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Youth Unemployment in the EU

SPECIALS

SPOTLIGHT

TRENDS

Youth Unemployment in the EU

Virginia Hernanz and Juan F. Jimeno

Youth Unemployment in Europe: Recent Developments and Old Problems

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INTRODUCTION

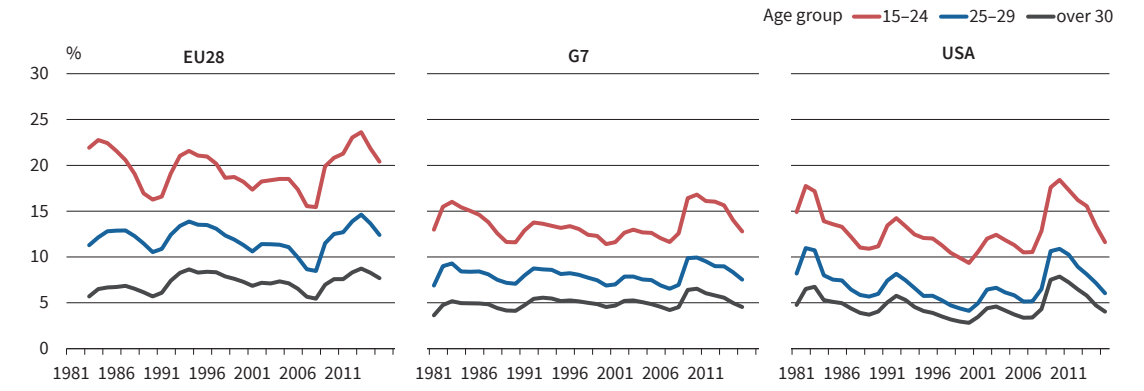
High and persistent unemployment has been a recurrent phenomenon in Europe since the early 1980s. Nowadays, despite some economic recovery from the Great Recession and the European debt crisis, it remains at levels well above those registered in the mid-2000s. Moreover, there are two new developments with potentially adverse consequences. One is the increasing divergence of unemployment rates across European countries (see Boeri and Jimeno 2016); the other is the higher likelihood of unemployment among youths, despite their declining weights in the population and in the labour force due to demographic trends. In fact, it is the concentration of unemployment among the younger population groups in some countries that explains a good deal of the increasing unemployment divergence in the EU.

Figure 1 displays the unemployment rates of three population groups, aged 15–24, 25–29 and over 30 years in the EU28, United States and G7 countries during the period 1981–2015. Over this period, the unemployment rate of the youngest (15–24) has been on average around 6 percentage points (pp) higher in the EU28 than in the United States or the G7 countries, while for the other young group (25–29) this difference was around 4–5 pp. Table 1 summarises these unemployment differences by displaying differences and ratios of unemployment rates of young and older people during the period 1981–2015, and distinguishing the years before and after the Great Recession.

As can be seen, for the whole EU, United States and G7 countries, there are no remarkable changes in these gaps and ratios. The fact that youth unemployment rates are always higher than the ones for the adult population and that they are more volatile during business cycle fluctuations has not apparently changed despite the continuous declining trends in the weights of young population groups in both total population and in the labour force (see Figures 2 and 3).

These observations raise three questions: (1) why is youth unemployment significantly higher and more volatile than adult unemployment?; (2) why is it that youth unemployment varies so much between Europe and the United States (and also across European countries, as shown below), both in absolute levels and in relative terms to adult unemployment rates?; and (3)

Figure 1
Unemployment Rate
1981–2015



Source: OECD.

Table 1

Unemployment Rates: Gaps and Ratios

	EU28			USA			G7		
	1981–2015	1981–2006	2007–2015	1981–2015	1981–2006	2007–2015	1981–2015	1981–2006	2007–2015
1524-over30	12.4	12.3	12.9	8.3	8.0	9.1	8.6	8.3	9.3
2529-over30	4.8	4.9	4.7	2.3	2.2	2.5	3.1	3.0	3.1
1524/over30	2.75	2.75	2.75	2.82	2.87	2.68	2.72	2.72	2.73
2529/over30	1.68	1.70	1.63	1.48	1.50	1.45	1.61	1.63	1.58

Note: '1524' = age group between 15 and 24 year old; '2529' = age group between 25 and 29 year old 'over30' = age group over 30 year old.

Source: OECD.

to what extent do demographic trends affect the relative labour market performance of different population groups?

This article documents recent developments in youth unemployment in European countries, and surveys recent papers on the likely determinants of youth unemployment. First, we demonstrate the evolution of youth unemployment during the period 1981–2015 in most European countries, and survey recent literature that document the relationships between youth unemployment and labour market institutions (minimum wages, dual EPL, coverage of collective bargaining, transition from school to work) and education policies affecting the transition from school to work. Secondly, we consider how demographic trends are shaping, if anything, the incidence of youth unemployment relative to other population groups.

YOUTH UNEMPLOYMENT IN EUROPEAN COUNTRIES: SOME FACTS

When analysing youth unemployment across European countries during the most recent decade, there are two main issues worth highlighting. One is that the Great Recession and the European debt crisis have had a significantly higher impact on youth unemployment rates. Figure 4 displays on the horizontal axis, the average difference between the unemployment rate of the young population groups (15–24 and 25–29) and the unemployment rate of the population over 30 years of age during the period 1981–2006.[1] On the vertical axis of Figure 4, there is a change in this gap between the period 2007–2015 and 1981–2006. There is wide heterogeneity in both variables, but in most countries the gap widened during the recent period. Table 1 provides the average youth unemployment gap and ratio for the EU28, United States and G7 countries during the period 1981–2015. It shows that during the most recent period (2007–2015), the unemployment gap of youth aged 16–24 with respect to the population over 30 years of age increased. As for the ratios, they remained more or less constant, as the average unemployment rate of the adults also increased significantly during this period.

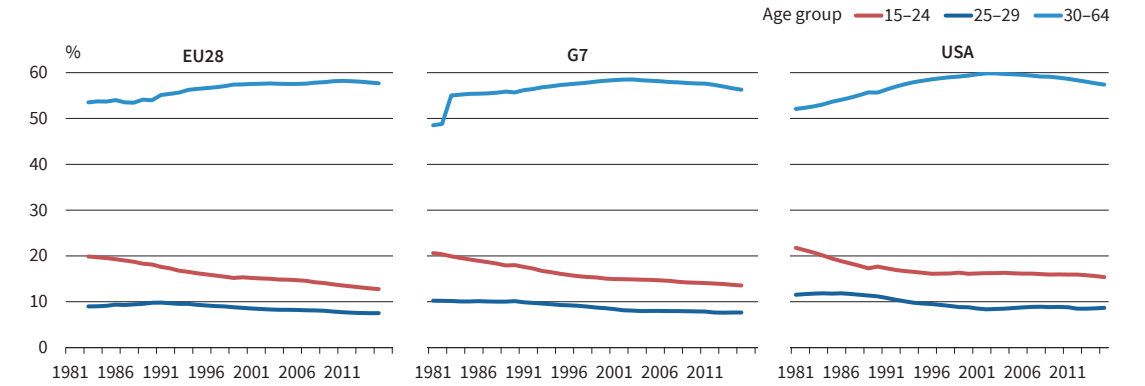
The second issue worth highlighting is the increasing concentration of youth unemployment in a set of countries. Boeri and Jimeno (2016) show that a main driver of European cross-country unemployment divergence during the most recent period is youth unemployment, that both the youth and the overall unemployment rates have a marked national dimension, rather than regional, and that the rise of unemployment and its increasing dispersion across socio-demographic groups are two interrelated phenomena, as shown by the positive correlation, both across countries and over time, of the standard deviation of the unemployment rate (defined over gender and 5-years age groups) and

[1] Not all the countries have data for the whole period 1981-2015. See Data Appendix below for sample periods across countries.

Figure 2

Population Weight

1981–2015

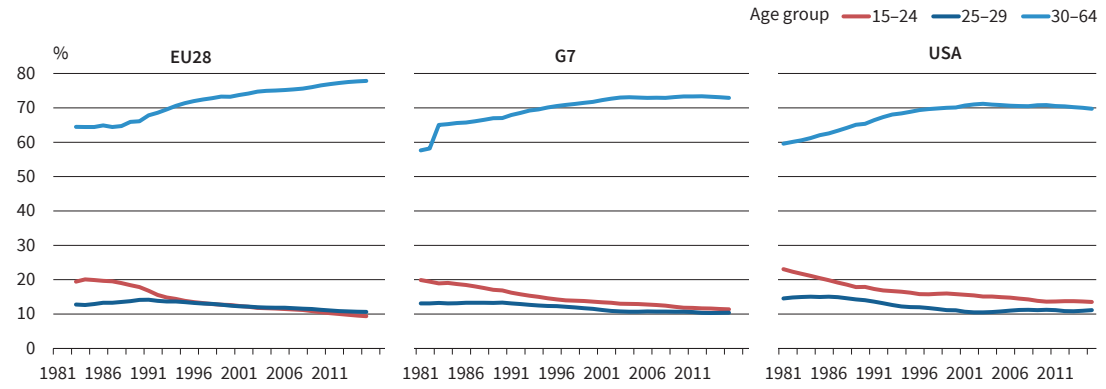


Source: OECD.

Figure 3

Labour Force Weight

1981–2015



Source: OECD.

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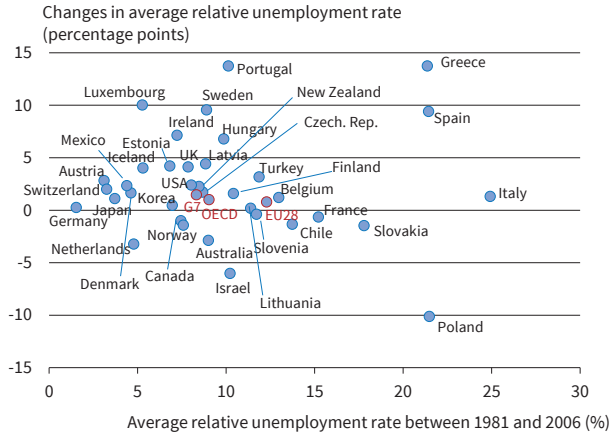
Figure 4

Average Relative Unemployment Rate 1981–2006 and Change between 2007–2015 and 1981–2006, 15–24 years of age



Note: The relative unemployment rate is the difference between the unemployment rate of each group and that of the population over 30 years of age.

Source: OECD.

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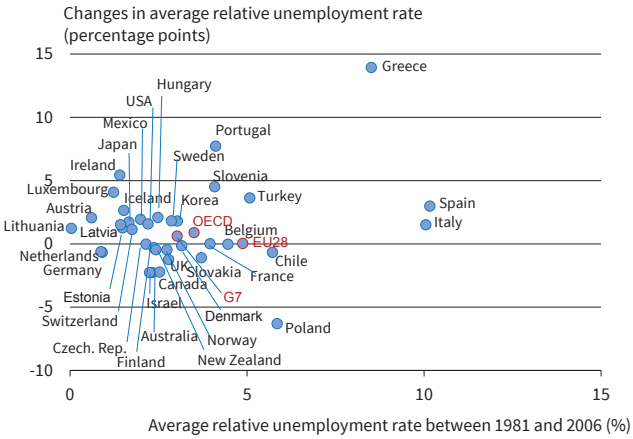
Average Relative Unemployment Rate 1981–2006 and Change between 2007–2015 and 1981–2006, 25–29 years of age



Note: The relative unemployment rate is the difference between the unemployment rate of each group and that of the population over 30 years of age.

Source: OECD.

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the aggregate unemployment rate.[2]

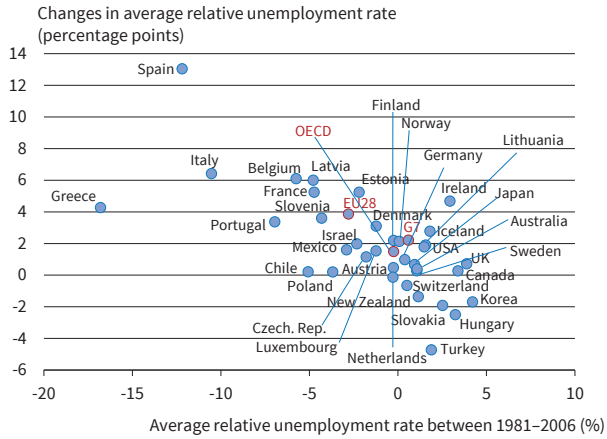
Finally, it is also worth noting that the gender gap in youth unemployment has significantly fallen, as the impact of the recent rise of unemployment was higher among males. Figure 5 shows that, for both youth aged 16–24 and those aged 25–29, the difference between the male and the female unemployment rate decreased by most in those countries where these gaps were higher (typically, Southern European countries).

In a nutshell, these facts suggest that the rise of youth unemployment since the start of the Great Recession was not atypical since in all countries during recessions it tends to increase in parallel with the unemployment rate of adult workers. There are however several new features that should be kept in mind. One is that in this period the youth unemployment gap (as measured by the absolute difference between the unemployment rates of youth aged 16–24 and 25–29 with respect to that of the population over 30 years of age) widened in most countries, and especially in Southern European countries. Another is that this

[2] The time series correlation between both variables is stronger in Eastern and Southern Europe, where unemployment differences across groups are also higher. The cross-country correlation has significantly increased since 2007.

Figure 5

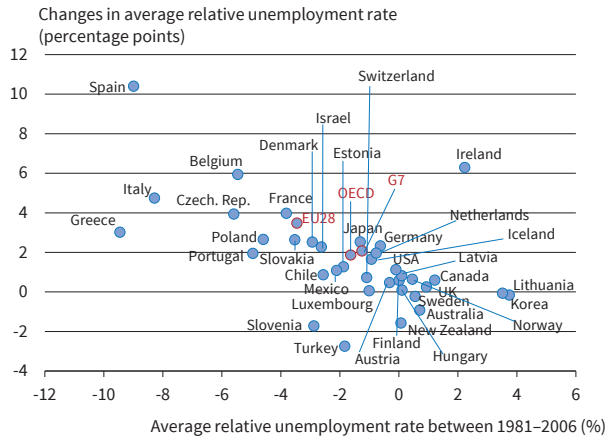
Gender Gaps: Average Relative Unemployment Rate 1981–2006 and Change between 2007–2015 and 1981–2006, 15–24 years of age



Note: The relative unemployment rate is the difference between the unemployment rate of men and women for each population group.

Source: OECD. © ifo Institute

Gender Gaps: Average Relative Unemployment Rate 1981–2006 and Change between 2007–2015 and 1981–2006, 25–29 years of age



Note: The relative unemployment rate is the difference between the unemployment rate of men and women for each population group.

Source: OECD. © ifo Institute

increase took place at a time in which the gender gap in youth unemployment was decreasing. Overall, despite the normal increase of youth unemployment during recessions, there seem to be new trends regarding how unemployment is distributed across population groups.

THE DETERMINANTS OF YOUTH UNEMPLOYMENT

An Overview of the Theory

Theoretically, there are three reasons why youth unemployment is bound to be higher than adult unemployment. First, young workers are more exposed to frictional unemployment. At the beginning of the working life, as people are searching for a wider variety of jobs and these tend to be more unstable, the rates at which they change jobs are significantly higher, and, hence, the likelihood of unemployment due to job transitions is also higher. A second reason is that young people are also transiting from school to work and the search for a first significant job may entail some time. Finally, there is the pathological component of youth unemployment due to the different impact of labour market institutions and policies (minimum wages, employment protection legislation, etc.) among population groups of different characteristics.

The fact that young people are overrepresented in unemployment is a standard prediction of the standard search and matching model. When entering into the labour force and workers are for the first time searching for good matches, labour market frictions (incomplete and asymmetric information, search costs, etc.) imply a lower transition into employment and higher job destruction, so that turnover is especially large among youngsters. Since during a recession there is a freeze in hires and a rise of separations, it is very likely that the rise of unemployment among the young population is larger than that for prime-age workers. In countries with dual Employment Protection Legislation (EPL, henceforth), i.e. with regular employment contracts providing sufficient job protection to insiders and temporary contracts less costly to cut for new entrants into jobs, as happens in Southern European countries, the differential rise in youth unemployment when a recession hits is even higher, as observed during the recent crisis.

Apart from EPL, other labour market institutions are also behind the relatively high levels of youth unemployment and the higher increase of youth unemployment during recessions. Minimum wages are obviously more binding for low productivity workers during recessions. Hence, young workers with low educational attainments are less likely to find jobs during those periods. A similar effect arises from collective bargaining agreements that typically narrow the wage structure making it more costly to hire young, non-experienced workers in relative terms.

