
Young People (not) in the Labour Market in Rich Countries during the Great Recession

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YOUNG PEOPLE (NOT) IN THE LABOUR MARKET IN RICH COUNTRIES DURING THE GREAT RECESSION

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Abstract. The global financial crisis of 2007/2008 spilled over into the real economy reducing demand for labour and increasing unemployment. Young people were hit hard, with record numbers of 15-24-year-olds out of work and many of them not in education, employment or training (NEET). More than five years since the outbreak of the financial crisis, the economic recovery remains weak and uneven. This paper investigates changes in unemployment, the NEET rate and temporary employment among 15-24-year-olds in 41 countries of the European Union (EU) and/or the Organisation for Economic Co-Operation and Development (OECD) between 2008 and 2013 and analyses the relationship between these indicators and changes in economic conditions. The study documents a substantial worsening in the youth labour market situation during the Great Recession across the EU and/or OECD, particularly in countries that suffered greater falls in economic output per capita. However, changes in the NEET rate tend to be driven by increases in unemployment rather than inactivity, while the share of young people who are inactive and not in education or training has remained stable. Moreover, although youth unemployment increased faster than prime-age unemployment, the ratio of youth to prime-age unemployment has largely stayed constant. This suggests that, although young people need to be equipped to make a successful transition from school to work, targeting policies exclusively at youth will not fully address the problem of NEETs in times of economic turbulence amidst dwindling demand for labour and soaring adult unemployment.

Keywords: youth unemployment, NEET, temporary employment.

JEL classification: J13, J24, J64.

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Country abbreviations

Australia	AU
Austria	AT
Belgium	BE
Bulgaria	BG
Canada	CA
Chile	CL
Croatia	HR
Cyprus	CY
Czech Republic	CZ
Denmark	DK
Estonia	EE
Finland	FI
France	FR
Germany	DE
Greece	GR
Hungary	HU
Iceland	IS
Ireland	IE
Israel	IL
Italy	IT
Japan	JP
Latvia	LV
Lithuania	LT
Luxembourg	LU
Malta	MT
Mexico	MX
Netherlands	NL
New Zealand	NZ
Norway	NO
Poland	PL
Portugal	PT
Republic of Korea	KR
Romania	RO
Slovak Republic	SK
Slovenia	SI
Spain	ES
Sweden	SE
Switzerland	CH
Turkey	TR
United Kingdom	UK
United States	US

1. INTRODUCTION

The global financial crisis of 2007/2008 spilled over into the real economy reducing demand for labour and increasing unemployment. Young people were hit hard, with record numbers of 15-24-year-olds out of work and many of them neither in education or training (Scarpetta, Sonnet, and Manfredi 2010; OECD 2013a; 2014). More than five years since the outbreak of the financial crisis, the economic recovery remains weak and uneven. The labour market situation of young people continues to worsen globally, with the fastest increase in youth unemployment between 2007 and 2012 registered in the Developed Economies and European Union region (International Labour Organization 2013). Experiencing unemployment upon entering the labour force for the first time can have a scarring effect on future employability and wages as well as on subjective well-being and health (Bell and Blanchflower 2011). Where more than one in three young job seekers is unemployed or one in five youths is not in work, education or training, an entire generation of young people is at risk of social exclusion as they cannot afford to live independently and engage in society fully.

This paper investigates changes in the labour market situation of 15-24-year-olds in 41 countries of the European Union (EU) and/or the Organisation for Economic Co-operation and Development (OECD) between 2008 and 2013, the latest year for which internationally comparable data are available. Although some of these economies recovered by 2010, some were hit by the crisis relatively late and others experienced a double dip downturn, this paper refers to the whole period 2008-2013 as the Great Recession. By extending the study beyond the global recession of 2009 into the period of muted and uneven recovery, the delayed impact of the economic crisis on young people's labour market outcomes can be captured.

First, to find out if young people have been affected by the crisis disproportionately, the paper investigates trends in youth unemployment as well as changes in the relative situation of young people compared with prime-aged adults. To account for the fact that some countries were more exposed to the crisis than others, associations between these indicators and changes in economic output are analysed.¹ Second, the relationship between changes in the proportion of youth not in education, employment or training (the NEET rate) and the degree of exposure to the crisis is investigated. To infer if certain sub-groups suffered more, differences by demographic characteristics (i.e. age, gender, educational attainment) are studied. To delve into what drives variations in the NEET rate and, in particular, whether increasing participation in education can offset the rise in youth unemployment, trends in unemployment, inactivity and educational participation are analysed further. Third, to shed light on the situation of young workers during the Great Recession, changes in the share of temporary employees are explored.

2. LITERATURE REVIEW AND HYPOTHESES

Experiencing unemployment upon entering the labour force for the first time can have a scarring effect on future employability and wages as well as on subjective well-being and health (Skans

¹ See Natali et al (2014) for an analysis of trends in a variety of child well-being indicators in European countries separately by exposure to the crisis.

2011). Data from a British cohort study² reveal that youth unemployment has sizeable and lasting adverse effects on adult employment and earnings (Gregg 2001; Arulampalam, Gregg, and Gregory 2001; Gregg and Tominey 2005). Broadly similar findings are documented using longitudinal data³ for the United States (Mroz and Savage 2006). Although most studies focus on men, there is also evidence of scarring effects on wages for women (Corcoran 1982; Gregg and Tominey 2004). Even those who finish university and find employment during the crisis may end up on a lower earnings trajectory, as graduating in a bad economy has large and persistent negative effects on wages (Kahn 2010).

Young people in industrialized countries have been disadvantaged in the labour market at least since the 1970s, when a large cohort of “baby boomers” entered the labour force (Bell and Blanchflower 2011). Even in periods of economic growth, youth unemployment tends to be higher than that of prime age adults because of young workers’ limited work experience (both general and specific to a particular firm) and employers’ last-in first-out dismissal policies and seniority protection. Therefore, it is perhaps not surprising that across high income countries, youth unemployment is more sensitive to the business cycle than overall unemployment (Scarpetta, Sonnet, and Manfredi 2010). Moreover, because the recent economic crisis has seen an unprecedented increase in youth unemployment across the EU, even compared with the recession of the early 1990s (Arpaia and Curci 2010), it is expected that youth unemployment increased to a greater extent in countries that were more exposed to the crisis.

Furthermore, it is of interest if young people have been affected more than prime-aged workers. There is evidence that financial crises tend to take a disproportionate toll on the labour market outcomes of young people (Choudhry, Marelli, and Signorelli 2012). Indeed, across the EU, unemployment rates rose faster for 16-24-year-olds than for those aged 25-64 between 2008 and 2010 (Bell and Blanchflower 2011).⁴ However, at the same time, the ratio of the youth unemployment rate to that of prime-aged workers has not changed dramatically,⁵ suggesting that “the crisis has not resulted in a systematic increase in the relative youth unemployment rate” (Skans 2011, 40). Therefore, using more recent data, this paper delves into the question of whether youth unemployment in rich countries has indeed increased disproportionately compared with prime-age workers. If young people are hit hardest during the Great Recession, policies could target the youth to help them make a successful school-to-work transition, but if the labour market has worsened for all age groups equally, focusing exclusively on the young may not be the most efficient approach. Overall, it is expected that in countries that were more exposed to the crisis, youth unemployment rose faster than prime-age unemployment and the youth-adult ratio increased to a great extent.

Although there is a lot of emphasis on youth unemployment in the literature, this measure disregards those who are outside the labour force. Young people may be economically inactive while in full-time education, but it is those who are not in employment, education or training (the so called NEETs) who are at the greatest risk of exclusion from the labour market. Having

² The National Child Development Study (a longitudinal survey following up the lives of everyone born in Great Britain in a particular week in 1958 at the ages of 7, 11, 16, 23, 33, 41-42, and 46-47).

³ National Longitudinal Survey of Youth 1979 (a nationally representative sample of individuals who were 14-22 years old when they were first surveyed in 1979, interviewed annually or biannually since then).

⁴ With the exception of Austria and Germany, the percentage point increase in the unemployment rate for those 25 or younger was greater than for those aged 25 or over between Q1-2008 and Q4-2010 in each member state of the EU-27 (Bell and Blanchflower 2011, 248).

⁵ Using data for 33 OECD countries, Skans (2011) plotted the ratio of the unemployment rate among 15-24-year-olds to that among 25-54-year-olds in 2009 to the corresponding youth-adult ratio in 2007 and found that most countries clustered around the 45-degree line.

originated in studies of youth disadvantage in the UK in the late 1980s, the term NEET gained wide acceptance in research and policy across the EU and the OECD (Eurofund 2012). The NEET rate is now routinely reported alongside youth unemployment figures (ILO 2014). It is expected that, like youth unemployment, the NEET rate also increased the most in countries more exposed to the crisis. Since young people may stay in education longer or return to education when few jobs are available, it is also of interest to investigate the extent to which the increases in educational participation may have offset the fall in youth employment.

Young employees tend to be on temporary contracts that make them more exposed to dismissal in economic downturns (OECD 2013b). There is a debate in the literature on whether temporary employment is a trap or a bridge towards more secure and stable employment (see Gebel 2013). Compared with permanent tenure, temporary employment is often characterised by lower pay and fewer opportunities. However, compared with remaining unemployed, taking up a temporary job can be a route to integration in the labour market. Across the OECD, temporary employment has increased since the onset of the crisis, reflecting “the reluctance of firms to rehire workers on open-ended contracts in an uncertain economic environment” (OECD 2012, 14). It is expected that in countries where the share of temporary youth employment had already been high, it increased further during the Great Recession, especially in countries more exposed to the crisis.

3. DATA AND DEFINITIONS

All statistics analysed in this paper are based on estimates from national labour force surveys as reported by Eurostat and/or the OECD. These surveys typically include large samples of individuals aged 15 and over living in private households. Labour force surveys adhere to the International Labour Organization guidelines on definitions⁶ and data collection, but limitations to international comparability nevertheless exist (ILO 2014, page 35).

This paper focuses on the 15 to 24 age group because they are typically referred to as “youth” in the labour force statistics.⁷ However, they are not a homogenous population. Many of the 15-19-year-olds may still be in compulsory schooling and not looking for work, while the older cohort is more exposed to the labour market. There is evidence that the drivers of NEET rates are different for the 15-19-year-olds than for the 20-24-year-olds: those in the younger cohort are more likely to stay or return to education or training when the adult unemployment rate is higher, while in the older cohort, increased enrolment in education is eclipsed by rising unemployment (OECD 2015).

Following the ILO definition, the youth unemployment rate is calculated as the number of unemployed 15-24-year-olds divided by their number in the labour force. The unemployed are those “who, during the reference period, were: (a) without work; (b) currently available for work;

⁶ Contained in the recommendation of the 13th International Conference of Labour Statisticians, convened in 1982 by the International Labour Organization (http://www.ilo.org/global/statistics-and-databases/meetings-and-events/international-conference-of-labour-statisticians/WCMS_221500/lang-en/index.htm).

⁷ The International Labour Organization defines those aged over the minimum school leaving age and under 25 as “youth” and the EU refers to the unemployment rate among the 15-24-year-olds as the “youth unemployment rate”. However, the OECD focuses on a broader category of 15-29-year-olds in their analysis of school-to-work transitions (OECD 2013a). Although there is evidence that the 25-29-year-olds also suffered greatly during the crisis, they are out of the scope of this study.

and (c) actively seeking work” (ILO 2014, 75). The labour force consists of the employed and the unemployed.

This definition disregards those who are not economically active (i.e. not in the labour force). Given the same number of people who are not working, the unemployment rate is often higher than the share of people in a particular age group who are not employed, because some of those who are not working are either not available or not searching for work. Since many young people are not in the labour force while they are studying,⁸ the youth unemployment rate can be artificially affected by fluctuations in educational participation without any changes in the number of young job seekers.

In contrast, the share of youth who are not in employment, education or training (NEET) is a measure of exclusion both from the labour market and education. It may be lower than the youth unemployment rate, but it identifies a particularly disadvantaged group of young people who have not made a successful transition from school to work. In international comparisons it can be used as an indicator of participation in education (UNICEF Office of Research 2013), economic activity (Chzhen and De Neubourg 2014) or school to work transition (OECD 2013a). However, as the NEET population is by definition mixed, consisting of both the unemployed and the inactive, the NEET rate is most useful as complementary to either youth unemployment or education enrolment rates.

