent Center Program* was introduced in Chicago in 1967 to provide support to low-income families in disadvantaged neighbourhoods. It is the oldest preschool program in the United States funded by the federal government.[20] This is a large-scale program currently implemented.[21] The aim of this preschool program is to provide support to disadvantaged families by focusing on fostering children's cognitive development and parental involvement. The support services are provided to children from age 3 to 9.

Reynolds et al. (2004) examine the long-term effect of this program by focusing on a cohort of children born in 1980. These 1,539 children (treatment group=989; control group=550) were followed until age 21 in the framework of the Chicago Longitudinal Study. Treatment and control groups were matched by eligibility criteria and family background characteristics. Results show an effect on educational attainment with higher rates of high school completion, and higher college attendance. Also, other additional positive outcomes include higher projected earnings and lower juvenile arrest rates.

Temple and Reynolds (2007) compare the effectiveness of this policy to others school-based (class size reduction, grade retention), or that facilitate the school-to-work transition (youth job training). They find that this preschool program has higher returns than other interventions implemented when children are already in school.

[20] http://blogs.tc.columbia.edu/transitions/files/2010/09/15.Illinois_Chicago-Child-Parent-Center_profile_.pdf
[21] Temple and Reynolds (2007, p.127).

3.4 Youth Training Programs - *Sweden: The Youth Practice and Labour Market Training Programs*

As previously highlighted, youth training programs vary greatly across countries along several dimensions. A review of the active labour market policies is provided by Card et al. (2010), and a summary of the school to work transition programs by Ryan and Piopiunik (2012). On the other hand, Friedlander et al. (1997) summarize earlier training programs for the economically disadvantaged.

Larsson (2003) provides an evaluation of two largest Swedish youth programs of the 1990s: the *Youth Practice* and the *Labour Market Training*. The first targeted young unemployed aged 18-24. They were allocated to both the private and public sector and were also granted an allowance. On the other hand, under the *Labour Market Training* participants received a similar subsidy and were supposed to continue their job search.

The empirical strategy consists of employing a non-parametric matching approach by constructing a sample of 20-24 individuals registered with the Employment Service over 1992-3 and compare those who were granted with one of the training programs to those who did not. Empirical results show that overall *Youth Practice* was more effective than the *Labour Market Training.* The effect on earnings, re-employment probability was slightly negative (or not-significant) within 12 months after the start of the program and slightly positive (or not-significant) after 24 months.

3.5 Fostering *Entrepreneurship* through Education and Training

We also acknowledge the importance of fostering the 'right environment' for entrepreneurs. That is, an institutional setting that encourages innovation and the creation of employment. Specifically, Cabannes and Fougère (2014) discuss the existing evidence on the role played by the young enterprises that innovate. The entry of these enterprises also has an impact on

the pace of technological innovation of the existing firms, and on the overall dynamism of the labour market. In addition to this, evidence suggests that the availability of capital that targets young and new firms is also key in fostering their performance (Haltiwanger 2011). On the other hand, there is no conclusive evidence with regard to the role that entrepreneurship and transversal skills could play. An ongoing experiment by Algan et al., '*Groupements de Createurs*: Encouraging Youth Entrepreneurship in France',[22] consists of randomly selecting a group of young unemployed and allowing them to participate to the different stages of a program that aim at providing them with social and decision-making skills to enable them to start their own business. Results are not available yet. Another experiment by Crepon et al.[23] aims at providing youth from disadvantaged background living in "sensitive urban zones" (selected on the basis of their high unemployment rate) in France with coaching, an immersion experience in a firm and job training to enable them to become self-employed entrepreneurs. Results are again not available at this date. An experimental study by van den Berg et al.,[24] in collaboration with the French Public Employment Services, consists of providing eligible youth under 30 living in poor urban areas with access to an intensive counselling program for job-seekers. Selected participants joined a three-months counselling training program that help them acquiring skills for job applications and interviews. The project was carried out over 2013-2014, and results are once more not available yet. From the existing studies, no evidence on the role of ICT skills is currently available. Similarly, based on the existing evidence, there is mixed evidence on the relationship between different sets of skills (general vs. specific) and the performance of new companies (Cabannes and Fougère 2014, pp.18-19).

[22] More information on the ongoing experiment is available at: http://www.povertyactionlab.org/evaluation/groupements-de-cr%C3%A9ateurs-encouraging-youth-entrepreneurship-france

[23] More information about the experiment is available at: http://www.povertyactionlab.org/evaluation/small-business-training-and-loans-aspiring-entrepreneurs-disadvantaged-neighborhoods-fran

[24] More information is available at: http://www.povertyactionlab.org/evaluation/collective-counseling-disadvantaged-job-seekers-france

Concluding Remarks

Member States experience heterogeneous rates and types of youth unemployment. Youth unemployment appears to be predominantly a low-education, low-skill proficiency phenomenon. Employment rates are lower and show greater differences across countries for young adults with less than upper secondary education than for those with higher levels of completed education. On average, employment rates are higher and unemployment rates are lower for those at the high-end of the skill proficiency distribution as suggested by the recent PIAAC survey. Moreover, the current patterns of unemployment suggest that the youth has been disproportionately affected by the recent economic downturn. Evidence show that being out of work may have long-lasting repercussion on an individual's employment life-cycle, and a high societal cost for years to come. The ways countries tackle youth unemployment reflect the complexity of their labour markets, education, and training institutions as well as characteristics of their welfare state systems. This report has focused on the education and training side. Policy responses vary and their rigorous evaluations are not as frequent as analysts would like.