A Brief Survey of Recent Results on Youth Unemployment

In recent years, many researchers have extensively studied the great divergences in youth unemployment

rates between countries and the reasons why youth unemployment rates tend to be higher than adult rates in many of them. Besides, as Scarpetta *et al.* (2010) point out, the current crisis is exacerbating a number of structural problems that affect this group, highlighting the urgency in the search for short-term solutions and structural reforms.

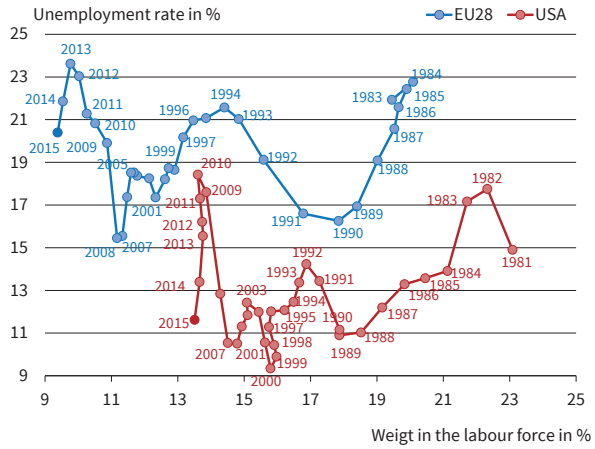
Blanchflower and Freeman (2000) and more recently OECD (2008) have confirmed that youth unemployment is more responsiveness to business-cycle conditions than adult unemployment and this high-response tends to decline steadily with age. Bell and Blanchflower (2011) have pointed out some labour demand and supply reasons that explain this greater sensitiveness: young people have less specific human capital, some of them lack experience and they suffer a higher worker turnover after improving their job matches.

Furthermore, Boeri and Jimeno (2016) show that divergence of unemployment both across countries and among population groups arises from a triple interaction among the magnitude and nature of macroeconomic shocks and labour markets institutions that conditioned the ways in which employers react to these shocks.

Figure 6a

Unemployment Rates and Weights in the Labour Force

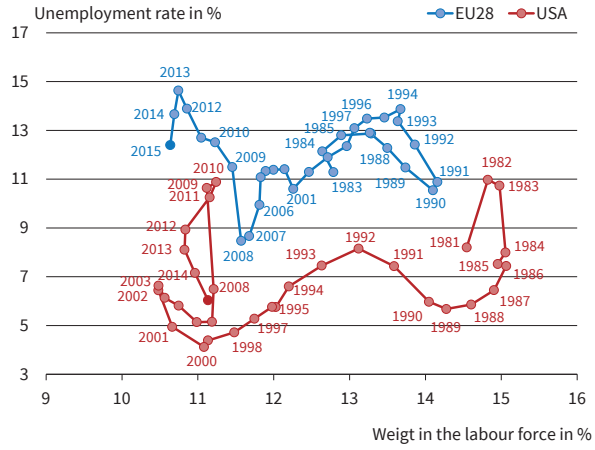
15–24 years of age



Source: OECD. © ifo Institute

Unemployment Rates and Weights in the Labour Force

25–29 years of age



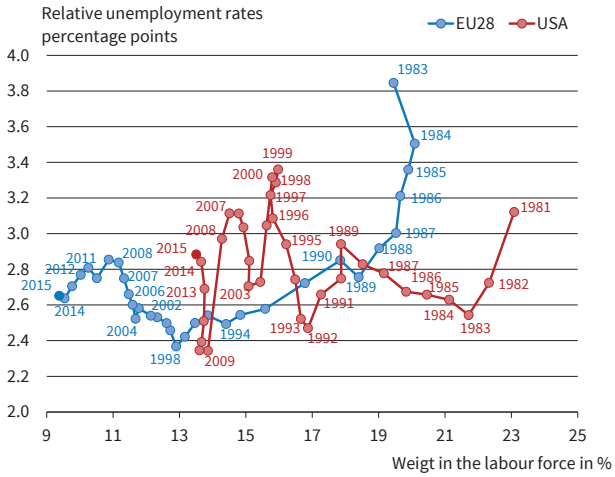
Source: OECD. © ifo Institute

Dolado *et al.* (2015) also analyse the strong divergences across European youth unemployment by distinguishing different groups of countries according to their ability to deal with this problem. A first group made up of Austria, Germany and Switzerland. These countries have been quite successful in keeping youth unemployment low mostly because of their efficient use of vocational training and programmes targeted at disadvantaged youth. A second group includes France, Britain and Sweden. This group has been less successful, mainly due to employment protection and minimum wages, plus a partly dysfunctional education system. Cahuc *et al.* (2013) show their concerns about the possibility of a 'lost generation' arising in France due to the strong increase in youth unemployment. They compare the reasons why Gemany tackles unemployment so well and France does not. They conclude that the dual apprenticeship system is a strong German asset with respect to smoothing school-to-work transitions. Furthermore, the absence of labour market segmentation and national statutory minimum wage has contributed to this better performance. Also the different approach of public employment service to youths has played an important role in their activation. However, unemployment rates in Sweden also exceed 20 percent and this fact has caused considerable concern among Swedish policymakers. Skans (2015) considers the seriousness of the situation less pessimistically in so far as the average duration of unemployment is short and to a large extent coincides with participation in education. A third group (Greece, Spain, Italy and Portugal) has been hit hardest by the crisis and has displayed the highest youth unemployment rates. Segmentation of the labour market, lack of aggregate demand and poor vocational training are among the main reasons for this surge. Also these countries have been more affected by sovereign debt crises or construction bubbles.

More specifically, for Italy, Leonardi and Pica (2015) identified three main reasons for the relative increase of youth unemployment during the crisis. First, the role of labour market institutions: fixed-term (FT) contracts are concentrated among the young and they experience a lower protection against potential dismissals.

Figure 6b

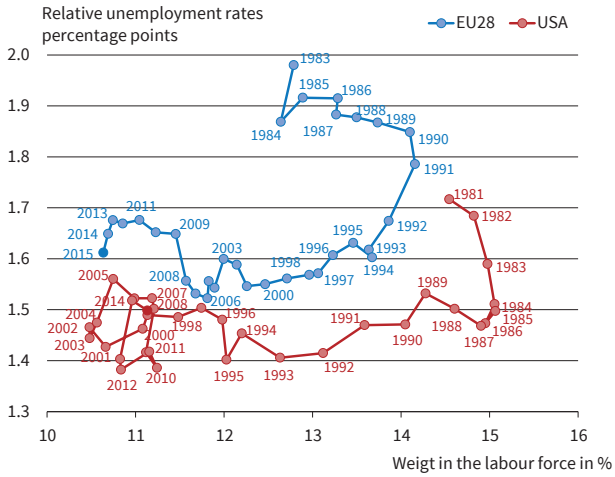
Relative Unemployment Rates and Weights in the Labour Force
15–24 years of age



Note: The relative unemployment rate is the difference between the unemployment rate of men and women for each population group.

Source: OECD.

Relative Unemployment Rates and Weights in the Labour Force
25–29 years of age



Note: The relative unemployment rate is the difference between the unemployment rate of men and women for each population group.

Source: OECD.

Second, Italian youth suffer a poor school-to-work transition as signalled by the high number of NEETs ('young people not in education, employment or training'), but college graduates have also experienced long periods of unemployment perhaps due to excess supply. Finally, the number of full-time students has increased with the crisis and the authors consider that this decline in the participation of the young could mechanically increase the measured youth unemployment rate.

Spain is another country where the youth unemployment rate reached its highest levels during the crisis, hitting an extremely high 55 percent. However, this greater incidence of unemployment among young people it is not a singular fact from this crisis, due to structural problems in the school-to-work-transitions of youths and rigidities in the labour market that disproportionately affect youth (Felgueroso and Jansen 2015) for several decades, now. In Spain the share of early school leavers is 23.6 percent, the Spanish system of vocational training is underdeveloped compared to the best-performing countries in Europe and some university studies offer relatively poor employment prospects. Besides, Spanish young people have also suffered a higher incidence of temporary employment and this is found (Dolado *et al.* 2013) to be one of the main determinants of both high worker turnover and the volatility of youth employment.

Youth unemployment tends to decline with age, but in Greece the greatest concern is for the age group 25–29 because numerically their unemployment is much larger than those aged 15–19 (Bell and Blanchflower 2015), and the participation rate of youngsters below 24 years of age is very small. Also in Greece youth unemployment was relatively high prior to the recession and the ratio youth/adult unemployment has even been trending even to decrease during the crisis.

DEMOGRAPHICS AND YOUTH UNEMPLOYMENT

Changes in youth unemployment rates are taking place simultaneously with a declining weight of the young population and new patterns in participation across population groups. Typically shift-share analysis is used to identify the change in aggregate unemployment rates due to compositional effects arising from changing weights of the several population groups into either the total population or the labour force. Results from this type of approach lead to the conclusion that in most countries population ageing is putting some brake on the rise of aggregate unemployment rates, since, as seen above, the highest rise of unemployment is taking place among youths whose weight in the total population and in the labour force is lowest. Moreover, when trends in aggregate unemployment rates are measured by common factors in worker flows of the different population groups, the impact of demographic-specific components on the aggregate unemployment rate is even higher than what a standard labour force

shift-share analysis is able to discover (Barnichon and Meesters 2016).

Another important issue regarding the relationship between unemployment and demographics is the extent to which changes in participation and population weights are related to changes in unemployment of specific population groups. On this, the conventional wisdom is against the lump-of-labour fallacy so that changing weights should not cause changes in relative unemployment rates across population groups. Another matter, however, is whether a recession has a different impact on the youth unemployment rate when the weight of young workers in the labour force is decreasing relative to the same impact when those weights are increasing.

We address this question in two steps. First, Figures 6a and 6b provide the evolution of the youth labour force weights and unemployment rates (absolute and relative) for the EU28 and the United States during the period 1981–2015. The reduction of the labour force weight of both the population aged 15–24 and the one aged 25–29 was roughly similar in both areas (about 10 percentage points and 5 percentage points, respectively) while the corresponding youth unemployment rates behave in a cyclical fashion that seems unrelated to the declining trend of the labour force weights. A similar finding arises when looking at relative unemployment rates, although in this case the recession of the early 1980s, when the weights of the young populations in the labour force were highest, was associated to largest gaps between youth unemployment rates and those of the population over 30 years of age.

To investigate further the relationship between labour force weights and youth unemployment rates we run some panel data regressions for our sample of 39 countries during the period 1981–2015. We search for the statistical association between those two variables and for changes of this association during the most recent period starting with the Great Recession (2007 and after). Results are summarised in Table 2. Overall, there is not a statistically significant association between youth labour force weights and unemployment rates, either for the population aged 15–24 years or the one aged 25–29. If anything, we find that during the most recent period, for the youngest population, the association between the relative size of the population and its unemployment rate was negative, that is, the increase of the unemployment rate of this population group that took place during the most recent period was associated with a decline of the labour force weight. Hence, there seems to be very little room for explanations of youth unemployment based on demographic shifts and for policies that aim at improving the employment prospects of the young population by changing the relative weights of the different population groups in the labour force.

CONCLUDING REMARKS

The rise of youth unemployment in Europe during the recent crisis was abnormally large, especially in South-

Table 2

Youth Unemployment Rate and Labour Force Weight: Panel Data Regressions

a. 15–24 years of age

	ur1524	ur1524	ur1524-urover30	ur1524-urover30
lf1524	–.199	–.080	0.014	.082
	(.185)	(.184)	(0.162)	(.158)
lf1524*2007 and after	–	–.461	–	–.251
		(.206)		(.117)
N	1,161	1,161	1,144	1,144
R-sq within	.18	.20	.19	.21
between	.09	.17	.01	.06
overall	.09	.12	.05	.07

Note: 'ur1524' = unemployment rate in the age group between 15 and 24 year old; 'urover30' = unemployment rate in the age group over 30 year old; 'lf1524' = labour force weight of the age group between 15 and 24 year old; robust standard errors in parenthesis.

Source: OECD; own calculation.

b. 25–29 years of age

	ur2529	ur2529	ur2529-urover30	ur2529-urover30
lf2529	.151	.179	.001	.009
	(.219)	(.219)	(.091)	(.091)
lf2529*2007 and after	–	–.140	–	–.043
		(.364)		(.134)
N	1,144		1,144	1,144
R-sq within	.16	.17	.18	.18
between	.11	.10	.02	.01
overall	.09	.09	.05	.05

Note: 'ur2529' = unemployment rate in the age group between 25 and 29 year old; 'urover30' = unemployment rate in the age group over 30 year old; 'lf2529' = labour force weight of the age group between 25 and 29 year old; robust standard errors in parenthesis.

Source: OECD; own calculation.

ern European countries. Is it sufficient to trust that an economic recovery will reduce unemployment of all the population groups to normal levels? If not, what kind of policy intervention is needed to improve the labour market prospects of the European unemployed youth?

In principle, estimates of Okun's law (that is the relationship between GDP growth and unemployment) suggest that positive shocks raising GDP tend to decrease youth unemployment in a similar fashion as for the unemployment of other population groups (van Ours 2015). If anything, the slope of the relationship between GDP growth and youth unemployment seems to have become steeper since 2007 (which is why during the last recession youth unemployment increased by more than expected). If so, future increases in economic activity should go hand-in-hand with higher reductions in youth unemployment.

There are, however, two reasons why high youth unemployment needs to be addressed with a specific approach. One is that unemployment during the early stage of the working career (and especially long-term youth unemployment) has a persistent negative effect on future labour outcomes. In the case of short-term youth unemployment, jumping from temporary to temporary jobs and not being able to capitalise on their human capital nor accumulate substantial working experience, the effect could be as large as for long-term unemployment. Thus, the so-called 'scarring' effects of unemployment could be especially large for this population group. The second reason is that depreciation of human capital takes place at particularly higher rates during the initial stages of the working career, and, again, this happens both for long-term unemployed youth and for young workers with very high transition rates among temporary jobs.

Under the conceptual framework and with the interpretation of the evidence presented above, there are two main policy interventions to be considered. One should be targeted to reduce the labour market frictions that make the search for a first significant job especially burdensome. This requires changes in the educational and vocational system to make the job matches of new entrants into the labour market more efficient. Thus, best practices in transitions from school to work need to be identified and implemented. However, this would not be sufficient if there are labour market institutions that preclude employment stability for young workers. Hence, a second policy intervention that is needed requires dismantling of entry barriers into employment and the establishment of in-work benefits, particularly for low-skilled young workers and eliminating dual EPL that is at the root of the excessively high and negative job turnover for youths. These types of interventions are somehow resisted by insiders in countries where they are most needed and, therefore, there is substantial scope for a European–wide initiative, as suggested by Boeri and Jimeno (2016).

DATA APPENDIX

The source of data is *OECD_Stat (https://stats.oecd.org/).* Countries included in the sample and the corresponding sample periods are:

- Australia, Canada, Spain, Finland, Germany, Italy, Portugal, Japan, Korea, Netherlands, Norway, Sweden, USA, G7 (1981-2015)
- Belgium, Denmark, France, Greece, Luxembourg, Ireland, EU28 (1983-2015)
- Britain (1984-2015)
- Israel (1985-2015)
- New Zealand (1986-2015)
- Turkey (1988-2015)
- Iceland, Mexico, Switzerland (1991-2015)
- Estonia (1990-2015)
- Poland, Hungary (1992-2015)
- Czech Republic (1993-2015)
- Austria, Slovakia (1994-2015)
- Chile (1996-2015)
- Latvia, Lithuania, Slovenia (2000-2015)

REFERENCES

Barnichon, R. and G. Meesters (2016), "On the Demographic Adjustment of Unemployment", *Review of Economics and Statistics,* forthcoming.

Bell, D.N. and D.G. Blanchflower (2011), "Young People and the Great Recession", *Oxford Review of Economic Policy* 27, 241–267.

Bell, D.N. and D.G. Blanchflower (2015), "Youth Unemployment in Greece: Measuring the Challenge", *IZA Journal of European Labor Studies* 4, 1–25.

Blanchflower, D.G. and R.B. Freeman (eds., 2017), *Youth Employment and Joblessness in Advanced Countries,* Chicago: University of Chicago Press.

Boeri, T. and J.F. Jimeno (2016), "Learning from the Great Divergence in Unemployment in Europe during the Crisis", *Labour Economics* 41, 32–46.