Thus, changes in the NEET rate can be decomposed in a number of ways. First, it can be divided into the share due to unemployment and the share due to inactivity. Second, the change in the NEET rate can be decomposed into changes in the shares of those who are: 1) employed, but not in education; 2) employed and in education; and 3) in education, but not in employment. This helps delve into what drives variations in the NEET rate over time and across countries. Third, to investigate whether 15-19-year-olds or 20-24-year-olds suffered more during the Great Recession, the change in the NEET rate is calculated separately by age group.

Finally, changes in the share of young people on temporary contracts across countries are analysed. The EU Labour Force Survey defines temporary employees as those who “declare themselves as having a fixed term employment contract or a job which will terminate if certain objective criteria are met, such as completion of an assignment or return of the employee who was temporarily replaced.”⁹

4. RESULTS

4.1 Trends and cross-country variation in youth unemployment

Youth unemployment has escalated across the vast majority of EU and/or OECD countries during the Great Recession. Figure 1 plots the unemployment rate among the 15-24 age group for 2008 and 2013, ranking countries by the magnitude of absolute change. In only five out of 41 countries have the rates fallen by one point or more: Turkey (-2ppt), Israel (-2ppt), Luxembourg (-2ppt), Germany (-3ppt) and Chile (-4ppt). There was virtually no change in Japan or Korea, with youth unemployment below 10% both in 2008 and 2013. Japan now has the lowest unemployment rate

⁸ There may, of course, be other reasons for inactivity (e.g. disability; taking care of family; travelling), but they are, by and large, less common among 15-24-year-olds than schooling.

⁹ http://epp.eurostat.ec.europa.eu/cache/ITY_SDDS/en/lfsa_esms.htm.

in the comparison. In contrast, the Netherlands boasted the lowest youth unemployment rate of 5% in 2008, but it more than doubled by 2013, placing the Netherlands in the bottom half of the ranking in terms of the absolute changes.

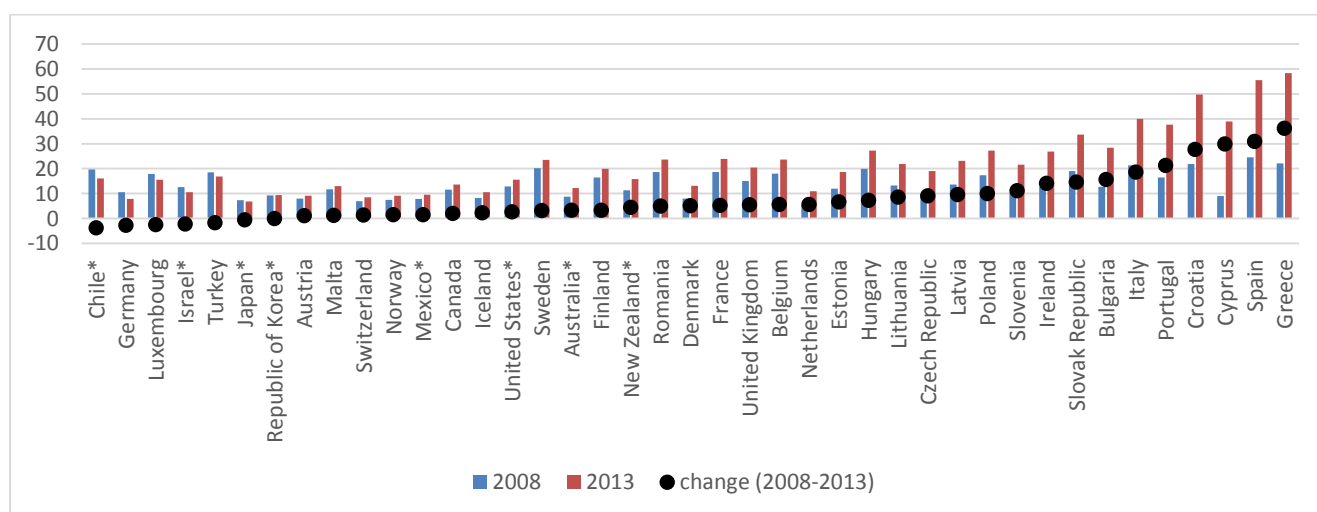
Five countries stand out with increases of more than 20 percentage points: Portugal (21ppt), Croatia (28ppt), Cyprus (30ppt), Spain (31ppt), and Greece (36ppt). With at least one in three young job seekers unemployed, these countries had the highest absolute levels of youth unemployment in 2013. Longer term trends for the above countries show that youth unemployment was falling steadily between 2004 and 2007/2008, but rose sharply since then (Figure A1 in the Annex). The pattern is particularly striking for Greece and Spain, with youth unemployment rates starting at the already high level of around 20% in 2008 and going over the 50% threshold in 2012. Only Portugal shows any sign of a steadying in youth unemployment.

In six other countries youth unemployment has not increased as dramatically, but at least one in four 15-24-year-olds in the labour force were looking for work in 2013: Ireland (27%), Hungary (27%), Poland (27%), Bulgaria (28%), Slovak Republic (34%), and Italy (40%). While in Hungary and Poland the youth unemployment rate went up by 7-10ppt since 2008, the other four saw larger increases of 14-19ppt (or a doubling of the youth unemployment rate in relative terms).

Eight other countries experienced mid-range absolute increases in youth unemployment, but between one in five and one in four economically active 15-24-year-olds were out of work in 2013: the United Kingdom (21%), Slovenia (22%), Lithuania (22%), Latvia (23%), Belgium (24%), France (24%), Sweden (24%) and Romania (24%).

Overall, EU countries experienced greater increases in youth unemployment rates than non-EU countries: the largest non-EU increases were in New Zealand (5ppt), Australia (3ppt), and the United States (3ppt). However, in countries with large populations even small increases in the youth unemployment rate can represent vast numbers of young job seekers being out of work.

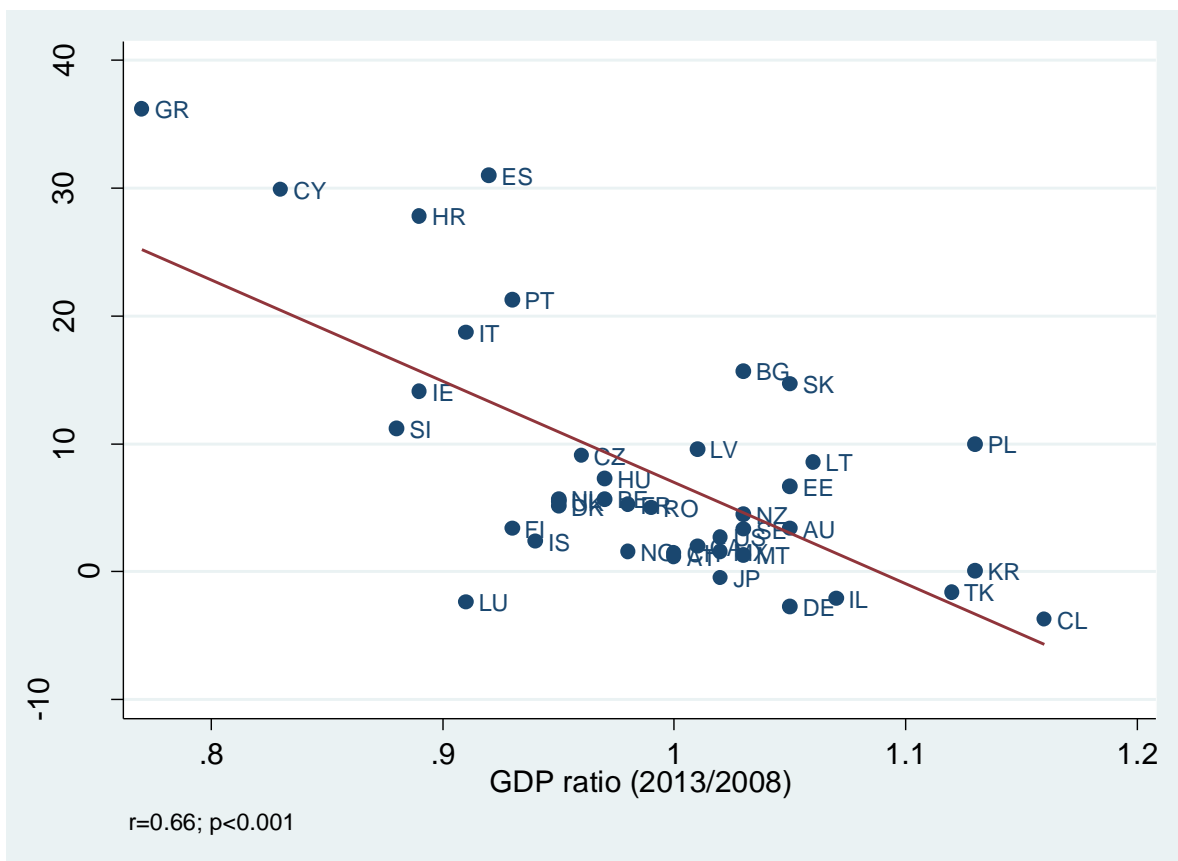
Figure 1 Change (ppt) in youth unemployment (15-24) between 2008 and 2013



Source: Eurostat (last update 21.07.2014); *OECD.Stat Short Term Labour Market Statistics (extracted 18.07.2014).

As expected, increases in youth unemployment are, on balance, greater in countries that have been more exposed to the crisis. Figure 2a plots the absolute change in the youth unemployment rate against the share of the GDP per capita (constant prices) in 2013 to that in 2008. Across 41 countries, there is a strong negative correlation between the percentage point change in the youth unemployment rate and the GDP ratio ($r=0.66$, $p<0.001$).¹⁰ However, this relationship is driven by a group of Mediterranean countries experiencing large increases in youth unemployment while suffering large drops in the GDP per capita at the one extreme and a small group of non-EU countries seeing concurrent GDP growth and falling youth unemployment at the other.

Figure 2a Change (ppt) in youth unemployment (15-24) and exposure to the crisis



Source: Eurostat (last update 21.07.2014); OECD.Stat Short Term Labour Market Statistics (extracted 18.07.2014); IMF World Economic Outlook (April 2014).

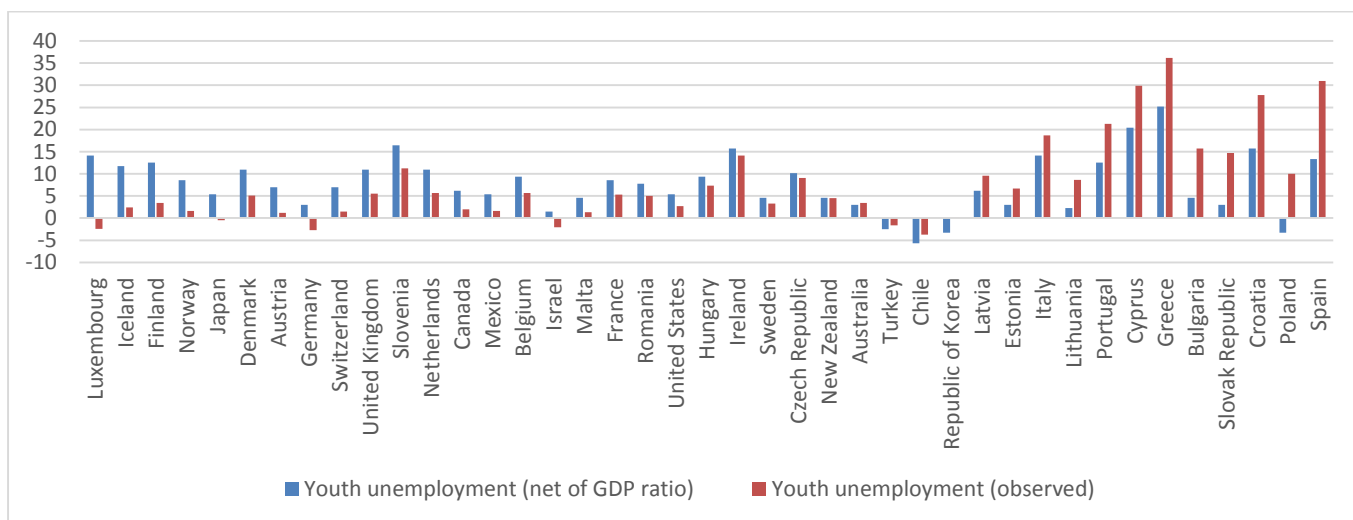
However, Figure 2a also shows that, given the level of the exposure to the crisis, some countries were more successful than others in containing the rise in youth unemployment. For example, given a roughly similar fall in the GDP per capita, youth unemployment decreased in Luxembourg, while in Spain it increased much more than would have been predicted given its GDP ratio.¹¹ A similar pattern is observed for Slovenia and Croatia, with youth unemployment increasing by a smaller amount in the former than in the latter in spite of a similar exposure to the crisis.