Based on cutting-edge empirical research of successful (and sometimes unsuccessful) reforms, three sets of supply-side policies have been examined. First, those policies that widen access to education through different mechanisms (e.g., increase in school-leaving age, changes in qualifying assessment, lower cost of enrolment) at different stages of the education life-cycle and are designed to affect *all social backgrounds*. Overall, empirical evidence suggests a positive impact on educational attainment and labour market outcomes for those at the margin, who would have otherwise left school earlier, hence coming from low and low middle social backgrounds.

Second, existing empirical research shows the importance of *prevention* for children from a disadvantaged background. In this regard, the dynamics of skill formation during the life-cycle highlights the critical importance of the early childhood learning experience. Studies suggest the effectiveness of preschool programs for the more disadvantaged, and how these programs may lead to higher returns than programs implemented at a later stage. Moreover, research findings highlight the significant labour-market returns in the long-run of expanding educational attainment and fostering learning outcomes.

Third, research has shown the *remedial* role that interventions implemented at a later stage in the educational life-cycle can play in combating youth unemployment, for those who are already in an educational/occupational trajectory likely to predict future unemployment. The heterogeneity of training programs that target the unemployed youth, and the fact that their effectiveness also depends on other characteristics of the labour market, does not allow drawing conclusions on those factors that lead to successful labour-market outcomes. Improving educational attainment, the quality of education, and learning outcomes and facilitating the transition from school to work also appear to be key factors.

In this context, the Youth Guarantee could potentially provide a valuable form of remedial support. However, it seems that targeting those who either left formal education or became unemployed to enable them to get a 'good-quality offer within four months' does not really address the core of the problem which either requires intervening at a much earlier stage or spend much more time to provide the basic social skills needed to enter the labour market (as in the Job Corps program).

It is also important to notice that supply-side interventions to combat youth unemployment take time to work (e.g. from preschool to adulthood). Moreover, as previously acknowledged, it should be reminded that no supply-side program could succeed if the macro and institutional context is not right. Successful education and training programs for children, adolescents and young adults vary greatly across countries and the design of any intervention should take into account the extent to which they are deeply rooted in each national system and policy environment.

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Appendix

A1.1 Indicators of Youth Unemployment

One of the most commonly used indicators is the "youth unemployment rate".[25] It is defined as the share of youth (15-24) unemployed among the labour-force (which includes both employed and unemployed).[26] Another indicator, the "youth unemployment ratio", measures the share of youth unemployed among the population of the same age group (ILO 2014a, ILO 2014b). Both indicators are useful for international comparisons and to establish trends over time. However, these indicators which mainly focus on 'unemployment' suffer from significant limitations as they do not include those who become economically inactive (i.e., go back to education or become discouraged and no longer look for a job, dropping out of the labour force).

In order to provide a comprehensive measurement of labour-market performance it is therefore necessary to also capture those who are disengaged from both work and education. Low participation rates imply to focus on employment rates. The standard indicator in this context is the "not in employment, education or training" (NEET) which is defined as the share of 15-29 neither in employment, nor in education or training (ILO 2014a, ILO 2014b). Within this category the younger age group (15-19) is more likely not to hold a formal qualification of secondary education. Other indicators provide additional information on the nature of youth unemployment and make it possible to define more detailed categories on the relationship between education, employment and unemployment (e.g., "youth in education but not in employment", "youth in education and in employment", "employed youth", and "unemployed youth").

Other indicators complement the information along other dimensions of youth unemployment: the specificity of the youth problem (e.g., relative unemployment rate youth/adult (15-24)/(25-54)); the temporal dimension (e.g., related to the time to find a job,

[25] A summary of the main indicators is provided in chapter 10 of the ILO (2014a)'s "Key Labour Market Indicators".
[26] http://www.ilo.org/public/english/employment/yen/whatwedo/projects/indicators/2.htm

incidence of long-term unemployment (% of unemployment)); incidence of temporary work (% of employment); the incidence of part-time work (% of employment)); the educational/skills dimension (e.g., skill levels relative unemployment rate low skills/high skills (ISCED<3/ISCED>3)).[27]

A1.2 Stylized Facts

We are going to present some descriptive statistics to document the relationship between unemployment and the completed level of education as well as the association between work status and skill proficiency. In what follows we show changes in the unemployment rate and ratio, some trends in unemployment, and employment rates by level of education. We then look at the share of NEET by level of education and the share of unemployed and employed at different levels of skill proficiency.

Table 1 presents the youth unemployment rate and ratio. The former measures the number of unemployed people over the number of people in the labour force. The latter the number of unemployed people over the number of people in the same age group (including the inactive). Consequently, the youth unemployment ratio is usually lower than the youth unemployment rate. Both youth unemployment rate and ratio have increased in the European Union between 2005 and 2013. There are differences across countries with respect to these youth unemployment indicators before and after the economic crisis.