Cahuc, P., S. Carcillo, U. Rinne and K.F. Zimmermann (2013), "Youth Unemployment in Old Europe: The Polar Cases of France and Germany", *IZA Journal of European Labor Studies* 2, 1–23.

Dolado, J.J., M. Jansen, F. Felgueroso, A. Fuentes and A. Wölfl (2013), *Youth Labour Market Performance in Spain and its Determinants: A Micro Level Perspective,* OECD Economics Department Working Paper 1039.

Dolado, J.J. (ed., 2015), *No Country for Young People? Youth Labour Market Problems in Europe,* VoxEU, http://voxeu.org/content/no-country-young-people-youth-labour-market-problems-europe.

Leonardi, M., and G. Pica (2015), "Youth Unemployment in Italy", in: Dolado J.J. (ed.), *No Country for Young People? Youth Labour Market Problems in Europe,* VoxEU, http://voxeu.org/content/no-country-young-people-youth-labour-market-problems-europe.

OECD (2008), *Off to a Good Start? Youth Labour Market Transitions in OECD Countries,* Paris.

Scarpetta, S., A. Sonnet and T. Manfredi (2010), *Rising Youth Unemployment during the Crisis,* OECD Social, Employment and Migration Working Papers 106.

Skans, O.N. (2015), "Swedish Youth Unemployment: Perhaps Not As Bad As It Looks?, in: Dolado J.J. (ed.), *No Country for Young People? Youth Labour Market Problems in Europe,* VoxEU, http://voxeu.org/content/no-country-young-people-youth-labour-market-problems-europe.

Van Ours, J. (2015), "The Great Recession Was Not So Great", *Labour Economics* 34, 1–12.

Joachim Möller

Youth Unemployment in Europe from a Regional Perspective

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INTRODUCTION

It is an established fact that in most countries the unemployment rate of young workers exceeds that of prime-age workers.[1] To a certain extent a moderately elevated rate of joblessness among young workers might be seen as 'natural'. For instance, job mobility in general is higher for entrants in the labour market. Younger workers are not yet closely attached to a specific workplace or occupation. They are often looking for better alternatives and are more inclined to try something new. As a result of these specific mobility patterns, employment spells are shorter and frictional unemployment is higher. Since mobility should lead to better matches, it even contributes to better labour market efficiency.

However, youth unemployment in most European countries is far beyond a level that could be explained by these idiosyncratic behavioural factors. Rather, it seems that for whatever reason, entry to a non-precarious labour market career is blocked for far too many young workers. Serious social and economic problems are likely to arise and call for early and resolute political counter-measures. Several studies present evidence, that especially in the European context, unemployment 'breeds' unemployment and diminishes career perspectives over the life course (Manzoni und Mooi-Reci 2011). With German data, Schmillen und Umkehrer (2013) find long-lasting unemployment effects in workers' prime-age careers caused by early unemployment experience. Gangl (2006) shows post-unemployment earnings losses for the United States and European countries, and Möller und Umkehrer (2015) identify significant long-lasting negative income effects of early unemployment experience in Germany.

In general for young workers, a problematic situation arises from a combination of labour market slackness and unfavorable labour market and educational institutions. In times of a macroeconomic crisis or insufficient labour demand in general, young workers might suffer especially under such conditions. They are in a weaker position relative to experienced workers because they have not yet been able to accumulate enough general and firm-specific human capital. Therefore, in the eyes of the employer, they appear to be less productive. Although young workers are also paid lower wages, the pay differential may not fully compensate for the productivity gap, especially if there are high costs of training on the job. The employer simply might not be willing to incur the corresponding investment in times of labour market slackness. This lack of willingness is especially relevant if the acquired skills of the young worker do not fit the practical needs of the firm or if the employer has no comprehensive information on the young worker's qualifications and characteristics and hiring him or her would therefore be risky. The relatively disadvantaged position of young workers can be reinforced under specific institutional arrangements. As argued by the insider-outsider theory, incumbent workers, i.e. the insiders, dispose of some market power because of hiring and firing costs. Job stability for prime-age workers and precarious jobs or elevated unemployment of young workers can be seen as two sides of the same coin. What is more, if layoff protection depends on tenure, then the inverse seniority principle leads to a concentration of job losses among younger workers in times of a severe recession. More than prime-age workers, the younger workforce serves as a buffer stock in times of economic crisis.

As a result of these considerations, one would expect substantially higher youth unemployment rates relative to those of prime-age workers, especially in situations of labour market slackness. In a previous study (Dietrich und Möller 2016), we compare the situations of young workers in different countries. We show not only that unemployment rates of the young relative to other workers are elevated in all EU countries but also that they are more responsive to situations of labour market slackness. Moreover, educational institutions are likely to play an important role. Countries such as Austria, Germany and Switzerland have established a so-called dual system of vocational training that combines firm-specific qualifications and general training in public vocational schools. In these countries, young workers acquire valuable qualifications and are therefore better off with respect to their relative labour market situation. We also find indications that significant insider-outsider mechanisms to the detriment of labour market entrants exist in at least some countries.

In the following, we consider not only the differences between countries but also intra-national variation. Whereas institutions vary between countries, such variation should not occur between regions of the same country. Typically, the legal framework, for instance, as well as the principles of education and vocational training should not vary considerably within a country. As a result, the regional perspective can contribute to some deeper insights into the nature of youth unemployment in different circumstances.

[1] See Dietrich and Möller (2015) for more details.

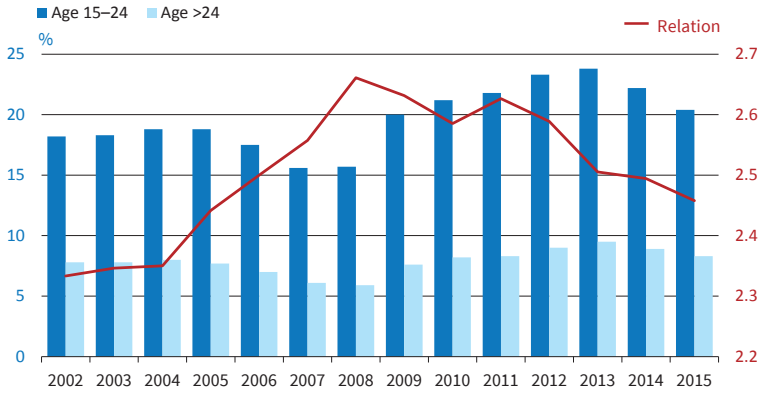
DATA AND DESCRIPTIVES

The Data

In the empirical analysis, we use Eurostat data for EU28 countries plus Iceland, Norway and Switzerland. Eurostat publishes the unemployment rates of young (15 to 24 years old) and older workers (25 and up) for these countries at the regionally disaggregated level (NUTS1 to NUTS3).[2] Here, we confine our analysis to the NUTS2 level. The data are available for the years 1999 to 2015. Unfortunately, there are regional re-definitions for a small number of countries, which generates some missing values for these countries (e.g. Greece, Bulgaria). The two Spanish exclaves in North Africa and the French overseas territories are excluded. The sample includes between 193 and 274 non-missing observations per year.

Figure 1

Unemployment Rate by Age and Relation of Youth Unemployment Rate to Unemployment Rate of Workers above the Age of 24, EU28



Source: Eurostat; own calculations. © ifo Institute

Aggregate Evidence

Figure 1 shows the general evolution of the unemployment rate for the two groups of workers, those between age 15 and 24 (the 'youth') and those above age 24 (the 'non-youth'). Additionally, the graph depicts the ratio of the two (right axis). It is evident that the average youth unemployment rate is substantially higher than the non-youth unemployment rate. The ratio of the two rates was between 2.33 in 1999 and 2.66 in the pre-crisis year 2008 where the youth unemployment rate decreased to almost 15 percent. Although both unemployment rates move closely together – the correlation coefficient is 0.95 – the youth unemployment rate responded more sensitively to the Great Recession, i.e. in the years after 2008. Youth unemployment in the EU28 countries reached its highest level (23.8) in 2013. In the recent recovery, the rate has declined to approximately 20 percent, still without reaching the pre-crisis level. The ratio of the two unemployment rates has more or less steadily fallen since its peak in 2008 and is only slightly above the value of the early 2000s at the end of the observation period.

Evidence at the Regional Level

The range between the lowest and the highest youth unemployment in the NUTS2 regions of European countries is enormous. In 2014 and 2015, there were two Spanish regions (Castilla-la Mancha, Andalucía), three Greek regions (Dytiki Ellada, Ipeiros, Thessalia)

[2] NUTS: *Nomenclature des unités territoriales statistiques.*

Table 1

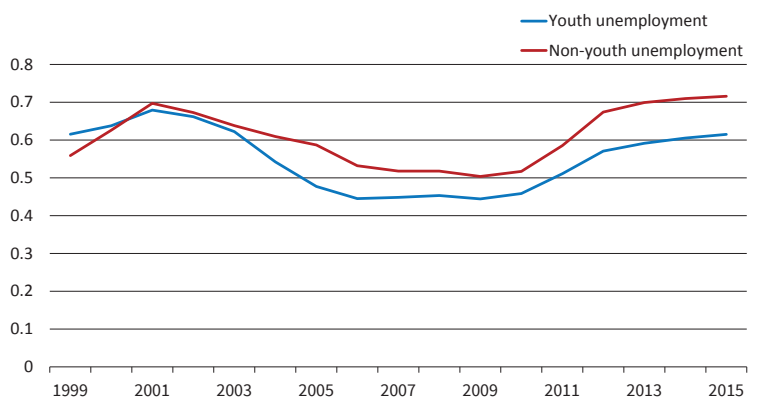
Youth and Non-youth Unemployment Rates: EU28 Countries Plus Iceland, Norway and Switzerland (1999-2015)

	Youth unemployment rate				Non-youth unemployment rate			
	Mean	Standard deviation	Min	Max	Mean	Standard deviation	Min	Max
1999	20.3	12.5	2.6	65.2	7.8	4.4	1.2	23.5
2000	19.4	12.4	3.5	64.1	7.4	4.6	1.2	22.4
2001	18.6	12.6	2.0	60.2	6.6	4.6	1.0	21.0
2002	18.4	12.2	3.4	59.4	7.0	4.7	1.5	23.7
2003	18.7	11.7	5.5	59.6	7.2	4.6	1.8	23.8
2004	19.3	10.4	4.0	52.8	7.4	4.5	1.9	23.2
2005	18.9	9.0	5.5	46.1	7.2	4.2	1.6	21.4
2006	17.7	7.9	3.7	38.9	6.6	3.5	1.7	19.0
2007	15.7	7.1	4.6	37.7	5.7	3.0	1.2	17.1
2008	15.9	7.2	4.1	39.1	5.4	2.8	1.4	15.8
2009	19.7	8.8	4.6	47.8	6.9	3.5	1.5	23.7
2010	21.4	9.8	4.8	52.0	7.5	3.9	2.0	26.3
2011	22.7	11.6	4.2	54.1	7.6	4.5	1.5	27.5
2012	24.7	14.1	4.1	72.3	8.3	5.6	1.9	31.6
2013	25.5	15.1	4.3	70.4	8.8	6.2	1.9	33.4
2014	24.0	14.5	3.7	69.8	8.4	5.9	2.1	32.4
2015	22.5	13.8	3.4	65.1	7.8	5.5	1.6	29.4

Source: Eurostat; own calculations.

Figure 2

Coefficient of Variation for Unemployment Rates in Europeans NUTS2 Regions by Age Group



Source: Eurostat; own calculations. © ifo Institute

and one Italian region (Calabria) where the youth unemployment rate even exceeded 60 percent in at least one year. Table 1 contains the mean, standard deviation, minimum and maximum of NUTS2 unemployment rates by age group. Not only the mean rates but also the difference between the maximum and minimum rates are much higher for youth unemployment rates.

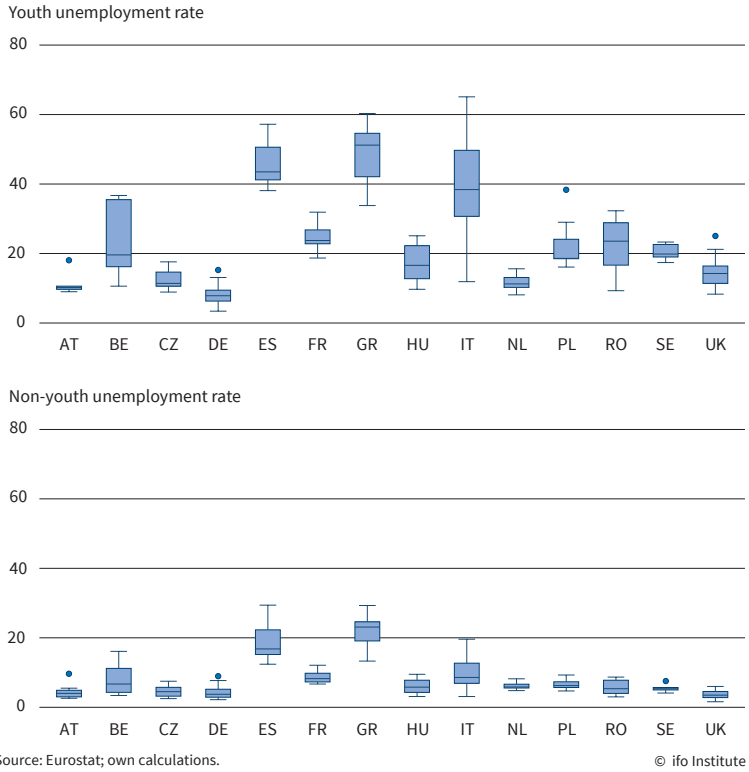
The coefficients of variation for youth and non-youth unemployment rates are shown in Figure 2. Again, both series are highly correlated. As seen from the graph, the indicator fell before the Great Recession and started to rise in the aftermath of the tremendous economic shock in 2008/2009. As a rising coefficient of variation means increasing disparities among the European NUTS2 regions, it indicates divergent tendencies with respect to labour market conditions. These tendencies were especially strong in the time period 2009 to 2012.

Figure 3 contains box plots for the 14 EU countries consisting of at least eight NUTS2 regions. Using the same scale, the graph gives an impression of the magnitude and dispersion of youth and non-youth unemployment rates at the regional level. Non-youth unemployment rates are at extraordinary high levels in Spain and Greece; at intermediate levels in Belgium, France and Italy; and at relatively low levels in the rest of the countries. Except for France, the regional dispersion of non-youth unemployment rates is elevated in the countries with a higher median non-youth unemployment rate. The youth unemployment rate is highest in Greece, Spain and Italy; at intermediate levels in France, Romania, Belgium, Hungary, Poland and Sweden; and lowest in Germany, Austria, the Czech Republic, the Netherlands and Britain. The dispersion is highest in Italy, Belgium, Greece, Spain and Romania. In most of the countries with low youth unemployment, the regional dispersion is also low.

Figure 4 depicts the ratio of the youth to non-youth unemployment rates for the NUTS2 regions of the selected countries. These ratios could be seen as an indicator for the relative power of prime-age and older insiders against young outsiders. With Italy, Romania, Sweden and Britain, the group of countries with the highest ratios is diverse. In contrast, the group of countries with the lowest youth unemployment rates (Germany, Austria and the Netherlands) has the lowest ratios and low dispersion. Notably, the two countries with the highest youth unemployment rates, Spain and Greece, are not among the countries with an indicator of insider power above the average. The highest regional dispersion with respect to this indicator is found for Britain, Romania, Belgium, Italy and the Czech Republic.