¹⁰ The adjusted R-squared is 0.42, suggesting that 42% of variation in the unemployment change is explained by the GDP ratio.

¹¹ Although they exhibit the largest absolute residuals (vertical distances from the regression line), these two countries have little effect on the estimated regression coefficient (i.e. slope of the line).

Figure 2b plots the observed change in the youth unemployment rate as well as the predicted unemployment rate (net of the 2013 to 2008 GDP ratio).¹² Countries are ranked by the size of the difference between the two. The countries on the right hand side experienced a greater increase in youth unemployment than would have been expected given the relative change in the GDP per capita during this period. For example, youth unemployment increased in Poland although it would have been expected to fall (given the average relationship between youth unemployment and the GDP ratio across 41 countries), while the opposite was observed in Germany.

Figure 2b Change (ppt) in youth unemployment (15-24) and exposure to the crisis



Source: Eurostat (last update 21.07.2014); OECD.Stat Short Term Labour Market Statistics (extracted 18.07.2014); IMF World Economic Outlook (April 2014).

Unsurprisingly, increases in youth unemployment went hand-in-hand with increases in adult unemployment (Figure 3a). There is a very tight correlation between the percentage point change in the youth unemployment rate and the absolute change in the unemployment rate of 25-54-year-olds ($r=0.94$, $p<0.001$). Although a substantial 89% of variation in the youth unemployment change is explained by the change in adult unemployment, there are several outliers. In Croatia, Cyprus and Italy, youth unemployment increased to a greater extent than would have been predicted, while Greece, Lithuania and Luxembourg saw smaller increases in youth unemployment than expected.¹³

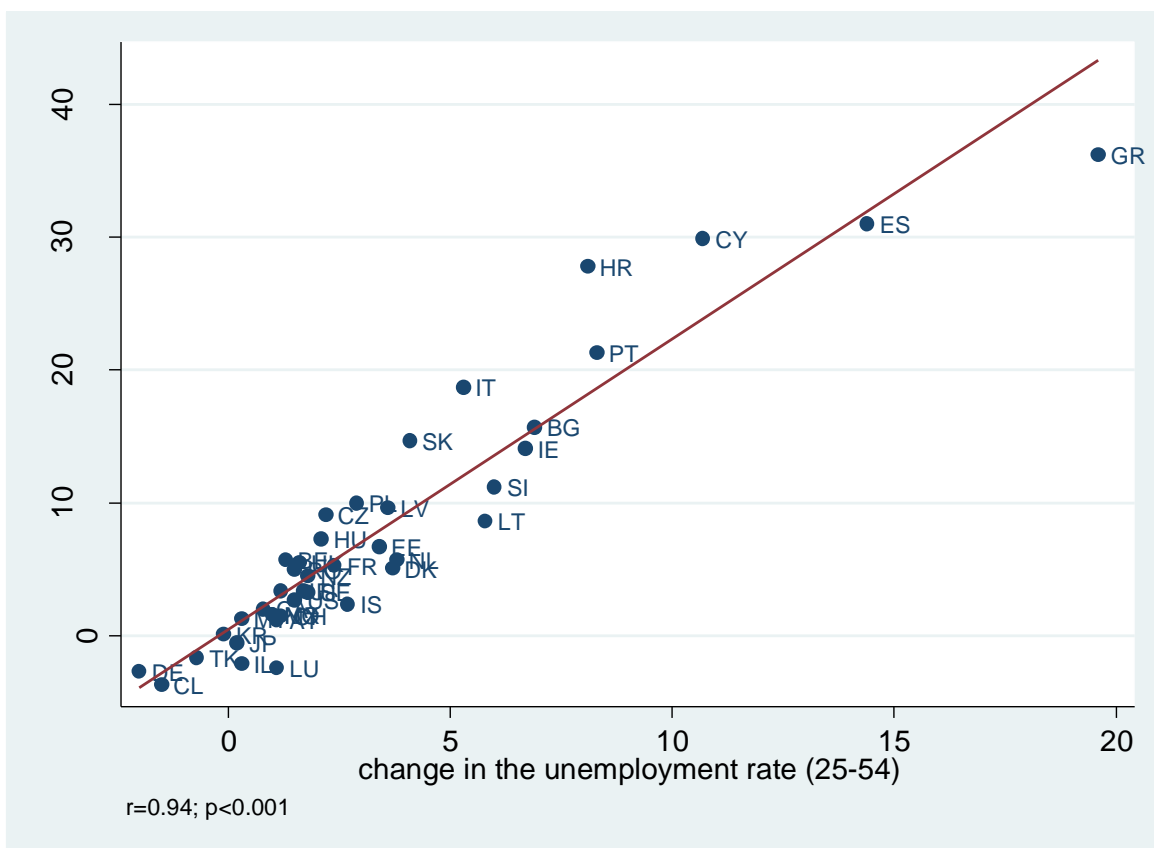
On average, a one point difference in adult unemployment across 41 countries is associated with a statistically significant 2.18-point increase (i.e. a doubling) in youth unemployment. Only in six countries has youth unemployment fallen faster or increased more slowly by one point or more: Chile, Germany, Israel, Japan, Luxembourg, and Turkey. In 31 out of 41 countries the increase in youth unemployment was at least one percentage point greater than the increase in adult unemployment (see Figure A2 in the Annex). The largest differences were in Italy (13ppt), Portugal (13ppt), Greece (17ppt), Spain (17ppt), Cyprus (19ppt) and Croatia (20ppt). These are the same six

¹² The predicted youth unemployment rate (net of GDP ratio) in Figure 2b is the corresponding point on the regression line in Figure 2a.

¹³ Among these countries, Greece is the only influential outlier: excluding it from the model would result in the slope coefficient of 2.45 (i.e. more than two standard errors higher than in the full model).

countries that experienced an even larger absolute increase in youth unemployment than would have been expected given the size of the fall in their GDP per capita (see top left hand corner of Figure 2a). Thus, there is a group of Southern European countries that were hit hard by the Great Recession where young people have clearly suffered disproportionately.

Figure 3a Change (ppt) in youth unemployment (15-24) and adult unemployment (25-54)

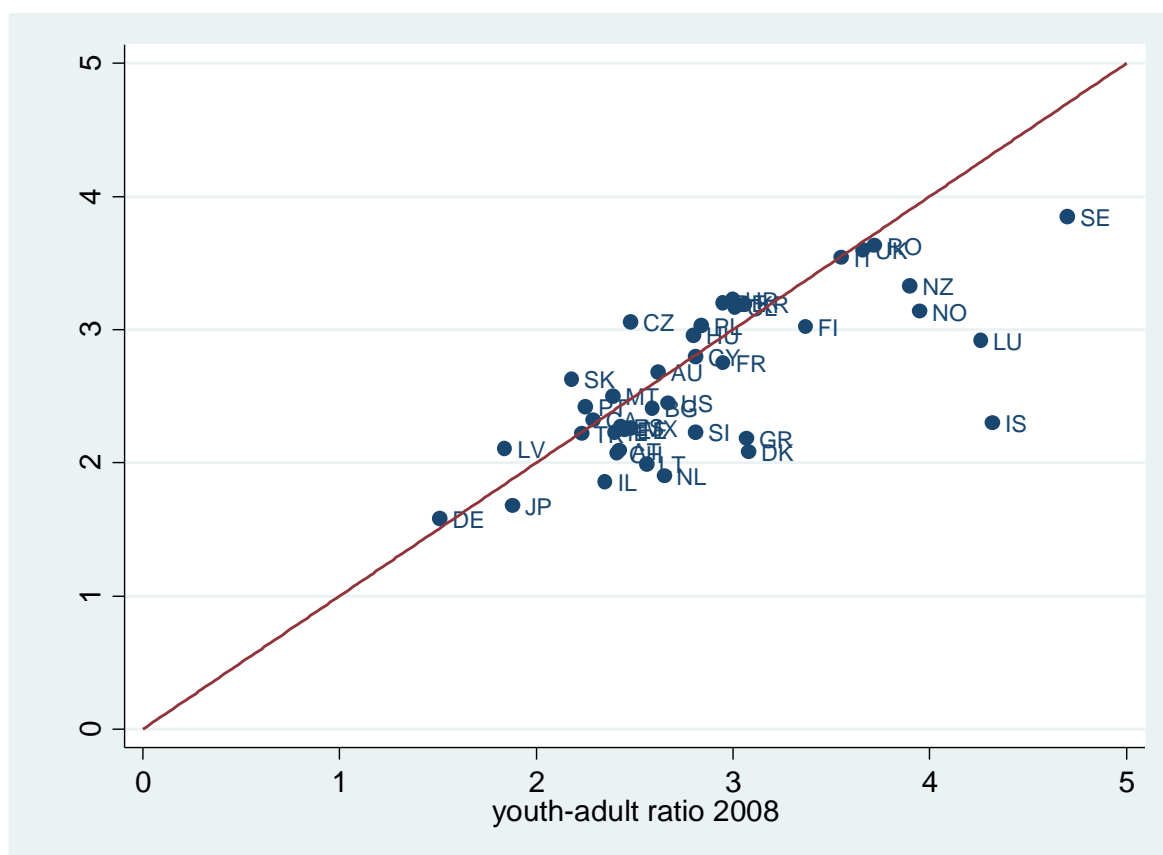


Source: Eurostat (last update 21.07.2014); OECD.Stat Short Term Labour Market Statistics (extracted 18.07.2014).

Although youth unemployment was higher than adult unemployment (25-54) in both 2008 and 2013 in every country,¹⁴ another way of establishing if young people suffered more is to compare the youth-adult unemployment ratio. Figure 3b plots the ratio of youth unemployment to adult unemployment in 2013 to that in 2008, superimposing a 45-degree line. In the countries above (below) the line, the youth-adult ratio is higher (lower) in 2013 than in 2008. Four countries – Canada, Cyprus, Italy and Turkey – lie on the 45-degree line, with the youth-adult ratio unchanged. While 13 countries are above the line, with the largest absolute increase in the youth-adult ratio in the Czech Republic, 24 countries are below the line, showing a lower youth-adult ratio in 2013 than in 2008. In Denmark, Iceland and Luxembourg, the youth-adult ratio decreased substantially by 1-2 points. The mean un-weighted youth-adult ratio across 41 countries was statistically significantly lower in 2013 (2.6) than in 2008 (2.9).

¹⁴ There is a substantial amount of cross-country variation across 41 countries, with the lowest youth-adult unemployment ratio (in both years) in Germany and the highest in Sweden. Differences in the youth-adult ratio may reflect structural differences in the way young people are integrated in the labour market across countries (Cahuc et al. 2013).

Figure 3b Youth-adult unemployment ratio in 2008 and 2013



Source: Eurostat (last update 21.07.2014); OECD.Stat Short Term Labour Market Statistics (extracted 18.07.2014).

To recap, youth unemployment went up during the Great Recession in all but five countries out of 41. It increased faster than adult unemployment in 31 countries, especially in six Southern European countries that were hit hard by the crisis (Croatia, Cyprus, Greece, Italy, Portugal and Spain), suggesting that young people there suffered disproportionately. At the same time, the ratio of youth to adult unemployment has not changed dramatically during the Great Recession: it even decreased somewhat on average.

However, the change in the youth-adult ratio does not appear to depend on exposure to the crisis.¹⁵ Although youth unemployment tends to increase faster in countries that suffered a greater fall in economic output per capita, it often does so alongside an increase in adult unemployment so that the *relative* position of young job seekers in the labour market remains fairly stable or may even appear to improve. This is the case in Greece and Spain, where the youth-adult ratio decreased somewhat because both youth and prime-age unemployment have shot up (although youth unemployment increased faster in absolute terms). In such cases, policies aimed exclusively

¹⁵ There is no significant correlation between the absolute difference in the youth-adult ratio between 2008 and 2013 and the ratio of the GDP per capita in 2013 to that in 2008.

at youth may not be most efficient on their own in times of soaring adult unemployment, when demand for labour is weak.