[27] A detailed description of these indicators and some of their limitations are discussed in Scarpetta et al. (2010) and ILO (2014a)

Table 1: Changes in Youth Unemployment Rate and Ratio, 2005-2013*

	youth unemployment rate		youth unemployment ratio	
Country	2005	2013	2005	2013
European Union (28 countries)	14.8	18.7	8.5	10.6
Belgium	15.2	16.5	8.1	8.2
Bulgaria	16.0	21.8	6.8	10.2
Czech Republic	12.8	12.3	6.6	6.2
Denmark	7.4	11.9	5.4	8.1
Germany	14.2	7.3	8.5	4.6
Estonia	11.4	13.8	5.8	7.8
Ireland	6.7	20.5	4.3	11.3
Greece	19.2	48.7	10.3	24.2
Spain	14.8	42.4	9.4	24.0
France	15.5	18.4	8.4	10.0
Croatia	24.2	34.1	12.6	16.3
Italy	17.6	29.6	8.7	12.4
Cyprus	10.0	27.5	6.0	16.4
Latvia	11.7	16.4	6.0	9.4
Lithuania	10.1	17.1	4.4	8.5
Luxembourg	8.1	11.0	4.0	5.2
Hungary	12.1	18.0	5.6	8.3
Malta	11.3	9.5	7.1	6.2
Netherlands	6.7	9.5	5.2	7.3
Austria	8.4	8.0	5.7	5.6
Poland	27.8	18.9	14.5	10.0
Portugal	13.2	28.9	7.9	15.3
Romania	13.7	15.9	6.4	7.7
Slovenia	12.3	19.0	7.1	10.2
Slovakia	22.6	24.3	11.8	12.2
Finland	14.8	15.1	9.2	9.4
Sweden	17.3	17.2	10.7	11.2
United Kingdom	9.7	14.8	6.7	10.1
Iceland	5.4	9.4	4.3	7.6
Norway	8.9	7.5	6.1	4.9
Switzerland	7.3	7.5	5.4	5.7
Former Yugoslav Republic of Macedonia, the	:	45.5	:	22.4
Turkey	:	14.3	:	6.9

Note: * These figures refer to the 15-29 population. Data for earlier years is not available.

Source: Data has been extracted from the Database of the Eurostat, Labour Force Survey http://epp.eurostat.ec.europa.eu/portal/page/portal/employment_social_policy_equality/youth/indicators

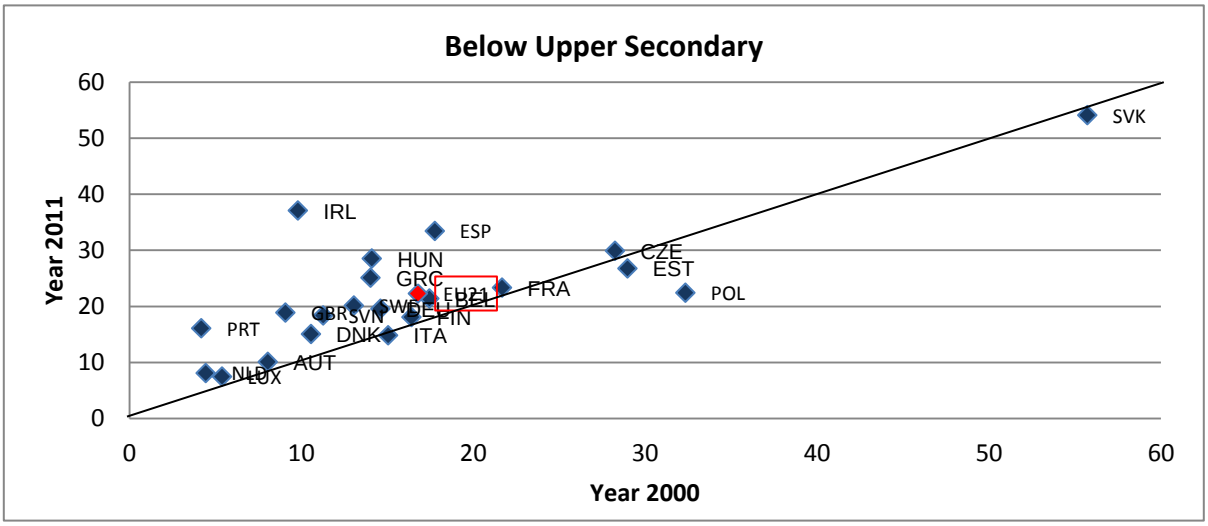
Figure 1 shows the unemployment rates by completed level of education for individuals aged 25-34 in the EU21.[28] These are individuals who completed the core of their investment in education and are in the initial stages of their labour-market experience.