Figure 3

Box-Plots of Youth and Non-youth Unemployment Rates
at NUTS 2 Level for 14 EU Countries (2015)

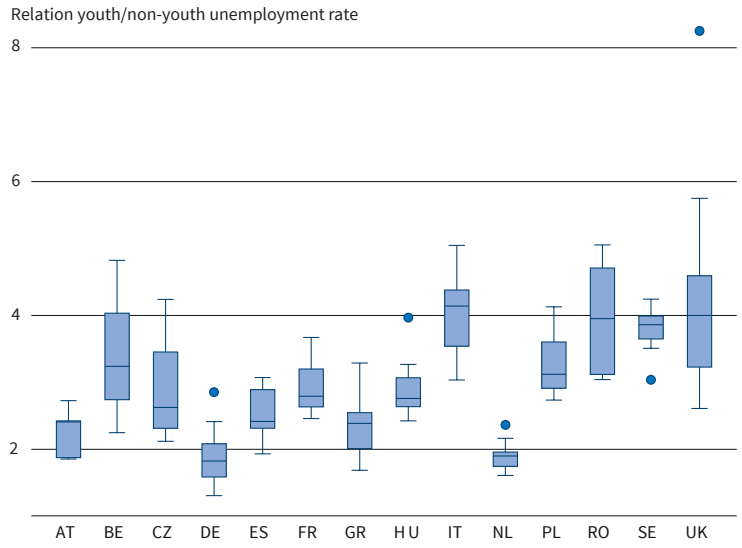


Source: Eurostat; own calculations. © ifo Institute

Figure 4

Ratio of Youth to Non-youth Unemployment Rate

NUTS2 regions, 14 EU countries (2015)



Source: Eurostat; own calculations. © ifo Institute

We conclude the descriptive analysis by showing that the unemployment rates of the two age groups are highly correlated not only at the aggregate but also at the regional level. Figure 5 depicts the relationship of the unemployment rates of workers of the two age groups for a cross-section of NUTS2 regions in 2015. The relationship appears to be slightly concave. A simple quadratic function yields a coefficient of determination of 84 percent. If the unemployment rate of workers ages 25 and above can be taken as an indicator of labour market slackness, it is evident that youth employment is not primarily an isolated phenomenon but depends heavily on aggregate labour market conditions. Thus, the regional analysis supports our main conclusion from our study at the country level (see Dietrich and Möller 2015).

Figure 5

Relationship between the Youth and Non-youth Unemploymet Rates, 2015

261 European NUTS2 regions

Source: Eurostat; own calculations. © ifo Institute

ECONOMETRIC ANALYSIS

We take the regional non-youth unemployment rate as an indicator of labour market slackness in general. The aim of the econometric analysis is to analyse the idiosyncratic response of youth unemployment to labour market slackness and other factors.

Using the panel structure of the data, we apply a fixed-effects model using the regions' youth unemployment rate as the dependent variable and the non-youth unemployment rate and time fixed effects as right-hand side variables (model 1). In an alternative specification, we additionally include the squared non-youth unemployment rate (model 2). The regressions are run for the entire observation period as well as for two sub-periods with 2009 as the dividing year. The results are shown in Table 2.

Even when controlling for unobserved time-invariant heterogeneity of regional entities, the relationship between youth and non-youth unemployment appears to be strong in all variants. The quadratic term is statistically significantly negative only if all observations are used but not for the two subsamples. Thus, for the latter, model 1 might be preferable. The coefficient of determination is 0.7 for the complete sample and somewhat lower than 0.6 for the early and almost 0.8 for the later sub-period. With values of approximately 1.9 in model 1 and 2.3 in model 2, the coefficient of the non-youth unemployment rate is fairly stable across the subsamples. Therefore, on average, the youth unemployment rate responds to a one percentage-point change in the non-youth unemployment rate by approximately twice that amount.

The influence of factors not related to non-youth unemployment can be termed 'youth-specific structural factors'. These factors are calculated from the constant and the time effects in the fixed-effects regression and are shown in Figure 6. The structural factors increased slightly from 2 to 3 percent in the period 2000 to 2007. Between 2007 and 2011, a steep increase of 3.4 percentage points can be observed. After 2012, the youth-specific structural factors in youth unemployment started to decline and again came down by almost 1.5 percentage

points. To what extent this was due to youth-specific labour market policy measures cannot be determined from this analysis. It should be stressed, however, that despite the slight improvement over the past couple of years, structural factors as calculated here still account for approximately a quarter of total youth unemployment on average.

Decomposition Analysis

By using an HP filter, the total non-youth unemployment rate in region r at time t, u_{rt}, is divided into a cyclical component $\tilde{u}_{rt}$ a structural or trend component u_{rt}^{τ}. Consider the hypothesis that the youth unemployment rate in the different countries responds to the cyclical and trend components of u_{rt} in an idiosyncratic way. Additionally, allowing for fixed effects, the corresponding model is

Table 2

Results of Fixed-Effects Estimates of the Youth Unemployment Rate on the Non-youth Unemployment Rate for 31 European Countries by Observation Period

	Dependent variable: youth unemployment rate			
	Model 1		Model 2	
	coeff.	s.e.	coeff.	s.e.
	Observation period 1999-2015			
Constant	5.037**	1.112	2.768(*)	1.385
Non-youth unemployment rate	1.886**	0.139	2.362**	0.259
Non-youth unemployment rate squared#	–	–	– 1.806*	0.764
R^2 (overall)	0.695		0.702	
N	4199			
	Observation period 1999-2008			
Constant	4.393**	0.831	2.995*	1.352
Non-youth unemployment rate	1.964**	0.119	2.285**	0.246
Non-youth unemployment rate squared#	–	–	– .387	1.100
R^2 (overall)	0.571		0.578	
N	2308			
	Observation period 2009-2015			
Constant	7.351**	1.610	4.638	2.483
Non-youth unemployment rate	1.820**	0.191	2.382**	0.410
Non-youth unemployment rate squared#	–	–	– 1.972	1.267
R^2 (overall)	0.778		0.793	
N	1891			

Notes: All models include time fixed effects and a constant (not reported); s.e.: robust standard errors adjusted for country cluster; coefficients of squared non-youth unemployment rate times 100.

Source: Eurostat; own calculations.

$$(1)\ y_{rt} = a_0 + a_1^c \tilde{u}_{rt} + a_2^c u_{rt}^{\tau} + \delta_r + \delta_t + \varepsilon_{rt},$$

where y_{rt} is the youth unemployment rate, a_1^c and a_2^c are specific parameters for country c; and δ_r and δ_t are the fixed effects for region r and time period t. In principle, the model enables us to divide the youth unemployment rate into

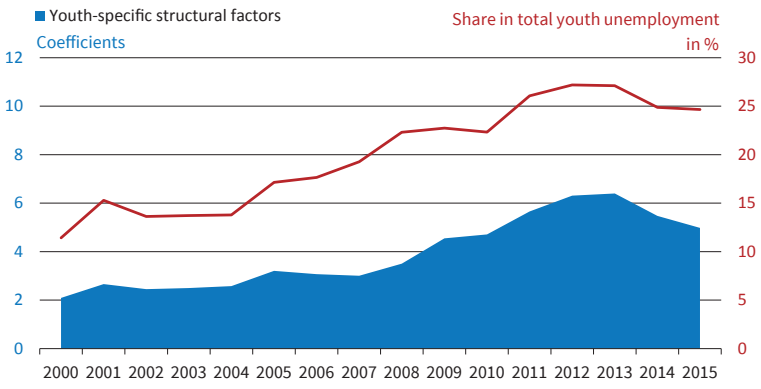
- time-specific general factors, $\alpha_0 + \delta_t$,
- region-specific structural factors, δ_r,
- cyclical labour market slackness, $a_1^c \tilde{u}_{rt}$, and
- structural labour market slackness, $a_2^c u_{rt}^{\tau}$.

Using data for the period 1999 to 2015, the model is estimated for 14 European countries containing at least eight NUTS2 regions.[3] A Wald test with a statistic of F(13,186) = 8.08 clearly rejects the null for equal coefficients $a_1^c = a_2^c$ ($c = 1,\cdots,13$). Moreover, the hypotheses that a_1^c and a_2^c are equal across countries are also rejected at high levels of significance (F(12,186) = 6.34 and F(12,186) = 19.83, respectively). Hence, empirical evidence supports the country-specific idiosyncrasy hypothesis for the response of youth unemployment to the cyclical and trend components of u_{rt}. We interpret this finding as a reflection of country-specific institutional and structural factors determining the response of youth unemployment to cyclical shocks and structural factors.

The results of a panel regression with regional and time fixed effects are shown in Table 3. We present the estimated coefficients for a_1^c and a_2^c graphically in Figure 7. As shown, the country-specific coefficients vary widely. Germany, France and the Netherlands exhibit low coefficients for the cyclical component (approximately 1.5) and for the trend component (approximately 1.0). Austria has the lowest coefficient of the cyclical component but a coefficient of the trend component that is above average. In six countries (BE, ES, PL, RO, UK and HU), the response of the youth unemployment rate to non-youth unemployment is

Figure 6

Estimated Youth-specific Structural Factors in Youth Unemployment



Note: The graph depicts constant and period effects from the panel fixed effect regression.

Source: Eurostat; own calculations.

[3] In some of the estimates Greece was excluded because of major revisions in the demarcation of NUTS2 regions.

Table 3

Results of Panel Regression of Youth Unemployment Rates on Cyclical and Trend Components of Non-Youth Unemployment at NUTS2 Level, 13 EU Countries (1999–2015)

	Dependent variable: Youth unemployment rate			
	Cyclical component		Trend component	
Country	coeff.	s.e.	coeff.	s.e.
AT	1.177	0.644	2.420	0.570
BE	2.138	0.522	1.396	0.298
CZ	2.519	0.236	2.304	0.806
DE	1.515	0.090	0.812	0.159
ES	1.907	0.083	2.116	0.128
FR	1.465	0.122	1.147	0.407
HU	2.097	0.079	3.001	0.215
IT	2.717	0.254	3.561	0.430
NL	1.524	0.119	0.921	0.174
PL	2.039	0.122	2.200	0.143
RO	1.767	0.204	2.647	0.788
SE	2.463	0.423	1.730	0.932
UK	1.891	0.146	2.786	0.522
Time fixed effects	yes			
Constant	yes			
Adj. R-squared	0.943			
N	2965			
F(42,186)	184.13			

Notes: Results of a panel regression with fixed regional and time fixed effects; standard errors are clustered at the regional level.

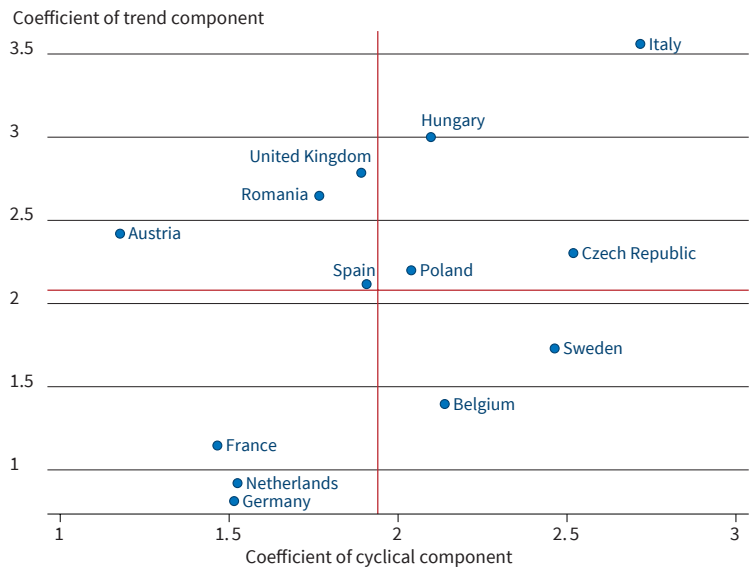
Source: Eurostat; own calculations.

close to the average value of approximately 2. Whereas Belgium, however, exhibits a coefficient of the trend component well below average, the opposite is the case for Romania, Britain and Hungary. The highest responsiveness to cyclical non-youth unemployment is found for Sweden, the Czech Republic and Italy. Italy shows the highest coefficients in both dimensions, whereas the trend coefficient in Sweden is somewhat below the average and that in the Czech Republic is slightly above the average.

Figure 7

Estimated Coefficients of the Cyclical and Trend Components of Non-Youth Unemployment in the Youth Unemployment Equation

NUTS2 regions for 13 European countries (1999-2015)



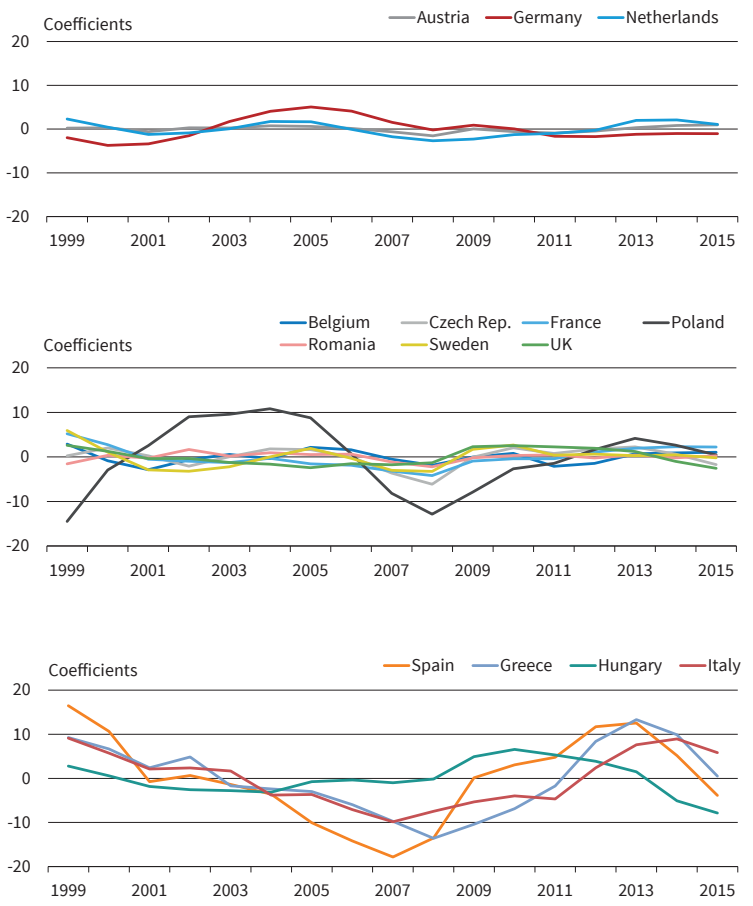
Note: The horizontal and vertical lines represent the average coefficients for the selected countries. Greece was excluded here.

Source: Own calculations.

Figure 8 and Figure 9 show the average of cyclical and non-cyclical components in regional youth unemployment rates for the selected countries. According to the level of youth unemployment in recent years, I divide the countries into three groups: (i) low level: Austria, Germany, and the Netherlands; (ii) intermediate level: Belgium, the Czech Republic, France, Poland, Romania, Sweden and Britain; and (iii) high level: Spain, Greece, Hungary and Italy. In Figure 8, one can see that the countries differ significantly with respect to the cyclical behaviour of youth unemployment. In the countries of categories (i) and (ii), the response of youth unemployment to cyclical movements in non-youth unemployment is moderate and does not exceed a range of plus/minus 5 percent. The only exception is Poland, where the strong cyclical swings in the first half of our observation period appear dampened in the second. In the group of countries with high youth unemployment, we see pronounced cyclical swings. The patterns for Spain, Greece and Italy are similar. They reach their trough in the cyclical component of youth unemployment in 2007/2008 – i.e. just before the Great Recession – and their peaks in 2013/2014. In all countries of category (iii), the cyclical component is declining at the end of the observation period. Hungary exhibits the opposite development from Poland. Here, the cyclical component was moderate in the first half of the observation period but much more pronounced in the second.

Figure 9 shows the regional average of non-cyclical components in youth unemployment according to our decomposition method by country. These components reflect structural factors. In 11 of 14 countries, structural youth unemployment increased from the beginning to the end of the observation period. The only exceptions are the Czech Republic, Germany and Poland (Table 4). The case of Poland is remarkable because the structural component of youth unemployment decreased by not less than 24 percentage points. For the vast majority of countries, structural factors led to an increase in youth

Figure 8
Cyclical Components of Youth Unemployment for Three Different Groups of Countries



Source: Eurostat; own calculations.

unemployment. This was especially the case for Spain (plus 39 percentage points), Greece (plus 24 percentage points), Hungary (plus 15 percentage points) and Italy (plus 10 percentage points). Additionally, in Sweden, Britain and the Netherlands, the increase in the structural component exceeds 5 percentage points. Note that in 1999, the regional average of the non-cyclical youth unemployment rate exceeded 20 percent in only three countries (Poland, Italy and France). At the end of our observation period, this is the case for eight countries. Figure 9 shows that in contrast to the cyclical component, the structural component of youth unemployment in the category (iii) countries has continued to increase in recent years. This is not the case in the countries in the two other categories.

Table 4
Average Regional Non-cyclical Component of Youth Unemployment by Country

Country	1999	2015	Change
Category (i): low youth unemployment			
AT	7.5	8.8	1.4
DE	11.8	7.4	– 4.3
NL	5.6	10.9	5.3
Category (ii): intermediate youth unemployment			
BE	18.6	22.2	3.6
CZ	17.3	15.1	– 2.3
FR	20.1	22.4	2.3
PL	44.6	20.6	– 24.0
RO	19.4	23.4	4.0
SE	11.8	18.0	6.2
UK	11.8	18.0	6.2
Category (iii): high youth unemployment			
ES	10.7	49.6	38.9
GR	17.0	41.1	24.1
IT	25.0	34.8	9.8
HU	11.5	26.7	15.1

Source: Eurostat; own calculations.