At the same time, there are countries like Sweden, which has not suffered a fall in the GDP per capita where, in absolute terms, the youth-adult ratio decreased the most but the youth unemployment rate was 4.85 times higher than the prime-age unemployment rate in 2013. In fact, Sweden had the highest youth-adult ratio in the comparison in both 2008 and 2013, suggesting persistent structural obstacles to labour market integration faced by the young. Active labour market policies targeting youth could be particularly useful.

Meanwhile, these results may not show the full picture because youth unemployment can be affected by young people leaving (or never entering) the labour force. For instance, they may be staying in full-time education longer or returning to education after a break. Thus, the next section documents the evolution of the NEET rate and decomposes these changes into the portions due to inactivity and unemployment as well as those due to participation in education and employment.

4.2 Trends and cross-country variation in the prevalence of youth not in education, employment or training (NEET)

Figure 4 plots the share of young people aged 15-24 not in education, employment or training in 2008 and in 2013. The NEET rate has gone up substantially since the start of the crisis in most countries. Only in Germany, Japan and Luxembourg has the NEET rate fallen by at least one point to relatively low levels of under 10%. The largest increases were in Italy (6ppt), Romania (6ppt), Croatia (9ppt), Greece (9ppt) and Cyprus (9ppt), with around one in five youth counted as NEET in 2013.

However, high NEET rates do not always reflect current disadvantage in the labour market. Although between one in five and one in four young people were not in education or employment in Chile, Mexico and (even after a substantial 11ppt fall) in Turkey in 2013, the NEET rates in these countries may be driven by large proportions of young women raising families (OECD 2013, page 330). However, this may still have longer term individual and societal costs. Investing in young women's education and employment has been shown to bear significant economic development gains (see Chaaban and Cunningham 2011). Meanwhile, Israel had the highest NEET rates in the comparison in both years (around 30%), but they are largely an artefact of mandatory military service for both men and women aged 18-20/21 counting as inactivity (in a departure from the standard LFS methodology).¹⁶ Thus, while the percentage point change in the NEET rate in Israel is a reliable measure of the trend over time, the levels of NEET are not internationally comparable.

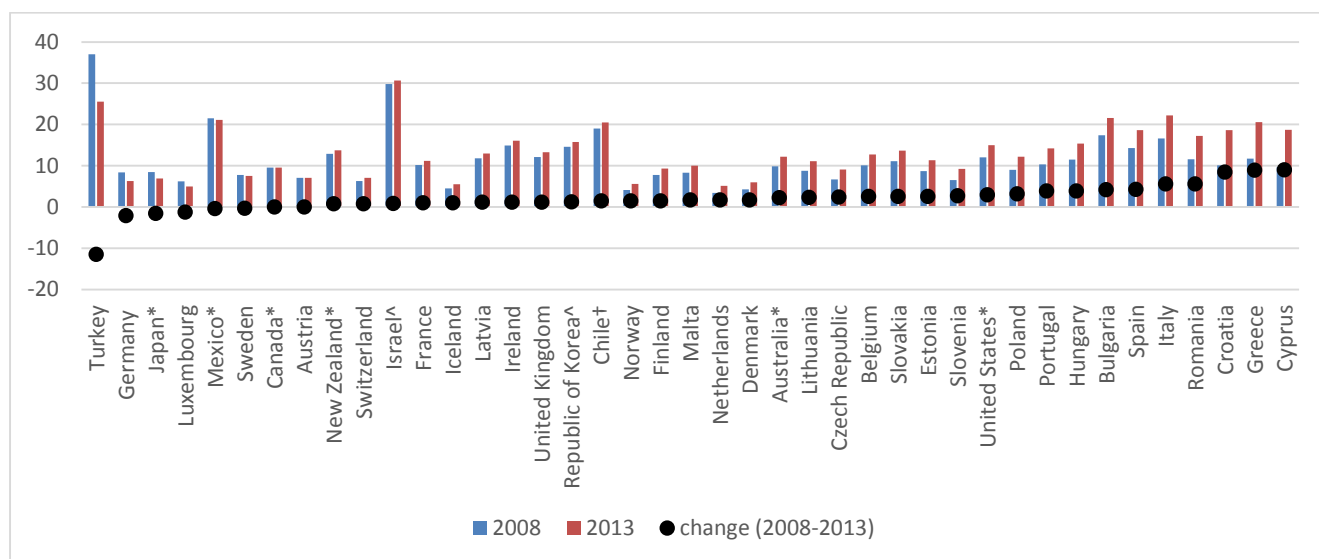
Furthermore, percentage point changes in the NEET rates may draw attention away from the absolute numbers of young people not in employment or education. Although Cyprus showed the greatest increase in the NEET rate (9ppt) among 41 countries, it translates into around 16,000 people.¹⁷ In contrast, the one point rise in the NEET rate in the United Kingdom corresponds to the net increase of 76,000. The largest net increases in the numbers of 15-24-year-old NEETs were in

¹⁶ See the country note for Israel (OECD 2013a) at http://www.oecd.org/edu/Israel_EAG2013%20Country%20Note.pdf.

¹⁷ Estimates based on population statistics from the World Bank database "Health Nutrition and Population Statistics: Population estimates and projections." <http://datatopics.worldbank.org/hnp/Population.aspx>

Italy (330,000) and the United States (over 1.3 million). To put this in context, there are approximately 800,000 more NEETs in 2013 than in 2008 across the entire European Union.

Figure 4 Change in the NEET rate (ppt) between 2008 and 2013, 15-24



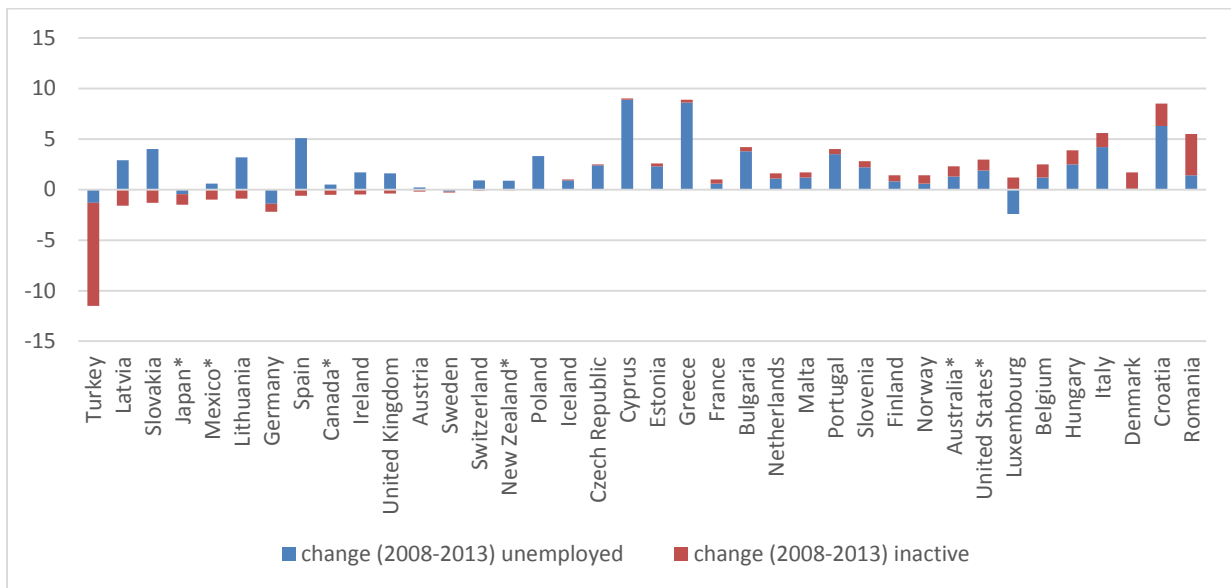
Source: Eurostat (last update 21.07.2014); *OECD Society at a Glance 2014 (Q4-2007 and Q4-2012 for Japan; March 2007 and March 2013 for Australia, Q1-2007 and Q1-2013 for Canada, Mexico, New Zealand and the United States); ^OECD Education at a Glance 2013 (2008 and 2011). †CASEN 2006 and 2011.

The NEET population is by definition heterogeneous, consisting of those who are seeking work (the unemployed) and those who are not (the inactive). The inactive sub-group give cause for concern if they are becoming discouraged and disengaged from the labour market. However, in countries where the NEET rates increased the most, the change was dominated by the rise in youth unemployment (Figure 5). The only exceptions are Romania, where the increase in the NEET rate was largely due to rising inactivity,¹⁸ and Turkey, where the large decrease in the NEET rate was accounted for by the drop in inactivity rather than in unemployment.¹⁹ On the whole, changes in the NEET rate closely trail the changes in youth unemployment across 41 countries (Figure A3), again indicating that increases in the NEET rate were largely due to increases in unemployment rather than inactivity.

¹⁸ There was a gender difference in Romania: the share of those who are inactive and not in education or training increased faster among males (from 2.5% to 7.6%) than among females (from 10.2% to 13.4%). Data from Eurostat (last update 21.07.2014).

¹⁹ There was a gender difference in Turkey: inactivity decreased more among females (from 47.2% to 32.4%) than among males (from 14.4% to 9.5%), while unemployment decreased more among males (from 8% to 5.6%) than among females (from 3.7% to 3.5%). Data from Eurostat (last update 21.07.2014).

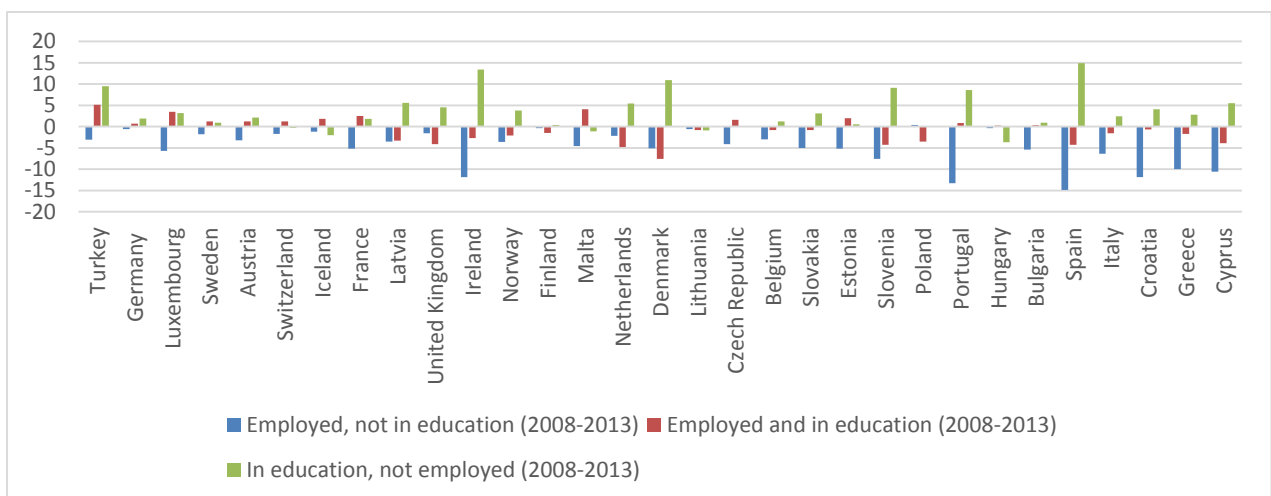
Figure 5 Change in NEET rate (ppt) between 2008 and 2013: unemployment and inactivity, 15-24



Source: Eurostat (last update 21.07.2014); *OECD Society at a Glance 2014 (Q4-2007 and Q4-2012 for Japan; March 2007 and March 2013 for Australia, Q1-2007 and Q1-2013 for Canada, Mexico, New Zealand and the United States). No data for Chile, Israel or the Republic of Korea.

A related question is what types of activity account for the flows in and out of the NEET status. Figure 6 shows that in countries where the NEET rate increased the most, this was largely due to falling participation in employment, which had not been compensated for by rising participation in education. For example, in Ireland and Spain the increase in the proportion of those in education but not in employment was roughly equal to the decrease in the share of those who were in employment, but not in education. The rise in the NEET rate was thus due to the falling population share of those who were studying and working at the same time. Meanwhile, in countries where the NEET rate has fallen, it was mainly due to rising educational participation (both on its own and in conjunction with employment). Overall, participation in education (with or without concurrent employment) increased the most in Turkey (15ppt), Ireland (11ppt), Spain (11ppt) and Portugal (9ppt).