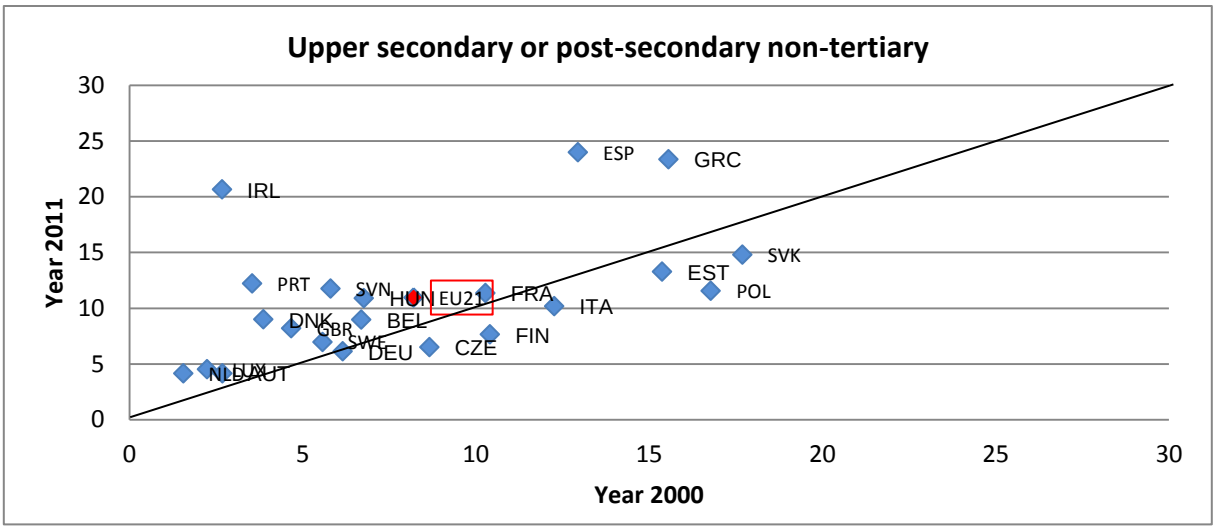
In most countries the unemployment rate declines by level of completed education. For the most recent year available, the average unemployment rate is equal to 22.3% for those with below *upper secondary education*, 11.0% for those who completed *upper secondary (or post-secondary non-tertiary)* education, and 7.6% for those with *tertiary education*. In general, the most severe increase in unemployment over 2000-2011[29] has been experienced by the less educated. However, there are some differences across countries worth noticing. The upper graph shows some persistence in unemployment rates for the *below upper secondary* category, with some Southern European countries (Greece, Portugal and Spain) experiencing a post-crisis increase in unemployment of more than 10 percentage points, and Ireland with +27 percentage points. Estonia and Poland show slightly lower rates of unemployment with respect to 2000 whereas the Slovak Republic exhibits the highest rates of unemployment, close to 55%. The *upper secondary (or post-secondary non-tertiary)* category shows a more heterogeneous picture with some Eastern European countries (i.e., Estonia, Poland and the Slovak Republic) displaying a decline of about 5 percentage points, and on the other hand, some of the countries most severely hit by the economic downturn (Ireland, Greece and Spain) showing an increase in unemployment close to 10 percentage points. Most countries in the sample display at the *tertiary* level higher persistence over time. Notable exceptions are represented by some of the lowest performing Southern economies (Greece, Portugal and Spain).

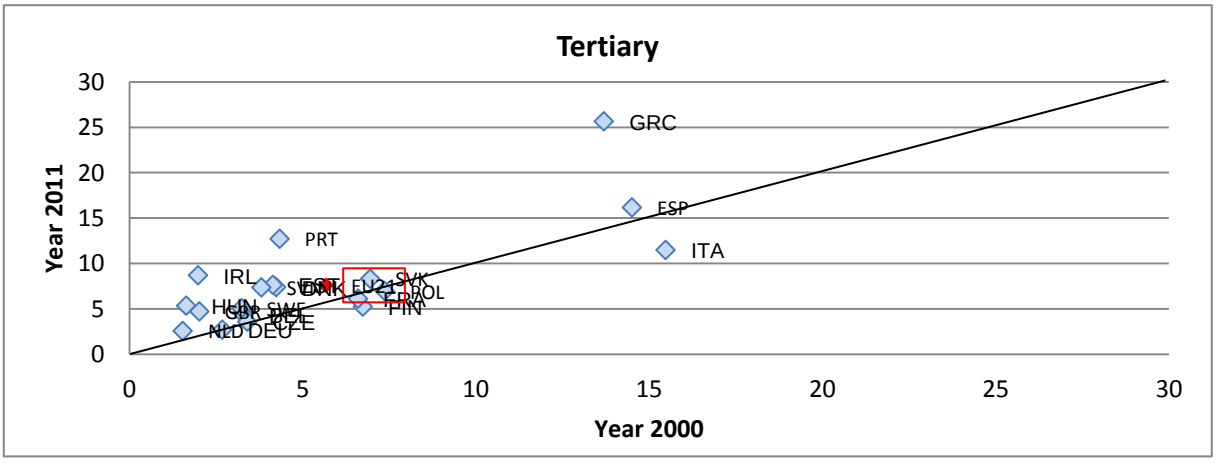
It is also important to notice while focusing on the relationship between the unemployment (employment) rate and education that the EU countries considered have quite different levels of educational attainment among the youth population. In this regard, depending on the distribution of educational achievement, very high rates could actually reflect rather small absolute numbers of individuals. Moreover, educational attainment has increased in Member States with differences across countries (LFS Eurostat database 2014).

[28] These are the Member States for which data is available.
[29] This is the most recent year for which this data is currently available.