SUMMARY AND CONCLUSIONS

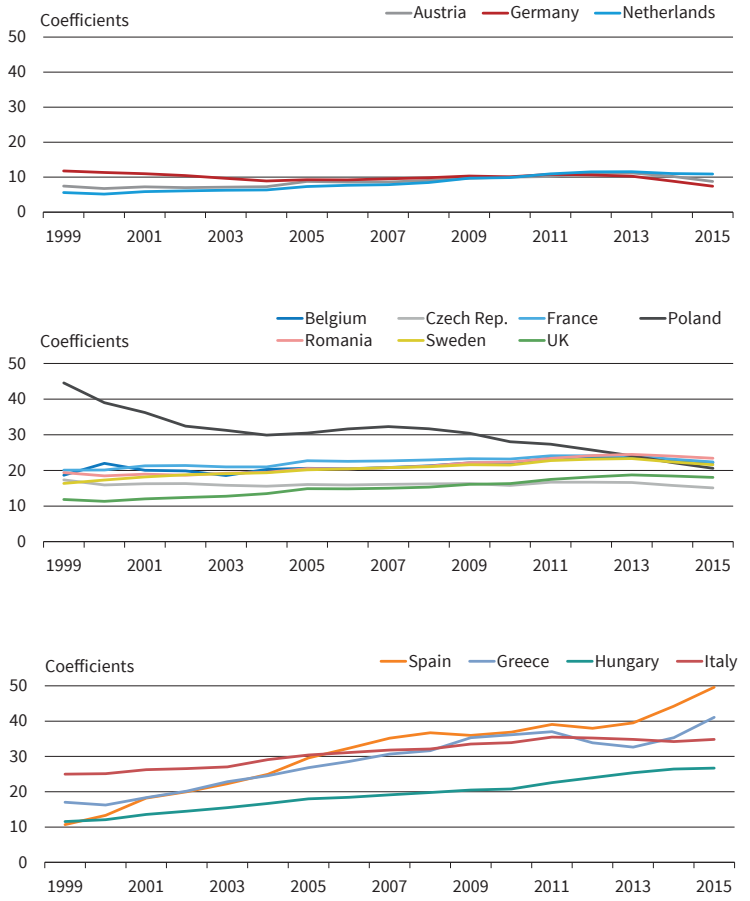
High youth unemployment is an increasing challenge for social adhesion in many European countries. With data at the regional level, we show that on average, youth unemployment rates are twice as sensitive to cyclical shocks as non-youth unemployment rates. Insider-outsider mechanisms and last-in/first-out rules for workforce adjustment in economic crises are the primary explanations for this pattern.

We decomposed the regional non-youth unemployment rates into a cyclical and a trend component and showed that the youth unemployment rate responded idiosyncratically in the different countries. Italy, the Czech Republic and Sweden have the highest sensitivity to cyclical shocks, and Austria, France, Germany and the Netherlands have the lowest. The response of youth unemployment to the trend component of non-youth unemployment is the highest for Italy, Hungary and the UK. These results point to the importance of country-specific institutions and conditions.

Based on the econometric estimates, we calculated a cyclical and a structural component of youth unemployment in the selected countries. For countries with an extremely high risk of unemployment for young workers, we find some similarities. In these countries, the swings of the cyclical component are very high and there is a strong rising trend in the structural component. Although there has been some easing of tension from the cyclical component in recent years, the structural component shows no sign of improvement. In contrast, for most of the other countries, the structural component of youth unemployment has decreased slightly in recent years.

Figure 9

Non-cyclical Components of Youth Unemployment for Three Different Groups of Countries



Source: Eurostat; own calculations.

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The policy conclusions are mixed. For the majority of the selected European countries, there are some indications that the corrective measures that have been adopted to combat the structural causes have started to bear fruit. Unfortunately, this is not the case for the high-risk countries. Corrective measures include a wide range, from improving the educational system to additional training programmes and administrative measures for better monitoring of and assistance for young people in the school-work transition process to changes in the labour law and other institutions to improving the relative hiring chances of young workers.

It seems that there is no one-size-fits-all solution to the severe problem of youth unemployment in European countries. For example, the dual training system for young workers, which is successful in Austria, Switzerland and Germany, has a long tradition of requiring institutions and behavioural patterns that cannot easily be transferred to other countries. In our view, the key lessons of the previous experience consist of four elements: first, the combination of theoretical and practical knowledge should be strengthened in the country-specific educational systems. Second, there should be better monitoring of and assistance for young people in the school-work transition process. In this context, there are some best practices in some European regions that could be taken as models.[4] Third, there should be attempts to reduce the institutional disadvantages of young workers at labour market entry, which might require adjustment of labour laws. Fourth, the problematic situation of young workers in several European countries also hinges on general labour market slackness in these countries. Hence, measures to improve competitiveness and the general establishment of an employment-friendly framework will help young workers more than others.

REFERENCES

Dietrich, H. and J. Möller (2016), "Youth Unemployment in Europe – Business Cycle and Institutional Effects", *International Economics and Economic Policy* 13, 5–25.

Gangl, M. (2006), "Scar Effects of Unemployment: An Assessment of Institutional Complementarities", *American Sociological Review* 71, 986–1013.

Manzoni, A. and I. Mooi-Reci (2011), "Early Unemployment and Subsequent Career Complexity: A Sequence-based Perspective", *Schmollers Jahrbuch* 131, 339–348.

Möller, J. and M. Umkehrer (2015), "Are There Long-term Earnings Scars from Youth Unemployment in Germany?", *Jahrbücher für Nationalökonomie und Statistik* 235, 474–498.

Schmillen, A. and M. Umkehrer (2013), *The Scars of Youth – Effects of Early-career Unemployment on Future Unemployment Experience,* IAB Discussion Paper 06/2013.

[4] In Germany, the city of Hamburg is a pioneer in this respect. The region has established a comprehensive monitoring and assistance system for young people at the transition from school to work. This is done within a new administrative unit (*Jugendberufsagentur,* young workers labour agency), which was created to respond flexibly to the specific needs of this group.

Enrico Marelli and Marcello Signorelli

Young People in Crisis Times: Comparative Evidence and Policies

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INTRODUCTION

Youth unemployment is a pathology that bears heavy economic, social and even political consequences. We can here recall three key empirical features: (i) youth unemployment rates (YUR) are generally higher than adult or total unemployment rates (UR); (ii) YUR are more sensitive than UR both to the business cycle, in particular to recessions, and to crisis episodes; (iii) there is great variation across European countries, in terms of both levels and dynamics of YUR.

A first evidence is that, also in normal times, YUR are much higher than UR in many countries. This fact has attracted a number of empirical investigations.[1] A key reason contributing to explain why YUR is higher than UR is that young people, despite possessing, on average, higher educational levels, are endowed with fewer skills, and are less experienced than their older peers. It seems that a key role is played by the educational systems, and the countries (like Germany and Austria) adopting a 'dual system' are able to favour a better school-to-work transition and lower YUR with respect to countries characterised by 'sequential systems' (Caroleo and Pastore 2007; Pastore 2015a).

The second empirical evidence is that, in the past decades, young people have been negatively affected, to a much greater extent, by financial and economic crises. This was found for many countries in the world but the crises' impact seems greater for developed countries; in the last decade it chiefly concerned several Eurozone countries. This is also related to the greater sensitivity of youth unemployment to cyclical conditions. In particular, according to recent empirical studies, there are two characteristics of the Great Recession that have been particularly detrimental to young people: the financial origin of the crisis[2] and the protracted recessions or stagnation, especially in Europe (e.g. Bruno *et al.* 2014a; Marelli *et al.* 2013; Marelli and Signorelli 2017). In fact, deep or repeated recessions followed by a long stagnation (or insufficient GDP growth) determine a lower average labour demand, particularly detrimental for young people, and favour a higher permanent unemployment as a result of a gradual transformation of a part of the cyclical unemployment into structural unemployment. So, in the first decade since the beginning of the financial crisis, youth unemployment has rapidly become a major concern of European policymakers.

YOUNG PEOPLE AND THE LABOUR MARKET: COMPARATIVE EMPIRICAL EVIDENCE

First of all, it should be noted that in most countries, youth unemployment refers to individuals aged 15–24 years, although other ages are sometimes considered. In addition, other indicators are often used; for example, the size of the group of youth left behind can be also proxied by the number of young people who are 'neither employed nor in education or training' (NEET).[3]

In the EU, particularly high YUR have been recorded in different regions: some Mediterranean countries (Spain, Italy, Greece), certain new EU member states (Hungary and Slovakia), but also some Northern countries (where YUR are not very high, but are much higher than UR). After the 2007–2008 financial crisis and the following recessions, the increase in the YUR has generally been larger than the rise in UR, confirming the greater sensitivity to the cycle; furthermore, the average duration of unemployment is also increasing.

Let us look at some recent data concerning youth unemployment and other labour market indicators for all individual EU countries. We now consider both youth unemployment rates and the ratios between such rates (YUR) and total unemployment rates (UR). In 2016 top YUR values (see Table 1) are recorded in Greece (47.3 percent), Spain (44.4 percent), Italy (40.3 percent in 2015), Croatia (31.1 percent), Cyprus (29.1 percent) and Portugal (28.2 percent). The only country exhibiting a YUR well below 10 percent is Germany (7.0 percent).[4]

The worst increases of YUR (in percentage points, p.p.), after the beginning of the crisis (2007) till the last available year (2016), were recorded in Spain (+ 26.3 p.p.),[5] Greece (+ 24.6 p.p.), Cyprus (+ 18.9 p.p.) and Italy (+ 14.9 p.p.), while the situation further improved in Germany (- 4.8 p.p.). In the last decade, due to the asymmetric effect of the crisis interacting with partly different policies, empirical estimations reveal in the case of YUR both sigma divergence (the degree of dispersion increased) and beta divergence (countries with the worst initial performance further worsened, in general, their outcomes).

[1] See Freeman and Wise (1982); Blanchflower and Freeman (2000); Ryan (2001); O'Higgins (2001); Hammer (2003); Quintini *et al.* (2007); Caroleo and Pastore (2007); Brada *et al.* (2014); Caroleo *et al.* (2017).

[2] Choudhry *et al.* (2012) showed that financial crises may continue to affect youth unemployment up to five years after their onset.

[3] See O'Higgins (2012) and Scarpetta *et al.* (2010).

[4] It should be noted that the unemployment rate indicator have some shortcomings, especially due to the difficulty to properly define 'active search for a job' as a necessary condition to be unemployed (versus inactivity or non-participation to the labour market). Another way to measure the weight of youth unemployment is to calculate it for the overall 15–24 population (in substitution of 15–24 labour force); in this case, for example, the rates in 2016 are 7.7 percent as for the EU as a whole and 14.7 percent for Spain, 11.7 percent for Greece and 10.6 percent (2015) for Italy.

[5] The increase of the YUR in Spain was much larger from 2007 (18.1 percent) to 2013 (55.5 percent), that is 37.4 p.p., in other words the YUR more than tripled in six years; then, the situation improved in the last three years. Notice that 2013 was the worst year – with top YUR values – for many EU countries, subsequently declining at different paces.

Table 1

Total 15–24 Youth Unemployment Rates (on Labour Force)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
European Union (28)	15.9	15.9	20.3	21.4	21.7	23.3	23.7	22.2	20.3	18.7
Euro area	15.6	16.1	20.5	21.1	21.2	23.5	24.4	23.8	22.4	20.9
Belgium	18.8	18.0	21.9	22.4	18.7	19.8	23.7	23.2	22.1	20.1
Bulgaria	14.1	11.9	15.1	21.9	25.0	28.1	28.4	23.8	21.6	17.2
Czech Republic	10.7	9.9	16.6	18.3	18.1	19.5	18.9	15.9	12.6	10.5
Denmark	7.5	8.0	11.8	13.9	14.2	14.1	13.0	12.6	10.8	12.0
Germany	11.8	10.4	11.1	9.8	8.5	8.0	7.8	7.7	7.2	7.0
Estonia	10.1	12.0	27.4	32.9	22.4	20.9	18.7	15.0	13.1	13.4
Ireland	9.1	13.3	24.0	27.6	29.1	30.4	26.8	23.9	20.9	17.2
Greece	22.7	21.9	25.7	33.0	44.7	55.3	58.3	52.4	49.8	47.3
Spain	18.1	24.5	37.7	41.5	46.2	52.9	55.5	53.2	48.3	44.4
France	19.5	19.0	23.6	23.3	22.7	24.4	24.9	24.2	24.7	24.6
Croatia	25.4	23.6	25.4	32.3	36.6	42.2	49.9	44.9	42.3	31.1
Italy	20.4	21.2	25.3	27.9	29.2	35.3	40.0	42.7	40.3	–
Cyprus	10.2	9.0	13.8	16.6	22.4	27.7	38.9	36.0	32.8	29.1
Latvia	10.6	13.6	33.3	36.2	31.0	28.5	23.2	19.6	16.3	17.3
Lithuania	8.4	13.3	29.6	35.7	32.6	26.7	21.9	19.3	16.3	14.5
Luxembourg	15.6	17.3	16.5	15.8	16.4	18.0	16.9	22.3	16.6	19.2
Hungary	18.1	19.5	26.4	26.4	26.0	28.2	26.6	20.4	17.3	12.9
Malta	13.5	11.7	14.5	13.2	13.3	14.1	13.0	11.7	11.8	11.1
Netherlands	9.4	8.6	10.2	11.1	10.0	11.7	13.2	12.7	11.3	10.8
Austria	9.4	8.5	10.7	9.5	8.9	9.4	9.7	10.3	10.6	11.2
Poland	21.6	17.2	20.6	23.7	25.8	26.5	27.3	23.9	20.8	17.7
Portugal	21.4	21.6	25.3	28.2	30.2	38.0	38.1	34.7	32.0	28.2
Romania	19.3	17.6	20.0	22.1	23.9	22.6	23.7	24.0	21.7	20.6
Slovenia	10.1	10.4	13.6	14.7	15.7	20.6	21.6	20.2	16.3	15.2
Slovakia	20.6	19.3	27.6	33.9	33.7	34.0	33.7	29.7	26.5	22.2
Finland	16.5	16.5	21.5	21.4	20.1	19.0	19.9	20.5	22.4	20.1
Sweden	19.2	20.2	25.0	24.8	22.8	23.7	23.6	22.9	20.4	18.9
United Kingdom	14.3	15.0	19.1	19.9	21.3	21.2	20.7	17.0	14.6	13.0
United States	10.5	12.8	17.6	18.4	17.3	16.2	15.5	13.4	11.6	10.4
Japan	7.7	7.3	9.3	9.5	8.3	8.2	6.8	6.2	5.5	5.1

Source: Eurostat.

The relative disadvantage of young people compared to the total population slightly increased in many of the mentioned countries (with high YUR) in the period 2007–2016, as shown by the ratios between YUR and UR (see Table 2). However, in the EU as a whole the ratio remained quite stable, near 2.2. A dire position for young people can be detected, just looking at the final values (2016), in countries such as Romania (3.5), Italy (3.4 in 2015), Poland (2.9), but also Sweden and the United Kingdom (2.7) and Belgium and Czech Republic (2.6).

Thus, a first conclusion is that the relative position of young people is bad in two types of countries: (i) countries where mostly adverse economic (both structural and cyclical) conditions, especially after the recent crises, are reflected in high unemployment rates, UR and even more YUR (countries like Greece, Spain, Italy, etc.); (ii) countries that, despite the generally better economic conditions, are characterised by institutional features that are not particularly favourable to young people (countries like Britain, Sweden, Belgium, Poland, etc.).

It is also interesting to note that, while before the crisis, in 2007–2008, in the EU as a whole the female YUR was slightly higher than the male one,[6] the crisis mainly reduced the labour demand in sectors with a traditionally higher presence of male employment (e.g. manufacturing and construction); hence in 2016 YUR of males (19.4 percent) was greater than that for females (17.9 percent). The higher YUR for males is a widespread phenomenon, common to most EU countries (and also to the United States and Japan). The largest difference is recorded in Latvia: 21.4 percent for males vs. 12.1 percent for females. Only in seven EU countries is the female rate appreciably higher than the male one (Croatia, Cyprus, Czech Republic, Greece, Italy, Romania, Slovakia); in two countries the male rate is marginally higher (Poland and Spain) and in Hungary the two rates are the same.