Figure 6 Change in NEET rate (ppt) between 2008 and 2013: education and employment, 15-24



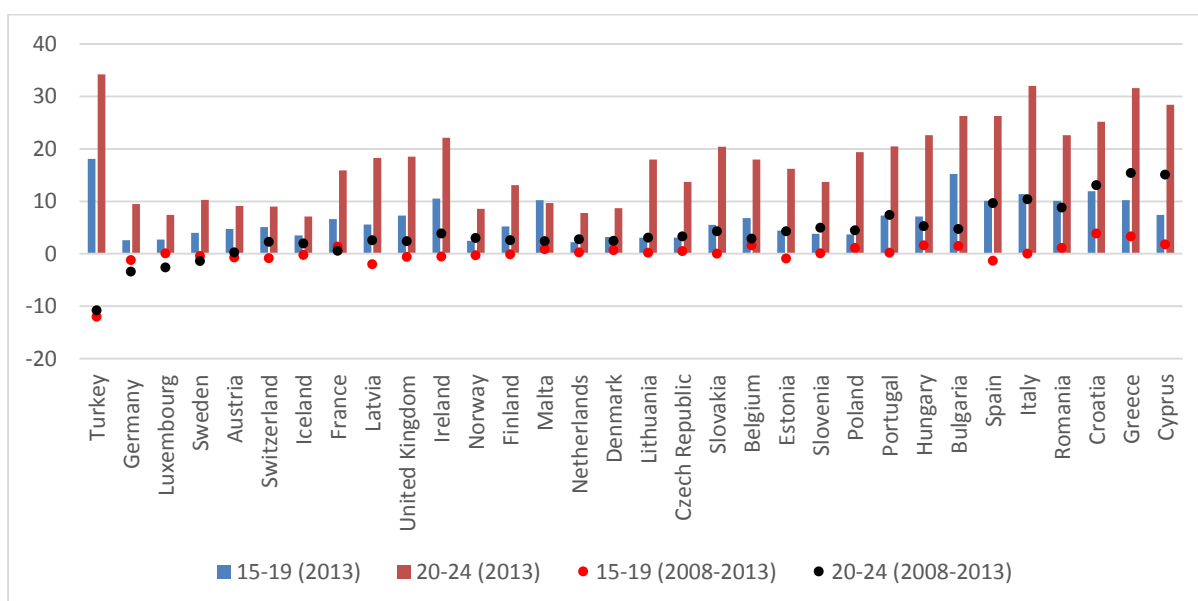
Source: Eurostat (last update 21.07.2014); No data for Australia, Canada, Chile, Israel, Japan, Mexico, New Zealand, the Republic of Korea, United States. Romania excluded due to data unreliability.

4.3 Changes in the NEET rates by age, educational attainment, and gender

Using official Eurostat statistics for 32 countries (EU-28 plus Iceland, Norway, Switzerland and Turkey), this section documents differences in changes in the NEET rate by demographic characteristics: age, educational attainment and gender.

The 15-24 age group includes young people at different stages in their lives. Unlike their older counterparts, many of those aged 15-19 may still have to be in compulsory secondary education.²⁰ Indeed, NEET rates are consistently higher among 20-24-year-olds and in nearly all countries where the NEET rate increased between 2008 and 2013, it went up faster among the older cohort (Figure 7). The only exception is France, where the NEET rate rose by 1ppt more among the younger group. Overall, the age differential was larger in countries where the increase in the NEET rate was greater ($r=0.73$, $p<0.001$). In Cyprus, where the NEET rate increased the most, it went up by 15ppt to 28% among 20-24-year-olds, while increasing by only 2ppt to 7% among their younger counterparts. This suggests that the older cohort of 20-24-year-olds suffered during the Great Recession disproportionately.

Figure 7 Change in the NEET rate (ppt) between 2008 and 2013 by age group

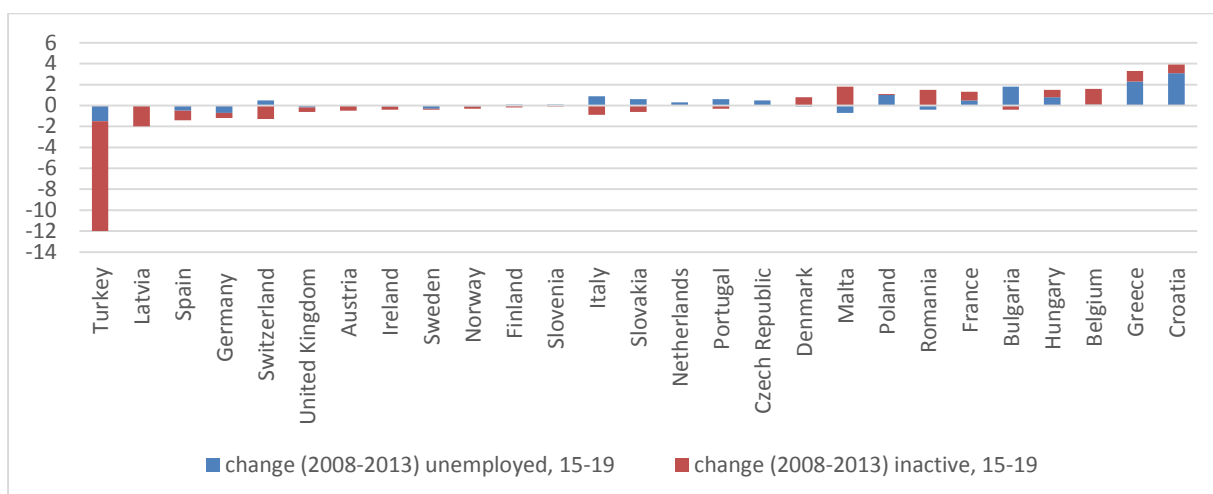


Source: Eurostat (last update 21.07.2014). Sorted by the size of the absolute change in the total NEET rate.

Changes in the NEET rate were more likely to be due to changes in inactivity among the young cohort (Figure 8a) and due to changes in unemployment among the older cohort (Figure 8b). Nevertheless, there are some notable departures from this pattern. In Bulgaria, Croatia and Greece, the countries that saw some of the largest increases in the 15-19 NEET rate, it was dominated by the rise in unemployment rather than in inactivity.

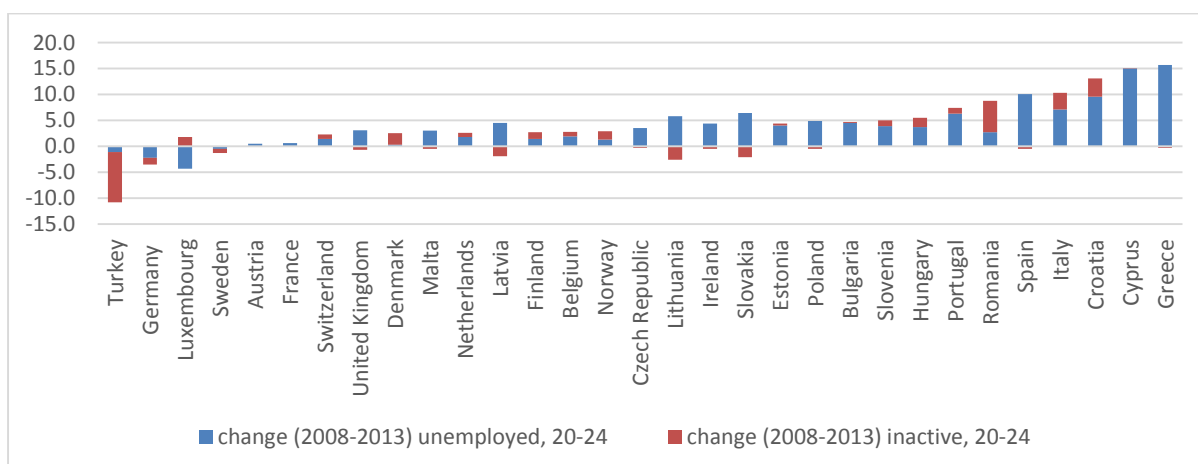
²⁰ As of 2013/2014, the age when full-time compulsory schooling ends varies from 14 in Croatia to 18 in the Netherlands and Portugal, but it is either 15 or 16 in the rest of the countries studied here (http://eacea.ec.europa.eu/education/eurydice/facts_and_figures_en.php#compulsory).

Figure 8a Change in the NEET rate (ppt) between 2008 and 2013: unemployment and inactivity, 15-19



Source: Eurostat (last update 21.07.2014); no data for Cyprus, Estonia, Lithuania, Luxembourg, and Iceland due to low reliability of estimates based on small sample sizes.

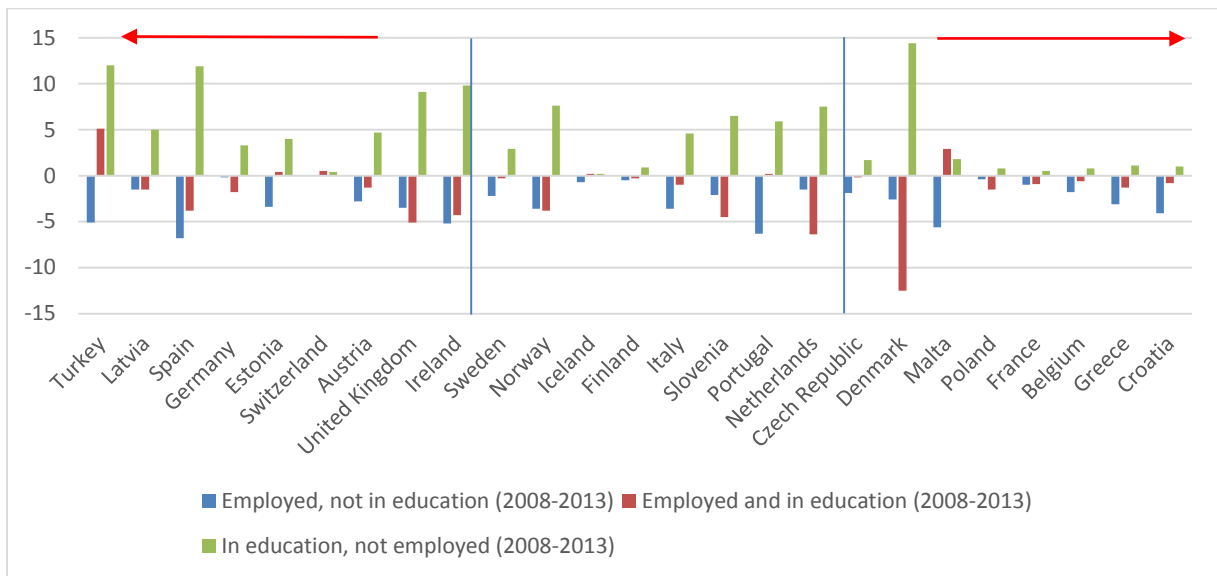
Figure 8b Change in the NEET rate (ppt) between 2008 and 2013: unemployment and inactivity, 20-24



Source: Eurostat (last update 21.07.2014); no data for Iceland due to low reliability of estimates based on small sample sizes.

There were some differences by age in the types of activity that lead to movements in and out of the NEET status. The share of 15-19-year-olds who were studying or training while not being employed has increased in every country for which data are available, with the largest absolute rises (of 10ppt or more) in Denmark, Spain and Turkey (Figure 9a). This largely accounted for the drop in the NEET rate in the countries where it has fallen (from Turkey to Ireland), but was not sufficient to compensate for the fall in employment in the countries where the NEET rate has increased (from the Czech Republic to Croatia). Meanwhile, the proportion of those who were working and studying at the same time has increased by one percentage point or more in only three countries: Malta, Switzerland, and Turkey.