Figure 1: Unemployment rates of 25-34 by completed level of education, 2000 and 2011



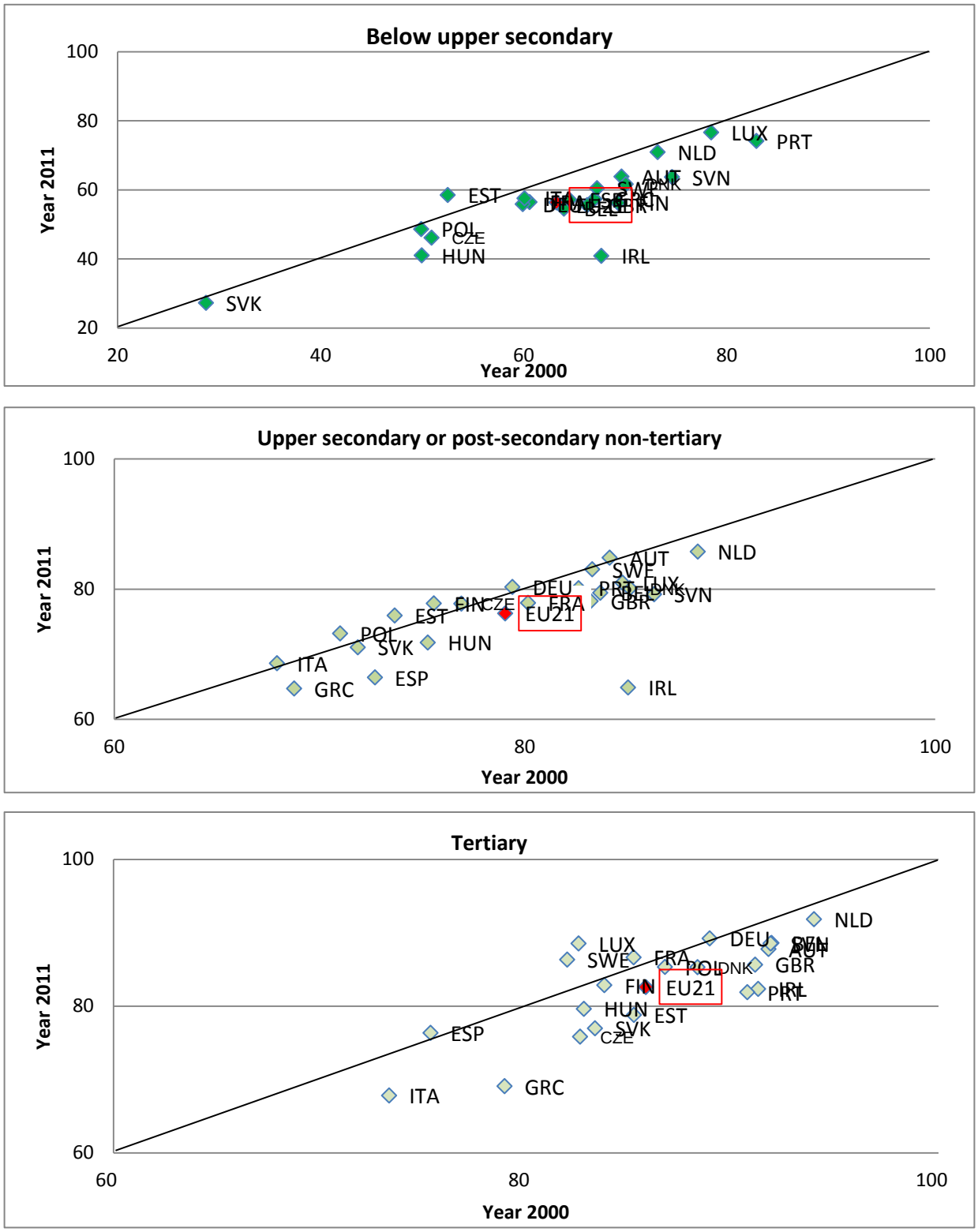




Note: no reliable estimates are available for Austria (2000) and for Luxembourg (2000, 2011) for the tertiary education category
Source: OECD (2013a)

Graphs on unemployment are complemented by Figure 2 which shows the employment rates by completed level of education for the same sample of Member States. Consistent with the previous figure, employment rates increase by level of education: in 2011 they are equal to 56 percent for the *below upper secondary*, 76 percent for the *upper secondary (or post-secondary non-tertiary)* and 83 percent for the *tertiary* educated. On average, employment rates have declined since the year 2000 for all education groups. Similarly the heterogeneity across countries declines at higher levels of education. Employment rates for the *below upper secondary* category are more heterogeneous than for the other groups and in 2011 vary between 27% for the Slovak Republic and 77% in Luxembourg. On average, the largest decline in employment has been experienced by the Southern European countries. Employment rates are more persistent in the case of *upper secondary (or post-secondary non-tertiary)* and *tertiary education.* In the latter case the decline has been more important for the Southern European countries.