In addition to unemployment, another important labour market indicator is the employment rate. In fact, the EU institutions have included the employment rate in the policy agenda, initially in the Lisbon Strategy of 2000 and more recently in the 'Europe 2020' plan, launched in 2010: 75 percent of employment is the target for people of 20–64 years; there is no specific target for young people. Despite huge variations across the EU countries, the employment rates were generally increasing and converging before the crisis (until 2007–2008). Since then there has been a widespread reduction and a new divergence. The variation within the EU is large for youth employment rates (Table 3).

In 2015, the total rate for the 15–24 years age cohort was 33.0 percent in the EU and 30.7 percent in the Euro-

[6] Detailed tables by gender and short comments are available upon request.

Table 2

Ratios between YUR (15–24) and UR (15–74)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
European Union (28)	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2
Euro area	2.1	2.1	2.2	2.1	2.1	2.1	2.0	2.1	2.1	2.1
Belgium	2.5	2.6	2.8	2.7	2.6	2.6	2.8	2.7	2.6	2.6
Bulgaria	2.0	2.1	2.2	2.1	2.2	2.3	2.2	2.1	2.3	2.3
Czech Republic	2.0	2.3	2.5	2.5	2.7	2.8	2.7	2.6	2.5	2.6
Denmark	2.0	2.4	2.0	1.9	1.9	1.9	1.9	1.9	1.7	1.9
Germany	1.4	1.4	1.5	1.4	1.5	1.5	1.5	1.5	1.6	1.7
Estonia	2.2	2.2	2.0	2.0	1.8	2.1	2.2	2.0	2.1	2.0
Ireland	1.9	2.1	2.0	2.0	2.0	2.1	2.0	2.1	2.2	2.2
Greece	2.7	2.8	2.7	2.6	2.5	2.3	2.1	2.0	2.0	2.0
Spain	2.2	2.2	2.1	2.1	2.2	2.1	2.1	2.2	2.2	2.3
France	2.4	2.6	2.6	2.5	2.5	2.5	2.4	2.3	2.4	2.4
Croatia	2.6	2.7	2.7	2.7	2.7	2.7	2.9	2.6	2.6	2.3
Italy	3.3	3.2	3.3	3.3	3.5	3.3	3.3	3.4	3.4	–
Cyprus	2.6	2.4	2.6	2.6	2.8	2.3	2.4	2.2	2.2	2.2
Latvia	1.7	1.8	1.9	1.9	1.9	1.9	1.9	1.8	1.6	1.8
Lithuania	2.0	2.3	2.1	2.0	2.1	2.0	1.9	1.8	1.8	1.8
Luxembourg	3.7	3.5	3.2	3.4	3.4	3.5	2.9	3.7	2.6	3.0
Hungary	2.4	2.5	2.6	2.4	2.4	2.6	2.6	2.6	2.5	2.5
Malta	2.1	2.0	2.1	1.9	2.1	2.2	2.0	2.0	2.2	2.4
Netherlands	2.2	2.3	2.3	2.2	2.0	2.0	1.8	1.7	1.6	1.8
Austria	1.9	2.1	2.0	2.0	1.9	1.9	1.8	1.8	1.9	1.9
Poland	2.3	2.4	2.5	2.4	2.7	2.6	2.7	2.7	2.8	2.9
Portugal	2.4	2.5	2.4	2.4	2.3	2.4	2.3	2.5	2.5	2.5
Romania	3.0	3.1	3.1	3.2	3.3	3.3	3.3	3.5	3.2	3.5
Slovenia	2.1	2.4	2.3	2.0	1.9	2.3	2.1	2.1	1.8	1.9
Slovakia	1.8	2.0	2.3	2.3	2.5	2.4	2.4	2.3	2.3	2.3
Finland	2.4	2.6	2.6	2.5	2.6	2.5	2.4	2.4	2.4	2.3
Sweden	3.1	3.3	3.0	2.9	2.9	3.0	3.0	2.9	2.8	2.7
United Kingdom	2.7	2.7	2.5	2.6	2.6	2.7	2.7	2.8	2.8	2.7
United States	2.3	2.2	1.9	1.9	1.9	2.0	2.1	2.2	2.2	2.1
Japan	2.0	1.8	1.8	1.9	1.8	1.9	1.7	1.7	1.6	1.6

Source: Eurostat.

zone. Much higher values are found in Northern and Central Europe countries: the Netherlands (60.8 percent),[7] Denmark (55.4 percent), Austria (51.3 percent); in contrast, the lowest figures are recorded in Greece (13.0 percent), Italy (15.6 percent), Spain (17.9 percent), Croatia (19.1 percent). Notice that the average EU youth employment rate in 2015 was more than 4 percentage points (p.p.) below the pre-crisis level. The reduction (2015 vs. 2007) has been huge in Ireland (– 22 p.p.), Spain (– 21 p.p.), Greece (– 11 p.p.), Italy (– 9 p.p.). With reference to NEET rates (Table 4), for the 15–24 cohort the average rate increased slightly from 2007 to 2015 in the EU (from 11.0 percent to 12.0 percent).[8]

In 2015 the best performance is shown by countries such as the Netherlands (4.7 percent), Denmark, Luxembourg and Germany (6.2 percent), while high values are recorded in Italy (21.4 percent), Bulgaria (19.3 percent), Croatia (18.5 percent), Romania (18.1 percent), Greece (17.2 percent) and Spain (15.6 percent); in almost all countries, but Germany, the NEET rates increased with respect to pre-crisis levels. In the age class 25-29 years (not shown in the table), the NEET rates in 2015 reach top figures as high as 36.2 percent in Greece, 33.5 percent in Italy, 26.5 percent in Bulgaria, 26.0 percent in Spain, 23.2 percent in Croatia and 22.8 percent in Slovakia. These figures testify the waste of human resources that has become a big social problem, especially after the last crises.

A major problem with YUR is that they tend to persist over time. The social implication is dreadful: many studies have shown that the risk of poverty is high when one of the parents is unemployed, and such risk increases with the length of unemployment conditions.

Considering long-term unemployment (longer than 12 months) as a percentage of the labour force (LTYUR), we find very high values for the young cohorts (15–24 and 25–29) and a significant increase during the crisis years (Table 5). In 2015, LTYUR was particularly high in Greece (28.0 percent the total rate for 15–24 years), Italy (22.0 percent), Croatia (20.2 percent), Spain (16.9 percent), Slovakia (14.4 percent) as compared to the average EU figures (6.5 percent). Very low LTYUR for young people are recorded in Denmark (0.9 percent), Sweden (1.2 percent), Germany (1.6 percent), Finland and Austria (1.7 percent each).

Finally, we observe that also when the youth are able to find a job, in many cases this is a temporary, low-quality, poorly remunerated and – in general –

[7] In this country (and to a smaller extent in some others) the high incidence of part-time work favours the high employment of young people, who frequently are students and workers at the same time.

[8] A much higher increase was recorded for the age class 25–29 (from 17.2 percent to 19.7 percent).

Table 3

Total Youth Employment Rate (15–24 Years)

	2007	2008	2009	2010	2011	2012	2013	2014	2015
European Union (28)	37.2	37.3	34.8	33.8	33.3	32.5	32.1	32.4	33.0
Euro area (19)	37.5	37.3	34.7	33.3	32.9	31.6	30.9	30.6	30.7
Belgium	27.5	27.4	25.3	25.2	26.0	25.3	23.6	23.2	23.4
Bulgaria	24.5	26.3	24.8	24.3	22.1	21.9	21.2	20.7	20.3
Czech Republic	28.5	28.1	26.5	25.2	24.5	25.2	25.6	27.1	28.4
Denmark	65.3	66.4	62.5	58.1	57.5	55.0	53.7	53.7	55.4
Germany	45.4	46.6	46.0	46.2	47.9	46.6	46.9	46.1	45.3
Estonia	34.1	35.9	28.3	25.3	31.1	32.3	32.4	33.3	36.3
Ireland	51.0	46.2	36.9	31.5	29.5	28.2	29.0	28.4	28.7
Greece	24.0	23.5	22.8	20.1	16.1	13.0	11.8	13.3	13.0
Spain	39.2	36.0	28.0	25.0	22.0	18.4	16.8	16.7	17.9
France	31.2	31.4	30.5	30.1	29.6	28.6	28.4	28.0	27.9
Croatia	27.4	28.0	27.1	24.2	20.6	17.4	14.9	18.3	19.1
Italy	24.5	24.2	21.5	20.2	19.2	18.5	16.3	15.6	15.6
Cyprus	37.4	38.0	34.8	33.8	30.1	28.1	23.5	25.8	25.5
Latvia	38.1	37.0	27.5	25.4	25.8	28.7	30.2	32.5	34.5
Lithuania	24.8	26.0	20.6	18.3	19.0	21.5	24.6	27.6	28.3
Luxembourg	22.5	23.8	26.7	21.2	20.7	21.7	21.9	20.4	29.1
Hungary	21.1	20.2	18.1	18.3	18.0	18.4	20.1	23.5	25.7
Malta	46.8	46.6	44.1	44.2	45.0	43.8	46.0	46.2	45.5
Netherlands	68.4	69.3	68.0	63.0	61.3	61.1	60.1	58.8	60.8
Austria	53.8	54.4	53.1	52.8	53.9	53.7	53.1	52.1	51.3
Poland	25.8	27.3	26.8	26.4	24.9	24.7	24.2	25.8	26.0
Portugal	34.4	34.1	30.8	27.9	26.6	23.0	21.7	22.4	22.8
Romania	24.4	24.8	24.5	24.3	23.4	23.7	22.9	22.5	24.5
Slovenia	37.6	38.4	35.3	34.1	31.5	27.3	26.5	26.8	29.6
Slovakia	27.6	26.2	22.8	20.6	20.0	20.1	20.4	21.8	23.3
Finland	44.6	44.7	39.6	38.8	40.4	41.8	41.5	41.4	40.5
Sweden	42.2	42.2	38.3	38.8	40.9	40.2	41.7	42.8	43.9
United Kingdom	52.6	52.0	47.9	46.8	45.8	46.2	46.3	48.0	50.1

Source: Eurostat.

'precarious' job. Despite generally high education levels, social mobility is impaired by the difficulty in finding stable jobs (see Marelli and Signorelli 2016).[9]

YOUTH UNEMPLOYMENT: KEY DETERMINANTS AND FEATURES

The theories concerning youth unemployment are part of the broader theories explaining unemployment in general (see Marelli *et al.* 2013). A first group of causes includes macroeconomic cyclical conditions. Most empirical studies have confirmed the greater cyclical sensitivity of YUR compared to UR,[10] the reasons may be different (lower qualifications, less experience, etc.) but the weaker work contracts, more dominant among young workers than among older workers, are a key explanation. The relative position of young people is worse also with reference to other labour market indicators; Bruno *et al.* (2014b) found that not only the YUR but also the NEET rates are highly sensitive to the cycle.

Also notice that during bad cyclical conditions, the 'discouraged worker hypothesis' explains why YUR may not increase immediately, mainly because of temporarily falling participation rates;[11] thus they tend to increase only when the recession endures and subsequently they remain high for a long time. In many empirical investigations, YUR turn out to be more persistent (than UR) over time. For example, Caporale and Gil-Alana (2014) found that youth unemployment is highly persistent in all the 15 European countries examined from 1980 to 2005. High persistence of YUR has been discovered also by Bruno *et al.* (2017). Persistence has been found also for other indicators, such as the NEET; however it varies across countries and over time. Bruno *et al.* (2014b) detected, in a disaggregate analysis at the regional level, an increased persistence over the crisis period (2009–2010) but jointly with a lower sensitivity to GDP during the same period; the latter result is driven by the predominance of Continental, mainly German, regions (out of the five regional groups considered) in the estimation sample.

Cultural, social and institutional variables comprise a second group of determinants of YUR. Social variables include the role of the family, ties with parents and barriers to regional mobility. A point to be stressed, however, is that although it is true that in some cases in Mediterranean countries youngsters

[9] Restraints to social mobility also matches with low geographical mobility. It is true that labour mobility of educated people has recently increased across European countries (e.g. young graduates of Southern Europe moving to Germany or Northern countries), but this corresponds to a waste of resources for the sending country.

[10] In fact, in most empirical studies, Okun's coefficients are found to be higher for young people. See for example Hutengs and Stadtmann (2014) who compute age-cohort and gender-specific Okun coefficients. The absolute value of the Okun coefficient decreases with age, and the highest impact of GDP is detected for the youngest cohort (15–24 years). Furthermore, the YUR of men react more strongly to changes in GDP, because males are predominantly employed in more cyclical sectors than are females.

[11] Young people, in particular, may decide to remain in, or even return to, education during recessions (Kelly *et al.* 2014).

Table 4

NEET Rates (15–24)

	2007	2008	2009	2010	2011	2012	2013	2014	2015
European Union (28)	11.0	10.9	12.4	12.8	12.9	13.2	13.0	12.5	12.0
Euro area	10.8	11.0	12.6	12.8	12.7	13.1	12.9	12.6	12.2
Belgium	11.2	10.1	11.1	10.9	11.8	12.3	12.7	12.0	12.2
Bulgaria	19.1	17.4	19.5	21.0	21.8	21.5	21.6	20.2	19.3
Czech Republic	6.9	6.7	8.5	8.8	8.3	8.9	9.1	8.1	7.5
Denmark	4.3	4.3	5.4	6.0	6.3	6.6	6.0	5.8	6.2
Germany	8.9	8.4	8.8	8.3	7.5	7.1	6.3	6.4	6.2
Estonia	8.9	8.7	14.5	14.0	11.6	12.2	11.3	11.7	10.8
Ireland	10.8	15.0	18.6	19.2	18.8	18.7	16.1	15.2	14.3
Greece	11.3	11.4	12.4	14.8	17.4	20.2	20.4	19.1	17.2
Spain	12.0	14.3	18.1	17.8	18.2	18.6	18.6	17.1	15.6
France	10.7	10.5	12.7	12.7	12.3	12.5	11.2	11.4	12.0
Croatia	12.9	11.6	13.4	15.7	16.2	16.6	19.6	19.3	18.5
Italy	16.1	16.6	17.6	19.0	19.7	21.0	22.2	22.1	21.4
Cyprus	9.0	9.7	9.9	11.7	14.6	16.0	18.7	17.0	15.3
Latvia	11.9	11.8	17.5	17.8	16.0	14.9	13.0	12.0	10.5
Lithuania	7.1	8.8	12.1	13.2	11.8	11.2	11.1	9.9	9.2
Luxembourg	5.7	6.2	5.8	5.1	4.7	5.9	5.0	6.3	6.2
Hungary	11.5	11.5	13.6	12.6	13.2	14.8	15.5	13.6	11.6
Malta	11.5	8.3	9.9	9.5	10.2	10.6	9.9	10.5	10.4
Netherlands	3.5	3.4	4.1	4.3	4.3	4.9	5.6	5.5	4.7
Austria	7.4	7.4	8.2	7.4	7.3	6.8	7.3	7.7	7.5
Poland	10.6	9.0	10.1	10.8	11.5	11.8	12.2	12.0	11.0
Portugal	11.2	10.2	11.2	11.4	12.6	13.9	14.1	12.3	11.3
Romania	13.3	11.6	13.9	16.6	17.5	16.8	17.0	17.0	18.1
Slovenia	6.7	6.5	7.5	7.1	7.1	9.3	9.2	9.4	9.5
Slovakia	12.5	11.1	12.5	14.1	13.8	13.8	13.7	12.8	13.7
Finland	7.0	7.8	9.9	9.0	8.4	8.6	9.3	10.2	10.6
Sweden	7.5	7.8	9.6	7.7	7.5	7.8	7.5	7.2	6.7
United Kingdom	11.9	12.1	13.2	13.6	14.2	13.9	13.2	11.9	11.1

Source: Eurostat.

and even young adults prefer to live with their parents, thus perhaps not actively searching for a job, in many real world situations the opposite is true: it is the impossibility or the low probability of finding a (stable) job that compels young people to live with their parents for a long time.[12]

As for the institutional determinants with particular reference to the labour market institutions, they are relevant for both youth unemployment and unemployment in general.[13] The common result of empirical studies is that employment protection legislation affects worker turnover and duration of unemployment more than they do the unemployment level; consequently such regulations are more significant for younger than for older people. Nevertheless, some other institutions are relevant for youth unemployment, for instance the education system and the school-to-work transition (STWT) processes (Quintini *et al.* 2007). We have already mentioned the German and Austrian cases regarding the importance of the dual educational system; in fact, a well-organized apprenticeship is probably the best way to reduce the youth experience gap and improve the employability of young people. Another possible cause of high youth unemployment and low quality employment is the mismatch between the knowledge acquired through formal education and the skills required by the labour market.