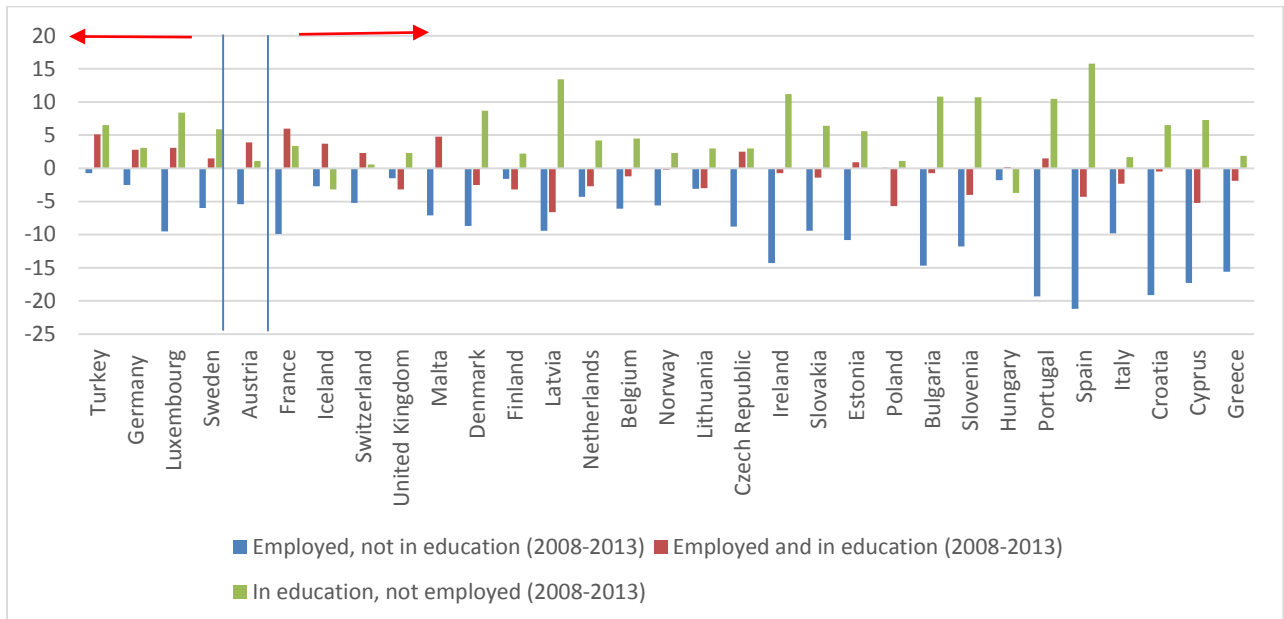
Figure 9a Change in the NEET rate (ppt) between 2008 and 2013: education/training and employment, 15-19



Source: Eurostat (last update 21.07.2014); no data for Bulgaria, Cyprus, Lithuania, Luxembourg, Slovakia due to low reliability of estimates based on small sample sizes. Romania excluded due to data unreliability. Sorted by the absolute change in the 15-19 NEET rate. The arrows indicate the countries where the 15-19 NEET rate fell (←) or increased (→) by one percentage point or more.

The share of 20-24-year-olds who were studying or training while not being employed has increased everywhere except Hungary, Iceland and Malta, with the largest absolute rise (of 10ppt or more) in Portugal, Slovenia, Bulgaria, Ireland, Latvia and Spain (Figure 9b). Unlike in the younger cohort, where the proportion of those studying and working at the same time decreased nearly everywhere without a clear pattern, here it was more likely to increase in the countries where the 20-24 NEET rate has fallen or increased modestly, while it was more likely to fall in the countries that saw larger increases in the NEET rate. This demonstrates the importance of employment for the older cohort.

Figure 9b Change in the NEET rate (ppt) between 2008 and 2013: education/training and employment, 20-24



Source: Eurostat (last update 21.07.2014); Romania excluded due to data unreliability. Sorted by the absolute change in the 20-24 NEET rate. The arrows indicate the countries where the 20-24 NEET rate fell (←) or increased (→) by one percentage point or more.

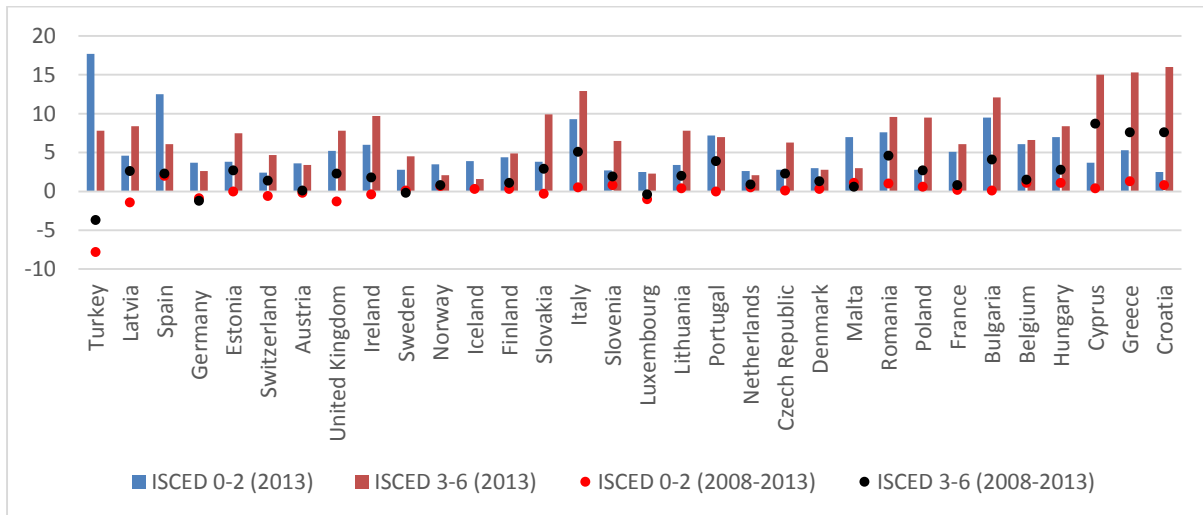
Overall, there is evidence that the older cohort faced substantially greater difficulties in their school-to-work transition during the Great Recession. The NEET rate increased faster or decreased more slowly in absolute terms among 20-24-year-olds in every country except France, Germany and Luxembourg. In the three countries where the 15-24 NEET rate increased the most, i.e. Croatia, Cyprus and Greece, between 25% and 32% of 20-24-year-olds were NEET in 2013, compared with 7%-12% of 15-19-year-olds.

Notably, there was not a single country in the comparison where the proportion of young people in either cohort who were employed while not being in education or training increased between 2008 and 2013. Even in the countries where the NEET rate decreased, this was due to rising participation in education or training. However, among those who were not in education or training, changes in inactivity played a more important role in determining the NEET rate for the younger cohort, while changes in unemployment dominated the change in the NEET rate for the older cohort. Although large proportions of 20-24-year-olds went back to education or training during the Great Recession, this was not enough to compensate for the decrease in employment.

Figure 10 shows the change in the NEET rate for the 15-24 cohort separately by educational attainment. Although lower educated youth faced multiple barriers to work even before the crisis (Scarpetta et al. 2010), NEET rates increased faster or fell more slowly among 15-24-year-olds with an upper secondary qualification or higher (ISCED 3-6) compared with those with lower secondary education or below (ISCED 0-2). The biggest differentials by educational attainment between the higher and the lower educated were observed in Croatia, Cyprus and Greece, the countries where the overall NEET rate has increased the most. Overall, there is a correlation of 0.48 ($p < 0.01$) between the education differential and the absolute increase in the overall NEET rate. However, the correlation rises to 0.82 ($p < 0.001$) if Turkey is excluded. In Turkey, where the NEET rate fell the most, it has decreased to a lesser extent among those with upper secondary qualifications or

higher. Unsurprisingly, since those with higher qualifications tend to be in the older age group, greater differentials by educational attainment were in countries with larger differences by age, with a correlation of 0.73 ($p < 0.001$) between the two. These results suggest that young people who have already completed their compulsory secondary education struggle to make a timely transition to further or higher education or into work. Nevertheless, even relatively low rates of NEET among those without upper secondary qualifications are potentially worrying, as they identify a particularly disadvantaged sub-group of young people.

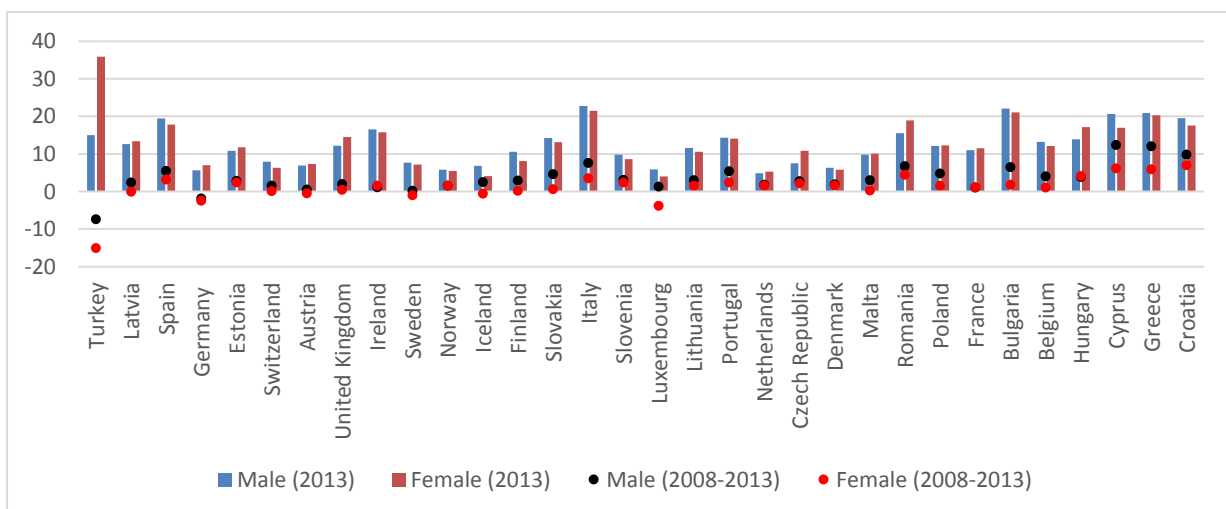
Figure 10 Change in the NEET rate (ppt) between 2008 and 2013 by educational attainment



Source: Eurostat (last update 21.07.2014). Sorted by the size of the absolute change in the total NEET rate.

Although differences by gender are less stark, NEET rates often went up faster or fell more slowly for males (Figure 11a). Nonetheless, male and female NEET rates remain within 4ppt of each other. The only exception is Turkey, where in spite of the NEET rate decreasing more slowly among men, more than one-third (36%) of 15-24-year-old women were still NEET in 2013, compared with 15% of men. This sizeable gender differential is a cause for concern.

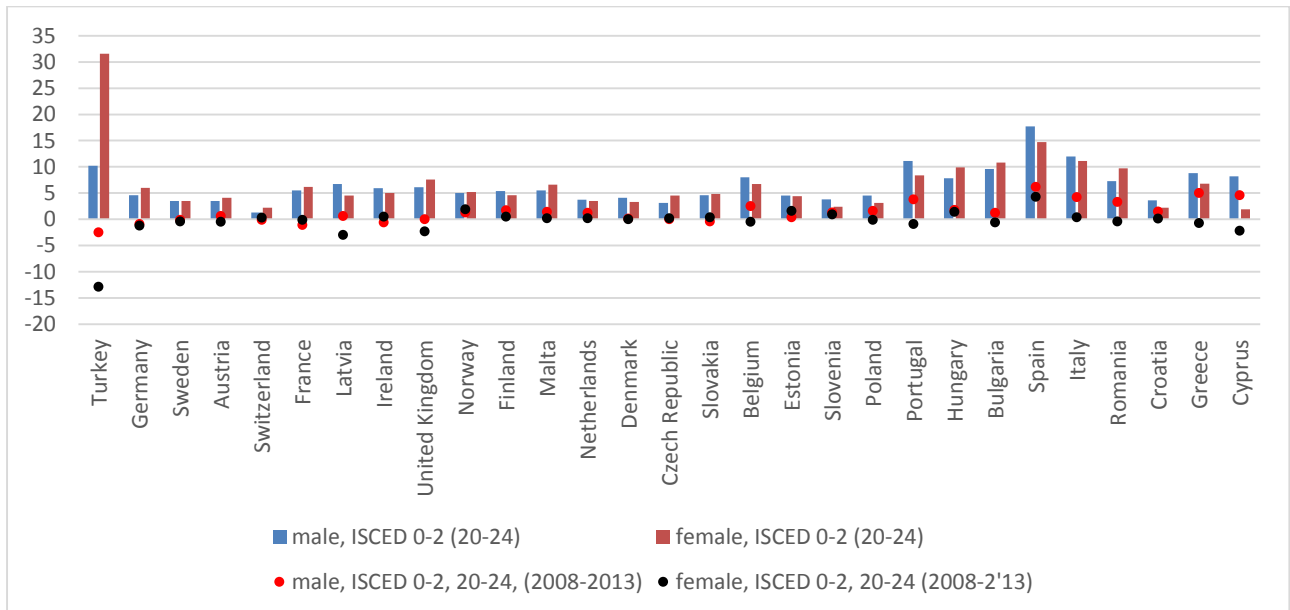
Figure 11a Change in the NEET rate (ppt) between 2008 and 2013 by gender



Source: Eurostat (last update 21.07.2014). Sorted by the size of the absolute change in the total NEET rate.