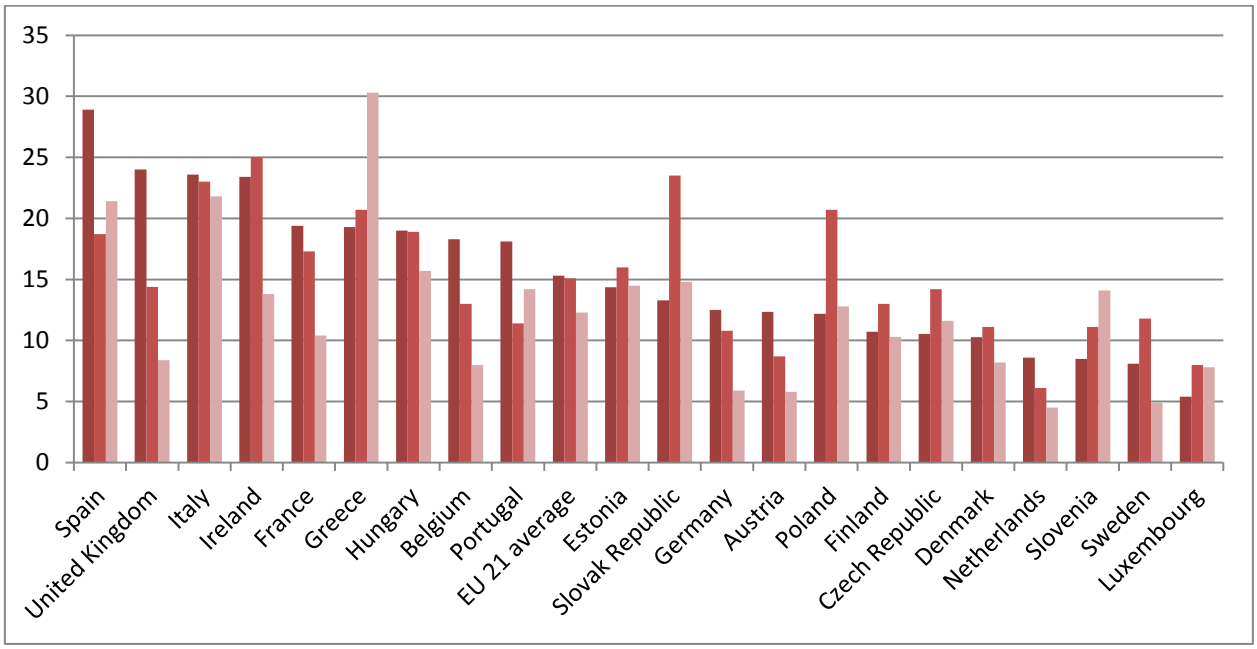
Figure 2: Employment rates of 25-34 by completed level of education, 2000 and 2011



Source: OECD (2013a)

To have a complete overview it is important to also focus on those young people who have dropped out of the labour market and are inactive. Figure 3 shows the share of the 15-29 who are *not in employment, education or training* by completed level of education. In general, the share of NEET declines by level of education. The EU 21 average is equal to 15.3 percent for the *below upper secondary* group, 15.1 percent for the *upper secondary (and or post-secondary non-tertiary)* and 12.3 percent for the *tertiary* educated. In countries like the United Kingdom, the Netherlands, Belgium, the ratio between the *below upper secondary* and *tertiary* is greater than 2. On the other hand, a more complex relationship between education and disengagement from the labour market appears for other countries. All Southern European countries display a large share of NEET even among the more educated. In Greece and Slovenia the share of NEET with *tertiary* education is significantly larger than for the lower educational categories, whereas in Poland and the Slovak Republic the largest share of NEET is in the *upper secondary (and or post-secondary non-tertiary)* group.

Figure 3: Share of 15-29 year-old not in employment, education or training by completed level of education, 2011



Note: The three categories include the following levels of education:
--- Below upper secondary [ISCED 0 (early-childhood), ISCED 1 (primary), ISCED 2 (lower secondary)]
--- Upper secondary and or post-secondary non-tertiary [ISCED 3 (upper secondary), ISCED 4 (post-secondary non-tertiary)]
--- Tertiary [ISCED 5 (short cycle tertiary education), ISCED 6 (bachelor's or equivalent level)]

Source: OECD (2013a)

Previous graphs display the positive association between employment and level of completed education. As recent research has highlighted what really matters in terms of labour-market outcomes is not the *quantity* but the *quality* of education. That is, the quality of the cognitive skills acquired through education is an important determinant of workers' productivity. International education surveys provide consistent evidence over different dimensions of cognitive skills acquired by students across a large number of countries. Among these, the Programme for International Student Assessment (PISA) is run every three years by the OECD and tests the acquired skills in mathematics, reading and science for students close to the end of compulsory schooling (i.e., 15 year-olds), and how these acquired skills can be used in real life situations. On the other hand, the IEA's Trends in

Mathematics and Science (TIMSS) provides a test in mathematics and science closer to the curriculum taught in class for students in 4th and 8th grades.[30] These international studies do not allow assessing the association between skills levels and employment as they target students who are still in compulsory education.

Comparable data on adult skills has only recently become available. In this regard, the OECD's Programme for the International Assessment of Adult Competencies (PIAAC) surveys adults (aged 16-65)'s skills that are regarded as being fundamental for information-processing.[31,32] These include skills in literacy, numeracy and problem solving in technology-rich environments. Among the twenty-four countries and sub-national regions participated to the first round of the survey[33], there are seventeen Member States: Austria, Belgium (Flanders), Cyprus[34], Czech Republic, Denmark, Estonia, Finland, France, Germany, Ireland, Italy, the Netherlands, Poland, the Slovak Republic, Spain, Sweden, the United Kingdom (England and Northern Ireland).

Figure 4 shows proficiency in literacy skills by work status for the EU countries for which the data is available. The literacy test measures basic competencies: "reading of written texts; it does not involve either the comprehension or production of spoken language or the production of text (writing)" [OECD (2013b) p.61]. The upper graph presents the data related to the adult population at the bottom of the proficiency scale (*level 1 and below*) whereas the lower graph shows the data at the high-end of the literacy scale (*level 4/5*).[35] At the lowest

[30] Hanushek and Woessmann (2011) provide a review of the recent international research that relies on these datasets and Freeman and Viarengo (2014) provide some evidence on the role that schools play in determining students' learning outcomes.