At any rate, long unemployment periods are a serious problem, since they not only erode human capital, but also prevent the accumulation of work experience, producing negative effects on lifetime income and career possibilities. Even more worrying, they raise the risk of young people being excluded from the labour market for the long term (Bell and Blanchflower 2011), leading to a 'lost generation' of people who never enter the labour market (Scarpetta *et al.* 2010).

CONCLUSIONS AND POLICY IMPLICATIONS

A first consideration is that, in Europe, labour markets have become increasingly 'flexible' in the last quarter century, but this was not enough to significantly reduce the unemployment rate that has soared after the severe economic crises. This is worrying, since not only is unemployment a waste of productive resources but, through the loss of human capital, it also dampens long-run growth and also threatens social cohesion. Within the labour market, young workers especially have been injured and the unemployment risk – as we have seen – is persistently higher among the young cohorts.

[12] The decision of unemployed young people to progressively postpone marriage or the decision to leave the parents' home – not only until the age of 24 but in many cases up to 29 or even 34 years – has negative effects on birth rates too.

[13] According to OECD (2006), almost two-thirds of non-cyclical unemployment changes over time are explained by changes in such variables.

Table 5

Youth Long Term Unemployment Rates (15–24)

	2007	2008	2009	2010	2011	2012	2013	2014	2015
European Union (28)	4.0	3.5	4.6	6.0	6.5	7.5	8.0	7.8	6.5
Euro area	3.9	3.6	5.0	6.5	6.8	8.0	8.8	9.2	7.9
Belgium	5.6	4.9	5.7	6.7	6.0	5.8	7.3	8.0	7.9
Bulgaria	6.3	5.0	5.2	8.9	12.1	13.8	13.2	11.7	11.1
Czech Republic	3.5	3.1	3.3	5.8	5.3	6.5	6.2	4.4	3.8
Denmark	–	–	–	0.9	1.4	1.3	1.3	1.1	0.9
Germany	3.7	3.0	3.0	2.6	2.0	1.9	1.8	1.8	1.6
Estonia	3.1	2.9	7.0	12.2	8.8	6.2	6.5	4.4	2.0
Ireland	1.9	2.5	6.1	11.5	13.4	14.5	10.9	9.2	7.8
Greece	9.4	7.8	7.9	11.7	18.9	27.1	30.3	31.5	28.0
Spain	1.8	2.5	6.9	12.1	15.0	18.9	21.9	21.5	16.9
France	4.4	4.3	5.8	6.6	6.0	6.5	6.5	7.2	7.0
Croatia	11.6	10.5	11.0	16.0	19.9	23.2	25.3	22.6	20.2
Italy	8.2	8.0	10.1	12.3	13.7	17.3	21.0	25.1	22.0
Cyprus	2.4	–	1.3	2.8	3.9	6.9	12.7	10.7	8.0
Latvia	1.2	1.8	6.9	12.0	10.2	8.9	6.8	4.7	4.4
Lithuania	–	–	5.2	10.8	11.1	6.8	4.4	4.4	–
Luxembourg	–	3.9	–	3.7	3.8	3.6	3.6	–	–
Hungary	6.5	6.2	7.8	10.3	9.3	9.1	8.6	6.7	4.6
Malta	3.7	3.2	4.5	3.9	4.1	4.5	3.2	3.2	3.5
Netherlands	0.7	0.5	0.7	1.0	1.3	1.5	2.2	2.3	2.0
Austria	1.3	1.2	1.4	1.6	1.3	1.4	1.4	1.4	1.7
Poland	7.5	3.8	4.4	4.8	6.8	8.0	8.7	7.4	6.1
Portugal	4.6	4.2	5.4	6.9	8.0	11.7	13.8	12.6	9.9
Romania	9.7	8.1	6.1	7.2	9.5	9.4	9.0	8.7	8.1
Slovenia	3.0	2.1	2.8	4.9	5.5	6.6	8.5	7.6	5.8
Slovakia	11.6	10.0	11.4	18.4	18.2	19.2	20.6	17.0	14.4
Finland	0.9	–	1.0	1.6	1.0	0.9	1.0	1.0	1.7
Sweden	0.7	0.7	1.1	1.7	1.5	1.6	1.5	1.3	1.2
United Kingdom	2.2	2.4	3.6	4.7	5.2	5.8	5.9	4.7	3.2

Source: Eurostat.

To identify appropriate economic policies to deal with this problem, we recall the importance of the linkage between output and unemployment together with the higher sensitivity of youth unemployment to overall macroeconomic conditions. In fact, the great economic shocks occurred in the last decade – the financial crisis with the Great Recession followed by the sovereign debt crisis – as well as the austerity measures imposed by EU institutions, in particular to the Eurozone countries, had a huge impact on youth unemployment. The consequences have been heavier in the peripheral European countries most affected by the crises; those countries had already suffered because of severe structural problems even before, but were disproportionately injured by the crises. The clear conclusion is that, in addition to the needed reforms in the institutional governance of the EU, macroeconomic policies should become more expansionary: not only monetary policy – as already occurred in the most recent years – but also fiscal policies, especially increasing public investment.[14]

Provided that YUR have become, over time, persistent, also structural policies are needed, including effective active[15] and passive[16] labour policies. In addition, adequate school-to-work transition institutions as well as innovative educational, placement and training schemes are fundamental to decrease the number of young people losing effective contact with the labour market, thus permanently damaging their employment prospects. Specific labour market programmes are important to enable youth to acquire the skills and competencies required by the new economic sectors and professional activities. As to the education systems, in addition to a diffusion of the 'dual system', policies should facilitate moving students from lower secondary school to intermediate and advanced vocational training and third-level education (while paying attention to the risks of bad matching or over-education).[17]

Innovative instruments, suggested by the best European practices, and creative experiments should be adopted by all countries, hopefully with effective support from the EU institutions. These measures could halt the rising 'intergenerational inequality' and reduce the large differences in age-specific unemployment rates. In any case, a drop in the huge YUR, especially long term, should be at the first place on the agenda of policymakers, in view of its economic, social and even political costs.

[14] As for the key causes of the Eurozone crisis, the necessary institutional reforms and innovative economic policies, see Marelli and Signorelli (2017).

[15] Whenever possible, active labour market policies should aim at preventing short-term unemployment from becoming structural or long-term. Regarding the recent EU's experiment with the so-called 'youth guarantee', see Pastore (2015b).

[16] Recent proposals have been made to adopt an unemployment insurance scheme at the EU level. This adoption could be a concrete step toward further integration, precisely to hinder the nationalist and populist movements, partly boosted by the 'wrong' economic policies followed by the EU. In any case, the social dimension has been emphasised also in the recent Rome declaration (25 March 2017, the day of the 60th Anniversary of the Treaty of Rome).

[17] See Caroleo and Pastore (2017).

REFERENCES

Brada, J.C., E. Marelli and M. Signorelli (2014), "Young People and the Labor Market: Key Determinants and New Evidences", *Comparative Economic Studies* 56, 556–566.

Bell, D.N.F and D.G. Blanchflower (2011), "Youth Unemployment in Europe and the United States", *Nordic Economic Policy Review* 1, 11–37.

Blanchflower, D.G. and R. Freeman (eds. 2000), Youth Employment and Joblessness, Chicago: University of Chicago Press.

Bruno, G.S.F, M. Choudhry, E. Marelli and M. Signorelli (2014a), "Youth Unemployment: Key Determinants and the Impact of Crises", in: Malo, M.A. and D. Sciulli (eds.), *Disadvantaged Workers: Empirical Evidence and Labour Policies*, Berlin-Heidelberg: Springer, 121–148.

Bruno, G.S.F., E. Marelli and M. Signorelli (2014b), "The Rise of NEET and Youth Unemployment in EU Regions after the Crisis", *Comparative Economic Studies* 56, 592–615.

Bruno, G., M. Choudhry, E. Marelli and M. Signorelli (2017), "The Short- and Long-Run Impacts of Financial Crises on Youth Unemployment in OECD", *Applied Economics*, forthcoming.

Caporale, G.M. and L. Gil-Alana (2014), "Youth Unemployment in Europe: Persistence and Macroeconomic Determinants", *Comparative Economic Studies* 56, 581-591.

Caroleo, F.E., O. Demidova, E. Marelli and M. Signorelli (eds. 2017), *Young People and the Labour Market: A Comparative Perspective*, Abingdon: Routledge, forthcoming.

Caroleo, F.E. and F. Pastore (2007), *The Youth Experience Gap: Explaining Differences across EU Countries*, Quaderni del Dipartimento di Economia, Finanza e Statistica 41, University of Perugia.

Caroleo, F.E. and F. Pastore (2017), *Overeducation at a Glance: Determinants and Wage Effects of the Educational Mismatch, Looking at the Alma Laurea Data*, IZA Discussion Papers 77–88.

Choudhry, M.T., E. Marelli and M. Signorelli (2012), "Youth Unemployment Rate and Impact of Financial Crises", *International Journal of Manpower* 33, 76–95.

Freeman, R. and D. Wise (1982), The Youth Labor Market Problem: Its Nature, Causes and Consequences, Chicago: University of Chicago Press.

Hammer, T. (2003), *Youth Unemployment and Social Exclusion in Europe*, Bristol: Policy Press.

Hutengs, O. and G. Stadtmann (2014), "Youth and Gender Specific Unemployment and Okun's Law in Scandinavian Countries", *Comparative Economic Studies* 56, 567–580.

Kelly, E., S. McGuinness, P. O'Connell, D. Haugh and A. González Pandiella (2014), "Transitions in and out of Unemployment among Young People in the Irish Recession", *Comparative Economic Studies* 56, 616–634.

Marelli, E., M.T. Choudhry and M. Signorelli (2013), "Youth and the Total Unemployment Rate: The Impact of Policies and Institutions", *Rivista internazionale di scienze sociali* 121, 63–86.

Marelli E. and M. Signorelli (2016), "Youth Unemployment and the Disadvantages of the Young in the Labour Market", in: Fadda, S. and P. Tridico (eds.), *Varieties of Economic Inequality*, Abingdon: Routledge.

Marelli, E. and M. Signorelli (2017), *Europe and the Euro – Integration, Crisis and Policies*, London and New York: Palgrave.

OECD (2006), *Employment Outlook*, Paris.

O'Higgins, N. (2001), *Youth Unemployment and Employment Policy: A Global Perspective*, ILO, Geneva.

O'Higgins, N. (2012), "This Time It's Different? Youth Labor Markets during 'the Great Recession'", *Comparative Economic Studies* 54, 395–412.

Quintini, G, J.P. Martin and S. Marti, (2007), *The Changing Nature of the School-to-Work Transition Process in OECD Countries*, IZA Discussion Paper 2582.

Pastore, F. (2015a), *The Youth Experience Gap. Explaining National Differences in the School-to-Work Transition*, Heidelberg: Physica Verlag.

Pastore, F. (2015b), *The European Youth Guarantee: Labor Market Context, Conditions and Opportunities in Italy*, IZA Journal of European Labor Studies 4.

Ryan, P. (2001), "The School-to-Work Transition: A Cross-National Perspective", *Journal of Economic Literature* 39, 34–92.

Scarpetta, S., A. Sonnet and T. Manfredi (2010), *Rising Youth Unemployment during the Crisis: How to Prevent Negative Long-Term Consequences on a Generation?*, OECD Social, Employment and Migration Working Papers 6.

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Getting It Right: Youth Employment Policy within the EU

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INTRODUCTION

This essay aims at assessing the employment and education policy implemented in EU countries to address youth unemployment, perhaps the most important social problem of the EU. It seeks to provide an overall evaluation of a number of interventions which have been implemented in various EU countries in this field.

For the sake of brevity, in several points, the essay follows Pastore's (2015a) suggestion according to which school-to-work transition (SWT) regimes overlap to welfare state regimes in such a way to form something similar to the Esping-Andersen (1990) classification. Each regime is different from the others in the way it addresses the youth experience gap, namely the lack of general and job specific work experience, the only component of human capital able to generate work related skills. Within the EU 5 different SWT regimes can be detected: a) 'Continental European'; b) 'Scandinavian'; c) 'Liberal'; d) 'Mediterranean European'; e) 'Post-communist'. This is the traditional Esping-Andersen's classification, plus the so-called Latin Rim and the new EU member states. For each regime, we consider the case of a specific country assumed to be the most representative one of that SWT regime, namely: Germany, Sweden, Britain, Italy (or Spain), Poland, respectively. Each regime is featured by a specific strategy for reducing the youth experience gap: a) the dual system in Central-European countries; b) active labour market policy in the Scandinavian regime, where the Youth Guarantee has been introduced; c) high quality education and flexible labour market in the Anglo-Saxon countries; d) temporary work and family help in the Latin Rim. The post-communist regime swings between strong labour protection and new employment policy.

The outline of the essay is as follows. The first section lists some stylised facts regarding youth unemployment within the EU, followed by the second section which addresses the macroeconomic constraints imposed by the Maastricht Treaty and the so-called Fiscal Compact to the effort of peripheral countries in reaching the Europe 2020 pre-conditions for economic growth. The third section discusses the possible objectives and tools of educational reforms. Attention is lent also to the European Youth Guarantee (EYG). Some concluding remarks follow.

STYLISED FACTS

As shown in Figure 1, everywhere within the EU, the youth unemployment rate is higher than that of adults. There are only few exceptions, notably Austria, Germany and a few other Anglo-Saxon countries which tend to behave differently according to the SWT regime they belong to. Pastore and Giuliani (2015) show that the best performing countries are the Anglo-Saxon countries and the Central-European countries. Both had a lower youth unemployment rate throughout the economic and financial crisis, but the Anglo-Saxon countries, with their more flexible labour markets worsen their labour market performance more readily during economic crises and are better at improving it when the crisis comes to an end. Instead, Central European countries, although having on average a higher average unemployment rate, nonetheless discriminate less against young people based on their age and are much less sensitive to business cycle fluctuations.

Being sensitive to the business cycle is positive according to the liberal view, since it is accompanied by creative destruction, but it still involves greater individual and social costs. Besides, Central European countries are also endowed with better social security provisions to help the unemployed and their families to cushion against the crisis.

An indicator that is less affected by the business cycle is the relative disadvantage of young people, as measured by their ratio to that of the adults' unemployment rate. Figure 2 shows a long time series of this indicator for countries representing different SWT regimes. Interestingly, the best performing country is Germany where the ratio fluctuates around the value of one, meaning equal distress for young and adult people. This is the sign of specific labour market and, above all, education institutions which are able to protect young people from the hardship of the business cycle (for a recent assessment, see the contributions included in Caroleo *et al.* 2017).