Figure 11b shows the differential by gender among those who are potentially at the highest risk of disadvantage: 20-24-year-olds without upper secondary qualifications. In 19 countries out of 31 for which data are available, men were at a disadvantage as the male NEET rates increased faster or fell more slowly (by at least 1ppt). A female disadvantage was observed in only three countries: Estonia, France and Ireland. Overall, Italy and Spain stand out as the countries where sizeable proportions of 20-24-year-old men and women without any upper secondary qualifications are not in education, employment or training.

Figure 11b Change in the NEET rate (ppt) between 2008 and 2013 by gender, ISCED 0-2 and aged 20-24

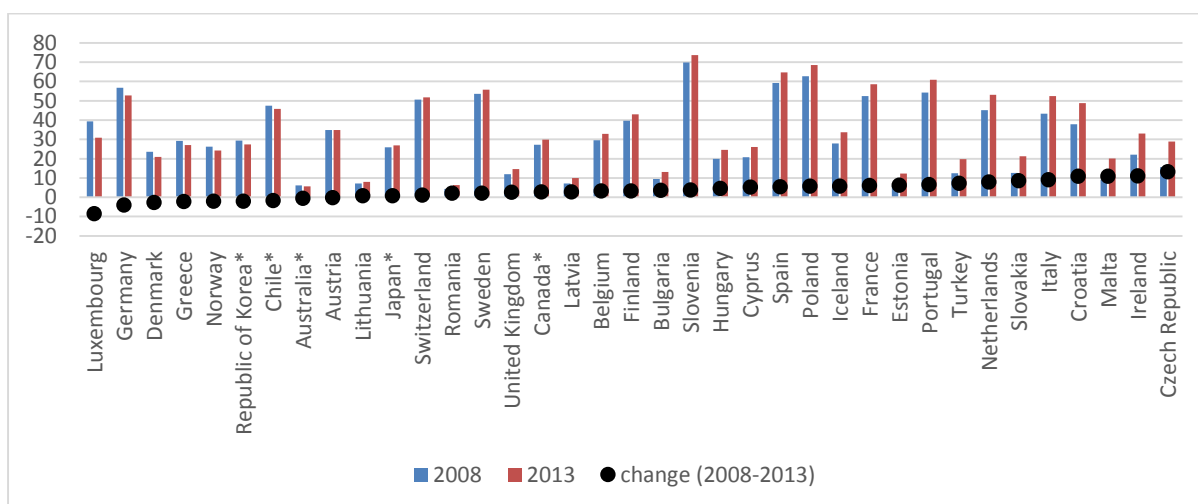


Source: Eurostat (last update 21.07.2014). Sorted by the size of the absolute change in the total NEET rate. No data for Lithuania due to insufficient case numbers.

4.4 Trends and cross-country variation in the share of temporary youth employment

This section investigates whether the share of temporary youth employment has changed across rich countries during the Great Recession. The share of employees aged 15-24 who had temporary contracts increased by one point or more in 26 out of 37 rich countries for which data are available (Figure 12). The greatest increases were in Croatia (11ppt), Ireland (11ppt), Malta (11ppt) and the Czech Republic (13ppt). Temporary employment has fallen in seven countries, with the most dramatic declines in Luxembourg (-8ppt) and Germany (-4ppt). With at least three out of five young employees in temporary work, the highest share of temporary employment in 2013 was in Portugal (61%), Spain (65%), Poland (69%) and Slovenia (74%). In contrast, Australia (6%) had the lowest incidence of temporary employment. There was no systematic relationship between the share of temporary employment in 2008 and the change between 2008 and 2013, suggesting that temporary work did not necessarily increase the most where it had already been widespread.

Figure 12 Temporary employment (15-24) 2008 and 2013



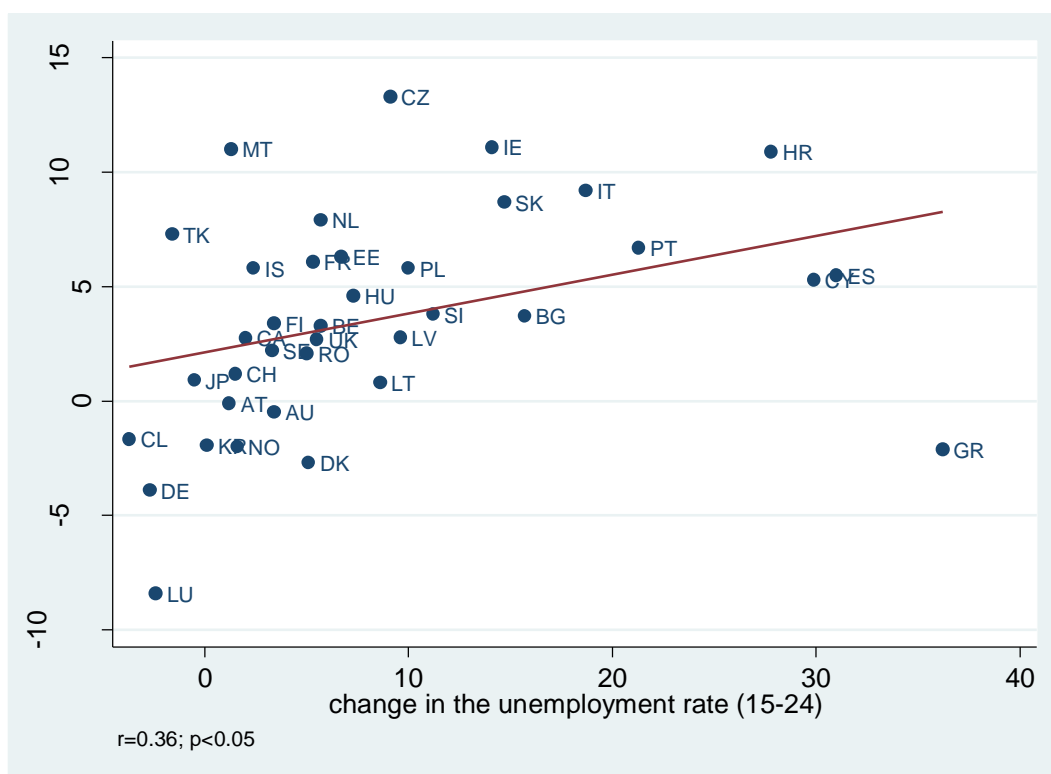
Source: Eurostat (last update 21.07.2014); *OECD.Stat Incidence of Permanent Employment (extracted 14.08.2014). Latest data is 2012 for Australia and Japan. No data for Israel, Mexico, New Zealand and the United States.

By and large, temporary employment remained prevalent in countries where it had been widespread at the start of the Great Recession. In relative terms, the biggest changes were in Estonia, Czech Republic and Malta, where the share of temporary work doubled from a relatively small base. There was more variation between countries than “within” countries over this period.²¹ The degree of cross-country variation in the share of temporary youth employment has not changed between 2008 and 2013 (see Table A1).

On the whole, changes in temporary youth employment were related to changes in youth unemployment, suggesting that young people were facing a choice between unemployment and precarious work (Figure 13). However, this relationship does not hold equally well for all countries: Croatia, Cyprus, Greece, Italy, Portugal and Spain, which saw the largest increases in youth unemployment, do not fit in this linear pattern. In fact, the share of temporary employment has fallen in Greece, suggesting that even insecure work was getting out of reach as unemployment was skyrocketing. However, to investigate further the relationship between temporary employment and youth unemployment, longer running time series would be required.

²¹ Pooling country-level data for 2008 and 2013 shows that the standard deviation of temporary youth employment “between” countries was 18.5 percentage points, while the standard deviation “within” countries amounted to 3 points.

Figure 13 Temporary employment (15-24) and youth unemployment, 2008 and 2013



Sources: see Figure 1 and Figure 8.

Meanwhile, there was no significant association between the absolute change in temporary youth employment, or the level of temporary employment in 2013, and the ratio of the GDP per capita in 2013 to that in 2008. However, using a more qualitative definition of exposure to the crisis, Natali et al (2014) document a greater average increase in temporary youth employment, in aggregate terms, for the group of EU countries that were most affected by the crisis than for the rest.²² Moreover, they find greater increases in the rates of long-term youth unemployment and the share of involuntary part-time employees in these countries.

5. CONCLUSION

This paper documented increases in unemployment, the NEET rate and temporary employment among 15-24-year-olds during the Great Recession in the majority of the 41 EU and/or OECD countries. While high levels of youth unemployment suggest that many young job seekers are not finding work, high NEET rates suggest a halted transition from school to work and a greater involvement of youth in the “informal” economy. To the extent that these young people will struggle to integrate in the labour market, there will be higher longer term individual and societal costs (OECD 2013a). Experiencing unemployment at a young age has scarring effects on future employability and wages as well as on subjective well-being and health (Bell and Blanchflower 2011). Moreover, young people out of education or training have fewer resources to establish their

²² Countries that were hit by the global financial crisis and were supported by the “Troika” (International Monetary Fund/EU/European Central Bank) or countries in the Eurozone that were facing particularly high government borrowing costs (indicated by higher Credit Default Swap rates): Croatia, Cyprus, Estonia, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Portugal, and Spain.

own households and engage in social life. Indeed, in most European countries, more 18-29-year-olds were living in their parental homes in 2011 than in 2007 (Eurofund 2014).

Although youth unemployment increased in most of the EU and/or OECD countries between 2008 and 2013, the sharpest increases were in Croatia, Cyprus, Greece, Italy, Portugal and Spain, with at least one in three young people unemployed in 2013. The shares of young people not in employment, education or training (NEET) also rose in nearly every country, especially among 20-24-year-olds. The greatest increases were in Croatia, Cyprus and Greece. However, percentage point changes can mask increases in absolute numbers of young people as well as the levels of NEET. Thus, the largest net increases in the numbers of 15-24-year-old NEETs were in Italy (330,000) and the United States (over 1.3 million). Even after the greatest absolute decline in the NEET rate across 41 countries, Turkey still had one of the highest levels of NEET in 2013, with 36% of young women and 15% of young men neither studying nor working.

While youth unemployment has gone up in the vast majority of the 41 countries analysed, increases in the share of inactive, rather than unemployed, 15-24-year-olds who were out of school were modest by comparison. It rose by between one and four points in nine countries, decreased by at least one point in five and remained unchanged in 24 out of 38 countries for which data are available. Thus, although the proportion of youths who were not employed but looking for work has increased in most countries during the Great Recession, the population share of those who are, arguably, at the greatest risk of being discouraged and disaffected due to labour market inactivity and non-participation in education has remained relatively stable. Nevertheless, this share remains alarmingly high (over 10%) in Bulgaria, Italy, Mexico, and Turkey.

Both youth unemployment and the NEET rates increased to a greater extent in countries that were more exposed to the crisis. However, the association with the ratio of the real GDP per capita in 2013 to that in 2008 is weaker for the NEET rate than for youth unemployment, with the correlation of -0.54 as opposed to -0.66, respectively, both significant at $p < 0.001$. This is not surprising, since young people who are out of work may be in education or training. Indeed, the share of young people in education increased in most countries, but was often not sufficient to compensate for the concurrent fall in the share of employed 15-24-year-olds. Across the EU, there was not a single country where the share of youth who were employed without concurrent participation in education or training increased between 2008 and 2013.

Although there was a rise in temporary youth employment, it remained prevalent largely in the same countries where it had been widespread at the start of the Great Recession. This suggests that there were no systematic changes in the structure of youth employment during this period. Moreover, there is evidence of a non-linear relationship between the change in temporary employment and the unemployment rate among 15-24-year-olds across rich countries. Changes in youth unemployment are positively associated with changes in temporary employment when increases in youth unemployment are modest, indicating that many job seekers are facing a choice between unemployment and temporary work. However, where youth unemployment increased the most (Croatia, Cyprus, Greece, Italy, Portugal and Spain) temporary employment did not rise as much or even decreased, indicating that even insecure work was becoming scarce.