[31] Data collection occurred between August 2011 and March 2012 in most participating countries. More information on this international survey is available on the OECD website: http://www.oecd.org/site/piaac/surveyofadultskills.htm

[32] The report in English presenting the results from the Danish longitudinal study that links PISA to PIAAC by testing students who participated to PISA 2000 again twelve years later is currently not available (http://eng.uvm.dk/News/~/UVM-EN/Content/News/Eng/2014/140617-PISA-PIAAC-results).

[33] These countries are: Australia, Austria, Belgium (Flanders), Canada, Czech Republic, Denmark, Estonia, Finland, France, Germany, Ireland, Italy, Japan, Korea, Netherlands, Norway, Poland, Russian Federation, Slovak Republic, Spain, Sweden, United Kingdom (England and Northern Ireland), United States.

[34] Only the southern part of the Cyprus island participated to the survey. Therefore it has not been included in the analysis that follows.

[35] The level of skills measure the following [extracted from the OECD (2013b) pp.63-64]:

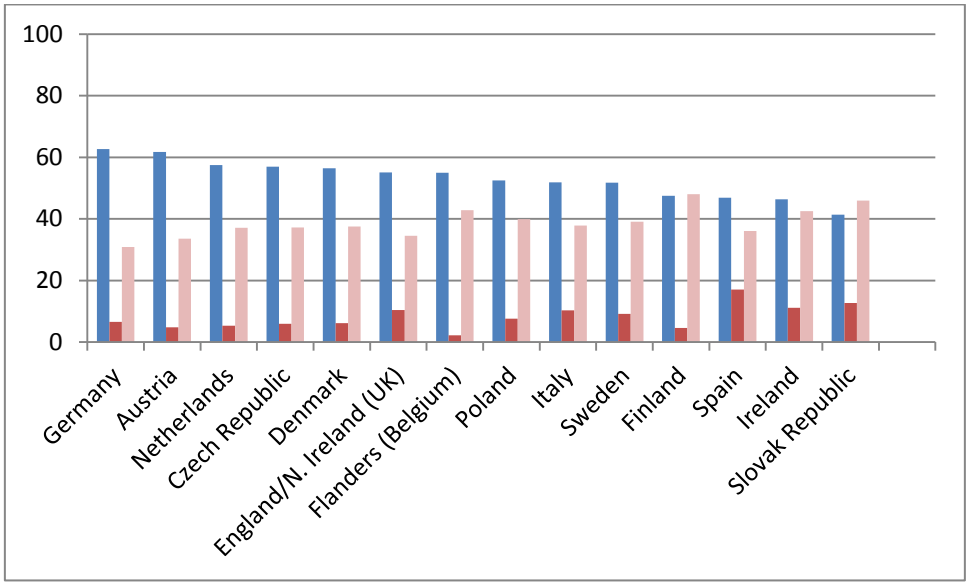
end of the proficiency scale adults can undertake basic tasks that require an elementary understanding and knowledge of vocabulary, and do not require processing of digital texts. The average employment for this category is less than 60%, and in most countries the share of workers out of the labour force is two to three times as high as the share of unemployed. On the other hand, adults who score at *levels 4/5* of the literacy proficiency scale can perform advanced tasks of elaboration and analysis of any forms of written text. Among these workers, the average employment is high, close to 80 percent in most countries, and the unemployment and out-of-the labour force rates are below 20%. However, in some Southern and Eastern European countries (Italy, Spain, Poland, Czech and Slovak Republics) the employment rates are below 80% and the unemployment and out-of the labour force rates are higher than in the other countries. This suggests a more complex situation, likely not related only to education and training, but more likely to be related to other dysfunctions of the economy (lack of growth, poor macroeconomic performance).

Level 1 and below: (<176 points): "The tasks at this level require the respondent to read brief texts on familiar topics to locate a single piece of specific information. […] Only basic vocabulary knowledge is required, and the reader is not required to understand the structure of sentences or paragraphs or make use of other text features. Tasks below Level 1 do not make use of any features specific to digital texts"

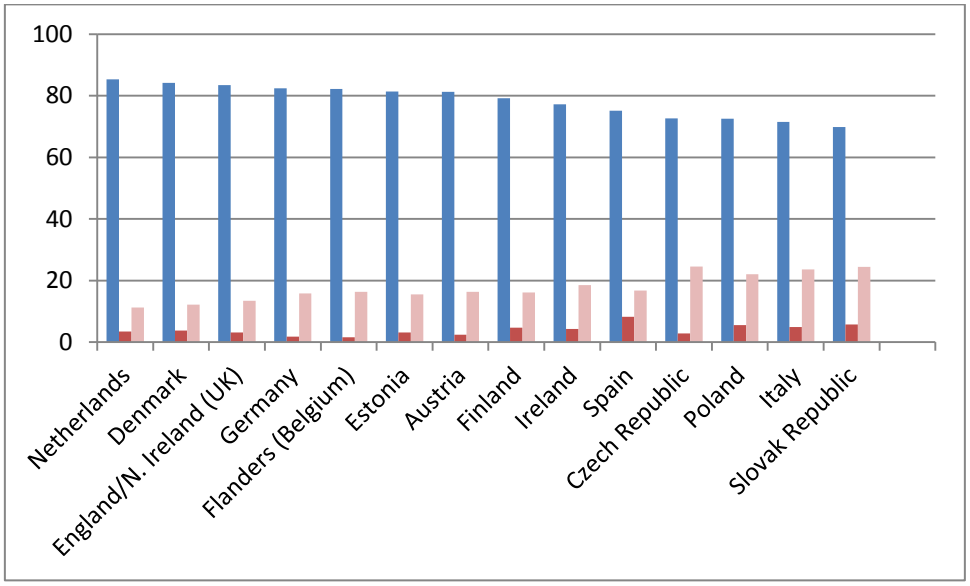
Level 4/5: (>376 points): "At this level, tasks may require the respondent to search for and integrate information across multiple, dense texts; construct syntheses of similar and contrasting ideas or points of view; or evaluate evidence based arguments. […]Tasks often require respondents to be aware of subtle, rhetorical cues and to make high-level inferences or use specialised background knowledge".