Although youth unemployment tended to increase faster than prime-age unemployment, there is not enough evidence to suggest that the *relative* situation of young people has worsened substantially across all countries. The ratio of youth to adult unemployment remained stable, suggesting that the structural barriers young people are facing in the labour market have not changed. If anything, the mean un-weighted youth-adult unemployment ratio across 41 countries was statistically significantly lower in 2013 than in 2008. However, this is due, at least in part, to the fact that changes in youth unemployment closely trailed changes in prime-age (25-54) unemployment, with a very high correlation of 0.94 ($p < 0.001$). In countries like Greece and Spain, where both youth and prime-age unemployment have skyrocketed (although youth unemployment increased faster in absolute terms), the relative situation of 15-24-year-olds appeared to improve.

Thus, although youth unemployment tends to increase faster in countries that suffered a greater fall in economic output per capita, it often does so alongside an increase in adult unemployment. This implies that policies designed to equip young people with the skills and resources needed to compete in the labour market will only achieve the expected returns in conditions where suitable jobs are available. Thus, both the skills (i.e. the supply side) and the jobs (i.e. the demand side) have to be available to maximise youth activity. However, when the demand for labour is weak and jobs are scarce (i.e. the present situation in many of the EU and/or OECD countries), a combination of active labour market policies and minimum income guarantees may be necessary to ensure that skills do not depreciate and young people will be ready to take advantage of the eventual upturn in economic conditions. Meanwhile, although governments may be tempted to encourage older workers to leave the labour market in order to create space for younger people, this would be misguided as evidence from the OECD (2013b) suggests that younger and older workers are not substitutes in the labour market.

To recap, drawing on most recent official statistics this paper demonstrated that the situation of young people in the labour market has worsened substantially during the Great Recession across the EU and/or OECD, particularly in countries that suffered greater falls in economic output per capita. Although the share of youth to prime-age unemployment has not gone up, youth unemployment increased much faster than prime-age unemployment, especially in countries that were more exposed to the economic crisis. This suggests that young people have suffered disproportionately. However, there are two reasons for (qualified) optimism. First, there is evidence that young people are returning to education or staying in education longer, which should enhance their skills and qualifications. Second, the share of young people who are inactive and not in education or training has remained stable.

The analysis in this paper needs to be taken forward in a number of ways. Further work will analyse the variation in the risks of unemployment and NEET status during the Great Recession by individual and household characteristics in a multivariate perspective using micro data from the Labour Force Surveys. In countries like Chile, Mexico and Turkey, gender differences in educational and labour market participation call for further analysis. Future research should also investigate why some countries were more successful than others in containing the rise in youth unemployment and the NEET rate given similar levels of exposure to the crisis as well as how youth labour market outcomes are related to poverty outcomes. The latter line of inquiry is particularly relevant in light of recent policy developments across a number of countries that restrict benefit

eligibility by age, thus reducing social protection for the young. For example, the Australian government announced in their 2014 budget that from January 1, 2015 those under 30 would face a waiting period of up to six months before receiving unemployment benefits.²³

²³ <http://www.dss.gov.au/about-the-department/publications-articles/corporate-publications/budget-and-additional-estimates-statements/2014-15-budget/budget-fact-sheet-working-age-payments>.

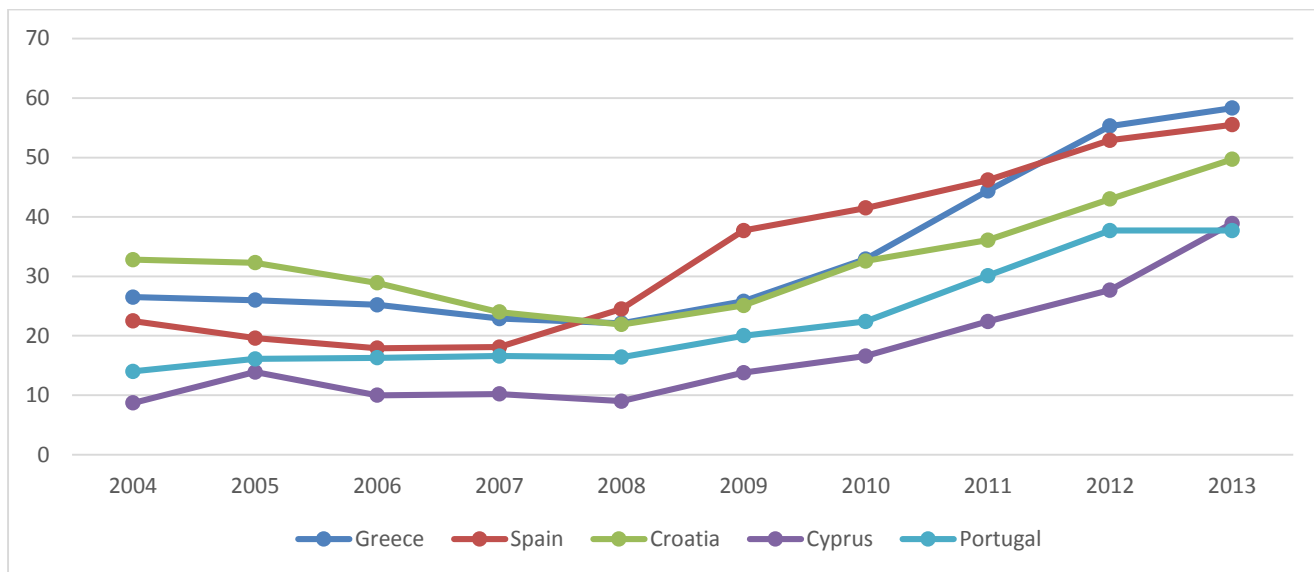
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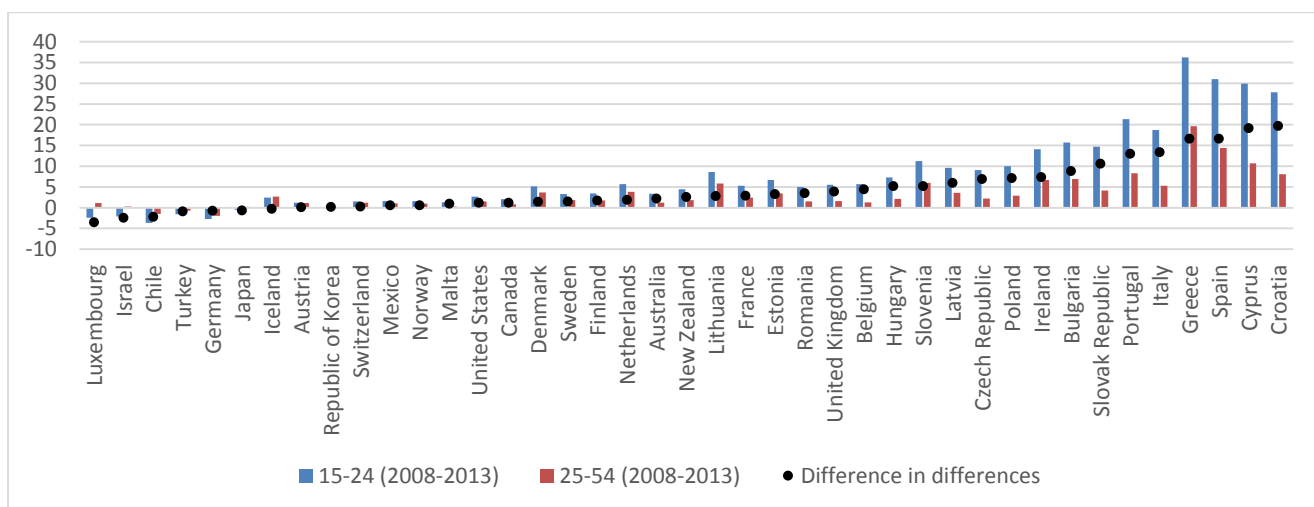
ANNEX

Figure A1 Trends in youth unemployment rate (15-24) between 2004 and 2013, by country



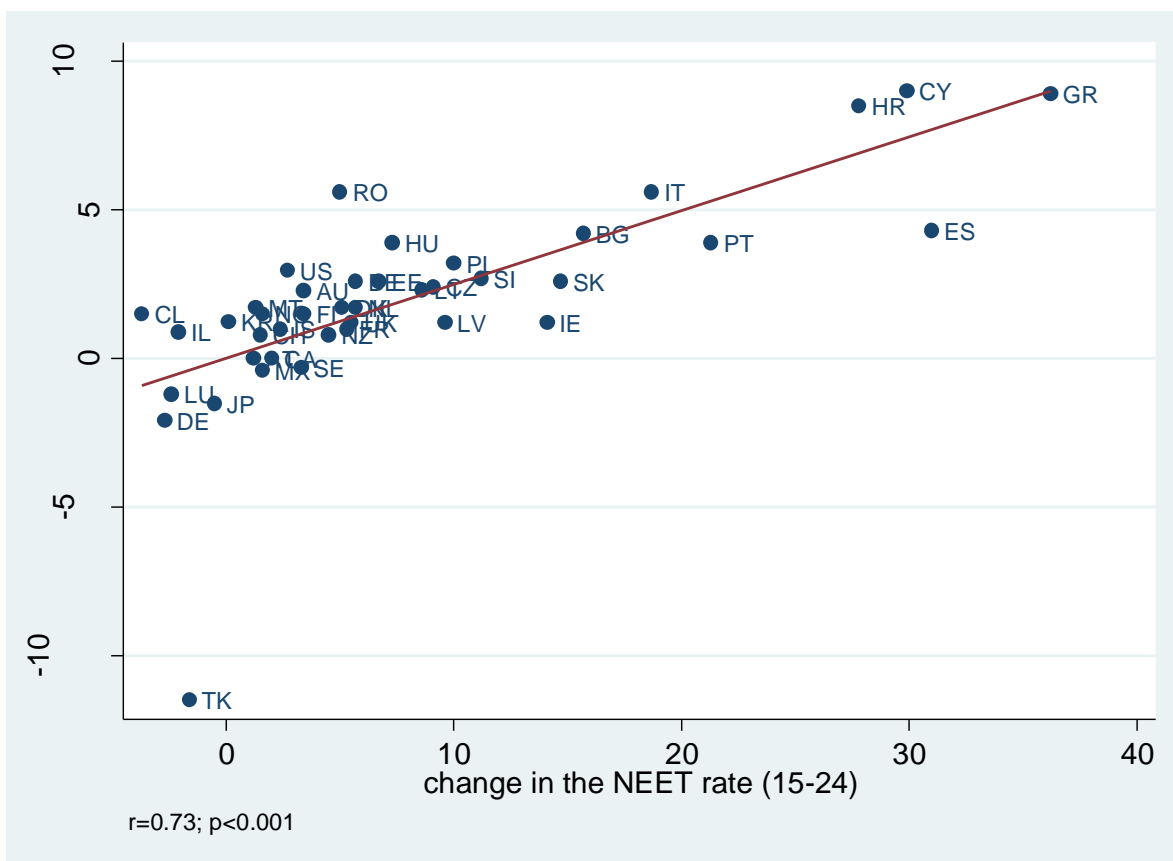
Source: Eurostat (last update 21.07.2014).

Figure A2 Change in youth unemployment (15-24) and adult unemployment (25-54) between 2008 and 2013



Source: Eurostat (last update 21.07.2014); OECD.Stat Short Term Labour Market Statistics (extracted 18.07.2014).

Figure A3 Changes in the 15-24 NEET rate (ppt) and youth unemployment (ppt) between 2008 and 2013



Sources: see Figure 1 and Figure 4.

Table A1 Country-level summary statistics

	Mean	Standard Deviation	Min	Max	N
Youth unemployment (15-24), 2008	13.8	5.1	5.3	24.5	41
Youth unemployment (15-24), 2013	21.6	12.8	6.8	58.3	41
Adult unemployment (25-54), 2008	5.0	2.0	1.9	10.1	41
Adult unemployment (25-54), 2013	8.4	5.2	2.9	26.8	41
Youth-adult ratio, 2008	2.9	0.7	1.51	4.7	41
Youth-adult ratio, 2013	2.6	0.6	1.58	3.85	41
NEET rate (15-24), 2008	11.4	6.5	3.4	37.0	41
NEET rate (15-24), 2013	13.3	6.1	5.0	30.7	41
Temporary employment share (15-24), 2008	30.6	18.6	4.3	69.8	37
Temporary employment share (15-24), 2013	34.1	18.7	5.71	73.6	37