Figure 4: Work status by level of skill proficiency, 16-65, PIAAC 2013

A] Low Skill Proficiency [Literacy proficiency Level 1 and below]



B] High Skill Proficiency [Literacy proficiency Level 4/5]



Note: The three categories are related to work status:
--- Employed
--- Unemployed
--- Out of the labour-force

Source: OECD (2013b)

A2.4 The GHK Study

GHK – European Commission (2014), "Working with young people: the value of youth work in the European Union" http://ec.europa.eu/youth/news/2014/20140219-youth-work-study_en.htm

Aims: The study provides an overview over the youth work sector at the EU level and for the 28 Member States. The aim is to identify the characteristics of successful youth work by relying on the analysis of qualitative data collected through interviews and panel discussions.

Method: The report provides a description of various aspects of youth work: some characteristics of youth work (chapter 2), the legal framework in Member States (chapter 3), a summary of the main responsible bodies at the national level (chapter 4), the political landscape (chapter 5), a description of some characteristics of youth workers across the EU (chapter 6), and a summary of the existing evidence "about the outcomes of youth work" (p.44) (chapter 7). The core of the analysis is presented in chapter 8, which draws on "the experience of those involved in youth work to summarise the elements that make up successful youth work" (p.44).

Country reports were prepared in the framework of this project. The method used to prepare these country specific studies is described at p. 46. It relied on carrying out panel discussions and 159 interviews to people regarded as experts (i.e., ministry/national agency responsible for youth related issues; youth council/youth organisation/association; academic/independent experts; NGOs; other individuals involved in youth work), and 14 interviews to EU-level stakeholders.

The data used in the report is mainly qualitative: "the data collected through the methodology was primarily qualitative in nature, though some information was quantifiable" (p.53), and, in spite of an effort, the qualitative data collected is not fully consistent and comparable across countries (see discussion in section 1.3.2 at p.53).

Case studies of country-specific youth work programs are presented in a separate volume of the report (http://ec.europa.eu/youth/library/study/youth-work-case-studies_en.pdf).

Findings: a summary of the study is provided in section 9. *Strengths and weaknesses*, as well as *opportunities and threats* are "identified" in the report are summarized in section 9.2.

Limitations: the study presents a valuable effort to provide a consistent overview about youth work at the EU level, also by trying to put together information from existing sources and interviews in a unified framework to learn from success stories across Member States. However, based on the analysis presented it is not possible to 'identify' the impact of these programs. That is, the report is mainly descriptive and it is not possible to draw implications about the causal effect of these programs on outcomes. Qualitative data is a valuable source to understand some aspects of programs and interventions that cannot be examined with the empirical analysis. However, by relying on this information it is not possible to understand what would have happened without the social program. This is at the core of the program evaluation analysis (*counterfactual analysis*). Among others, issues related to the fact that participants to the social programs are often not randomly selected but have some characteristics that may have an impact on outcomes without being related to the effect of the social program (*selection bias*) have to be addressed with the appropriate techniques. Last, descriptive case studies provide insightful information about features of successful programs but if not evaluated with the appropriate empirical techniques do not make it possible to draw implications about their possible successful implementation in other countries with different institutional environments. Our analytical report relies on a selection of studies that address these issues, and make it possible to estimate the causal impact of the programs examined and discuss policy implications.

EENEE Analytical Reports

22	Francis Kramarz Martina Viarengo	Using Education and Training to Prevent and Combat Youth Unemployment
21	Jo Blanden Sandra McNally	Reducing Inequality in Education and Skills: Implications for Economic Growth
20	Ludger Woessmann	The Economic Case for Education
19	Daniel Münich George Psacharopoulos	Mechanisms and methods for cost-benefit / cost-effectiveness analysis of specific education programmes
18	Reinhilde Veugelers Elena Del Rey	The contribution of universities to innovation, (regional) growth and employment
17	Giorgio Brunello Maria de Paola	The costs of early school leaving in Europe
16	Samuel Muehlemann Stefan C. Wolter	Return on investment of apprenticeship systems for enterprises: Evidence from cost-benefit analyses
15	Hessel Oosterbeek	The Financing of Adult Learning
14	Susanne Link	Developing key skills: What can we learn from various national approaches?
13	Marc Piopiunik Paul Ryan	Improving the transition between education/training and the labour market: What can we learn from various national approaches?
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3	Martin Schlotter Guido Schwerdt Ludger Woessmann	The Future of European Education and Training Systems: Key Challenges and their Implications
2	George Psacharopoulos	The Costs of School Failure – A Feasibility Study
1	Ludger Woessmann Gabriela Schuetz	Efficiency and Equity in European Education and Training Systems