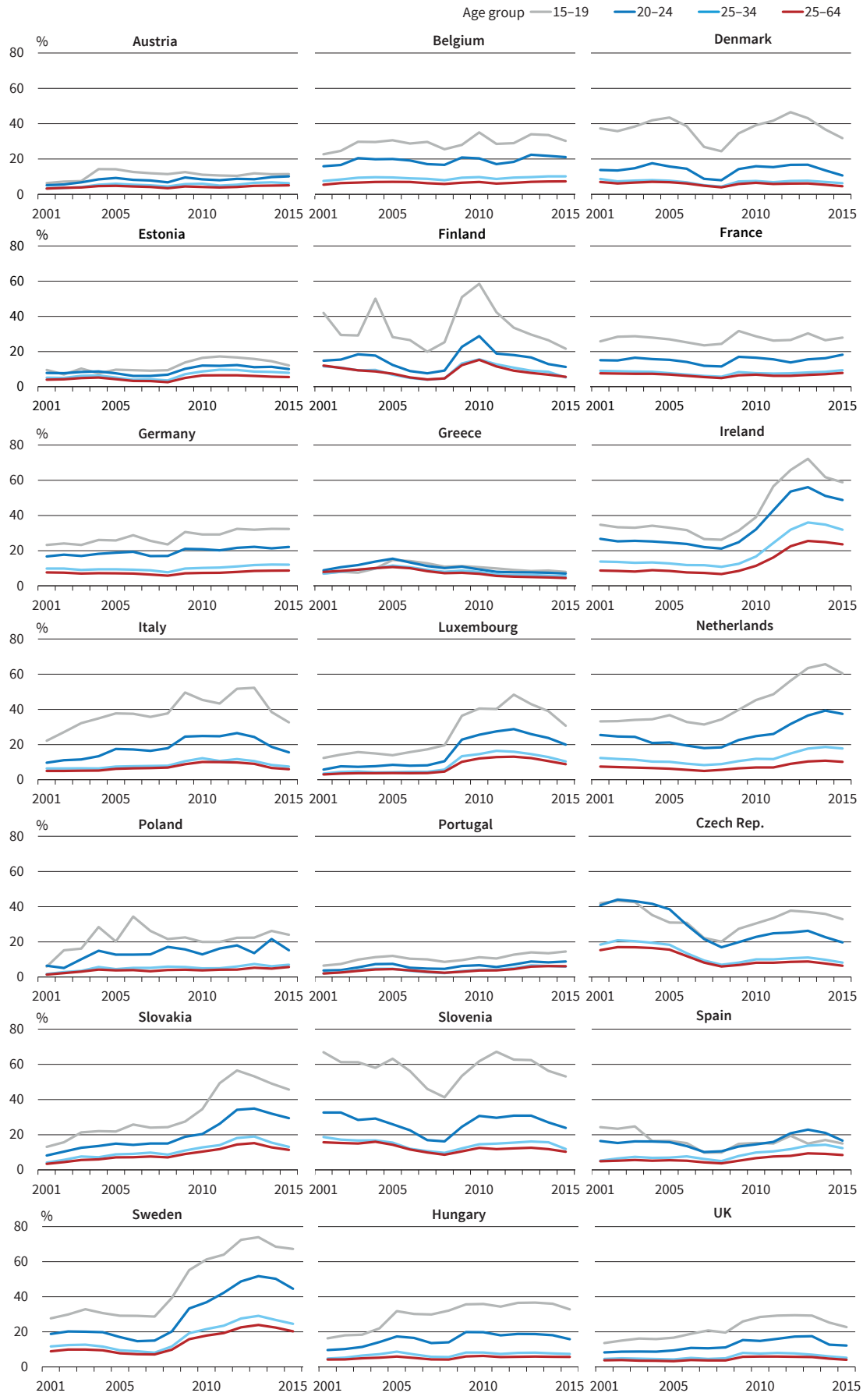
Figure 2 also shows that cross-country differences in the relative disadvantage are quite stable reflecting institutional differences in the school-to-work transition regime. The latter include all the institutions that govern the transition, from the education institutions, to the degree of employment protection in the labour market, the employment services, and the family. These institutions and the rules on which they act affect the relative success of young people at the labour market.

The recent reforms of the labour market have followed the two-tier scheme, with declining hiring and firing costs only at the margin for the new entrants into the labour market. Instead, the typical labour contract has remained full-time and permanent with strong protection against individual and collective dismissals. It is only in recent years that some especially South European countries have increased the cost of temporary

Figure 1

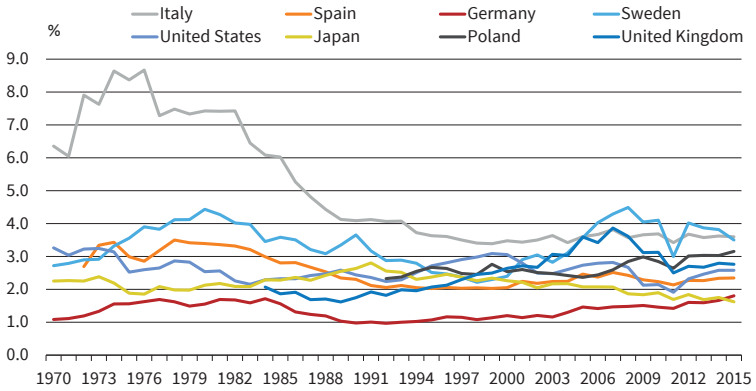
Unemployment Rate by Age Groups in Selected Countries

2001–2015



Source: OECD.

Figure 2
Ratio of Youth to Adult Unemployment Rates in Selected Countries, 1970–2015



Source: OECD.

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workers in terms of social security contributions and costs of dismissals. At the same time, the most recent reforms have reduced and, above all, defined the exact amount of severance pay based on the actual length of jobs in cases of firing for economic reasons. Fixed severance pay cost has meant much lower legal costs and also no informal costs for firms to pay to avoid being put on trial by employees claiming to be reinstated on their job. This was in particular the aim of the Italian Jobs Act approved by the government of Matteo Renzi in 2015.

It is too early to assess the impact of the new labour market reforms on the youth unemployment rate and the ratio to the adult unemployment rate. Nonetheless, as a matter of fact, in those countries, such as Italy, where legislation has started to include not only temporary workers but all workers, the degree of employment protection legislation, as measured by the OECD indices, is clearly shrinking starting from 2012 (OECD 2017). Nonetheless, to put it in the simplest possible way, no labour law has ever generated new jobs. Labour laws make the labour market more flexible and efficient so as to allow firms to hire more resolutely during periods of economic growth.

And here comes the underlying point of this discussion. As shown in Figure 3, economic growth has been missing in peripheral areas for too long and no matter the commitment of governments in making tough reforms, reforms which are undermining their consensus, without economic growth there are no clear results on the youth and also the adult unemployment rate. Figure 3 clearly shows that growth has been very slow in all peripheral countries of the EU.

In turn, this leads to us to ask whether the EU has any theory of growth and any effective policy to stimulate it. Our opinion, which we develop more fully in the next section is that the EU is far from agnostic about economic growth, but does not fully implement its guidelines for growth.

Last but not least, the fact is that in all peripheral areas spending in education is low and, beyond spending, the educational sector is inefficient and has not sufficient links with the labour market. There are many studies already on employment protection legislation. We focus, however, on policy issues related to economic growth and the best way of reforming the educational system.

OVERCOMING THE MAASTRICHT TREATY

Populist parties in Europe depict the EU as a supranational organisation aimed at representing only the interests of autocrats, bureaucrats, banks and other financial institutions. This is essentially because of the Maastricht Treaty and the strong constraints that it imposes on fiscal and monetary policy within each member state and also at the EU level. The monetarist theoretical principles which are behind the Maastricht Treaty are well known and have been discussed many times (De Grauwe 2006).

What matters from the point of view of this paper is that the Maastricht Treaty represents a strong constraint to the implementation of the Lisbon strategy, which, according to several EU Council decisions, represents the most important strategy to achieve stable economic growth. In a sense, the Lisbon strategy could be considered the soul and the heart of the EU, in opposition to the Maastricht Treaty which is perceived by all as the straightjacket of the EU.

Within the context of Europe 2020, the reason why most peripheral countries do not experience a sufficient economic growth to absorb the soaring youth unemployment is that the relative targets are far from reached. In fact, Europe 2020 assumes that countries grow when the human capital of the population is high and investments in R&D are sufficiently high. Moreover, in a continent which is energy dependent, it is important that environmentally friendly policies be developed.

But which are exactly the Europe 2020 criteria and where are EU countries when it comes to reaching them? The criteria are as follows:

- Employment: 75 percent of the 20–64 year-olds should be in employment
- R&D/innovation: 3 percent of the EU's GDP (public and private combined) should be invested in R&D/innovation
- Climate change/energy: (1) greenhouse gas emissions 20 percent (or even 30 percent, if the conditions are right) lower than 1990; (2) 20 percent of energy from renewables; (3) 20 percent increase in energy efficiency
- Education: (1) reducing school drop-out rates below 10 percent; (2) at least 40 percent of 30–34 year-olds completing third level education

Figure 3

GDP Growth in Selected Countries

2001–2015

Source: OECD.

– Poverty/social exclusion: at least 20 million fewer people in or at risk of poverty and social exclusion.

Table 1 reports the state of progress of selected countries in reaching the Europe 2020 criteria as reported on the dedicated website of the European Commission. Again we consider a country that is the most representative, for each SWT regime. Column 1 reports the criterion; column 2 reports the EU 2020 target; the following columns report the actual values currently reached in each country. Inspection of this table clearly shows that some countries (Germany, Britain, Sweden) have already reached most of the EU 2020 targets. In fact, the EU 2020 targets are based on the experience of these Northern and Central European countries as a kind of best practice, although their level is not always the highest in the world, especially when compared to the United States and some Asian countries. Instead, Italy and Poland are lagging behind on many targets. Italy, one of the most developed countries within the EU, is still far from reaching all the targets, not only the educational targets, but also the environmental ones, although the country has a special competitive advantage in some of these fields for obvious geographical reasons.

If we have to interpret the Europe 2020 criteria as based on an underlying theory of growth and, therefore, the incapacity of South and East European countries to reach them as a causal explanation of their low growth rate, then we should ask: why are these countries having so many problems in reaching such targets?

The first obvious reason is the Maastricht Treaty, as already mentioned above. The Lisbon and Maastricht treaties actually follow two different and partly opposite recipes regarding economic growth. They are based on two theoretical models from an economic point of view. The Maastricht Treaty reflects the so-called Washington consensus wherein monetary and financial stability is a necessary and also, in the long run, sufficient condition for reaching economic growth. In contrast, the Lisbon strategy assumes that economic growth also requires important infrastructural investment in the accumulation of human capital, in the quality of education, in the environmental infrastructure and in R&D. But if EU countries have to follow the Maastricht Treaty and also the other related financial commitments, such as the Fiscal Compact, it is clear that we are jeopardising their ability to reach the Europe 2020 targets.

The euro in most EU countries is becoming even more clearly another unsurmountable obstacle to reaching the Europe 2020 criteria. At least this is what the public opinion perceives. The last political elections in most EU countries and especially in the South and East European countries have become a contest no longer between center-right and center-left parties, but rather between euro-enthusiastic *versus* euro-sceptic countries. Still, the former are winning in most countries, but it is not hard to foresee that this might not be the case in the near future if the EU does not change its strategy. As a matter of fact, euro-sceptic parties were the exceptions only few years ago. Now, they tend to represent about a half of the electorate.

But what should be done, then? It is clear that we need a less timid monetary and fiscal policy at the EU level. The experience of quantitative easing in the United States and other countries show that economic growth is not a direct, positive correlate of the overall amount of money supply available in the economy. Most probably, the US Federal Reserve made an overshooting of money supply with respect to the actual

Table 1

State of Progress in Reaching the Europe 2020 Criteria in Selected Countries

	EU target in 2020	Italy	UK	Germany	Sweden	Poland
Employment rate in % R&D expenditure as % of GDP	75% 3%	67-69% 1.53%	No target No target	77% 3%	Over 80% 4%	71% 1.7%
CO_2 emission reduction target	– 20% as compared to 1990	– 13%	– 16%	– 14%	– 17%	14%
Renewable energy Energy efficiency; reduction of energy consumption	20% – 20% (= 368 MTOE)	17% 158 MTOE	15% 177.6 MTOE	18% 276.6 MTOE	49% 43.4 MTOE	15.5% 96.4 MTOE
Early school leaving in % Tertiary education in %	10% 40%	16% 26-27%	No target No target	< 10% 42% (incl. ISCED 4)	< 10% 40-45%	4.5% 45%
Reduction of population at risk of social exclusion	– 20 million	– 2.2 million	2010 Child poverty act	– 320,000 long-term unemployed	<14% by 2020	– 1.5 million

Source: European Commission.

needs of the economy, but it is also quite apparent that the European Central Bank did not do enough in this respect and that the intervention of quantitative easing was so small as to appear totally irrelevant (see also Marelli and Signorelli 2017).

Moreover, it is time to re-discuss the Maastricht Treaty and re-write it on a new basis. EU countries should, on the one hand, find ways to implement a timely and effective spending review. The latter should be done in each branch of public administration following a bottom-up approach, not a top-down approach only. Fiscal decentralization is not sufficient because it is effective only if the local public opinion has high social capital and decides to vote for the most virtuous parties rather than the most nepotistic. Otherwise, fiscal decentralisation is conducive to increasing, not reducing public spending (Mauro and Pigliaru 2013).

On the other hand, though, it is necessary to invest more in favour of the activities which are actually able to foster economic growth. Public spending should be continuously evaluated and its impact on growth should be assessed continuously. Systematic policy evaluation is also an important tool for public spending. Only spending which is effective in reaching the aimed objectives should be maintained.

In addition, it is time to re-define a far more important EU fiscal and regional policy, which is currently absolutely insufficient. This implies re-discussing the aims and, therefore, also the size of the EU budget. It is in the Mundell and Fleming model of the optimal currency area that regional policy should be used as a tool to equalise chances among regions of the monetary union. However, spending on regional policy is absolutely insufficient and with the strong budget constraints imposed on single governments also regional policy at the national level has been sharply reduced, if not abandoned in recent years (for the case of Italy, see Viesti 2011).

No doubt then, peripheral regions are seeing their gap to core regions increasing further in terms of infrastructure and growth. Regional differences are certainly the consequence of state failure but also of market failure: with declining regional policy, the regional divide within EU countries is increasing further not diminishing (Bongardt and Torres 2013). This explains also part of the youth unemployment rate.

BETTER LINKS BETWEEN EDUCATION AND THE WORLD OF WORK

The previous section has addressed macroeconomic aspects. They are certainly very important and without a dramatic change of pace and direction in macroeconomic policy, microeconomic policy is bound to fail. No matter how deep labour reforms have been in most peripheral countries, they have generated no economic growth and no job creation *per se*. However, thanks to those reforms, peripheral countries are ready to seize the opportunities in terms of job creation when economic growth will come again. First of all, we need to foster a stable and robust economic growth at this very moment.

Nonetheless, also important microeconomic reforms are needed to reduce youth unemployment in the long run. After having focused our attention on labour market reforms in the last two decades, it is now time to focus mainly on educational reforms. In our view, they are even more important. But which are the problems to be addressed and what are the solutions?

Reforms to the education system should help remove a number of problems experienced by young people. Such problems make the SWT extremely slow and harsh in most countries, especially in the peripheral countries of Southern Europe:

a) high drop-out rate, at all levels of the educational career, from primary, to compulsory, secondary and tertiary education, which is also a target of EU 2020;
b) in many countries, university education lasts too long, causing delayed graduations too many students (Aina *et al.* 2013);
c) technical education and vocational training is still lacking or it is of low quality in too many countries. In those countries where technical and professional education can give access to the university, it has lost its original function;
d) as a consequence, the education system, both at the high secondary and tertiary level conveys mainly general competences rather than work-related ones. Still, the education system assumes as its mission the imparting of a general education rather than all-round human capital;
e) this makes also the transition to a permanent job extremely slow and hard, since firms require job related competences, not the general ones possessed by students (the so-called 'work experience trap');
f) as a consequence of the deficit in their knowledge, young people have to start accumulating work experience after completing their education on their own, which means that they can more easily develop general work experience in short term jobs, rather than job-specific work experience which requires permanent jobs (Pastore 2015a);
g) the bargaining power of insiders further strengthens, therefore increasing rather than reducing the downward pressure of youth unemployment on wages (Bentolila and Dolado 1994; Bentolila *et al.* 2012);
h) the strong educational mismatch for both high secondary school diploma holders and university graduates: overeducation is reaching high levels also in countries with a low level of tertiary education attainment (European Commission 2013; Caroleo and Pastore 2017).

To address these issues, it is necessary to implement reforms of the educational system in various directions. The first reform should imply a move towards

more flexible rather than rigid education systems. An education system is flexible when it allows:

1. moving easily from one track to another (e.g. from classical to technical/vocational education) and *vice versa*; as well as from one field of study to another at the university level (Hammer 2003);
2. getting a university degree in the regular time, which implies, among others, fostering attendance, providing more teaching hours and tutoring activities.

The Bologna reform, which introduced the 3+2 system in most EU countries went in the right direction, but was not fully understood, for it was lacking an adequate process of democratisation. The reform now needs a re-assessment to understand what did not work and how to make it work.

The dual principle should be introduced at all levels of the education system instead of the sequential education principle. According to the latter, the only mission of the education system is to create general education, while work-related skills, the other components of human capital, should be gained after exiting the education system. However, this generates a number of problems, as mentioned above. The various components of human capital are complementary, not substitutes for each other and can be better developed if they are generated together.

Training should be provided together with general education. Technical and vocational education and training should be reinforced at the school and at the university level. It is important to introduce the dual principle in all its forms, from work-related learning to full apprenticeship at school and after school. Professional university should be given to people with technical and vocational background.

The *Buona scuola* reform of 2015 has recently introduced work related learning (so-called *alternanza scuola-lavoro*) in Italy at the level of high secondary school, if not yet at the university level. Work related learning is not yet apprenticeship, as it is based more on the Scandinavian rather than the German tradition (Giubileo 2016; Maisto and Pastore 2017).

Work-related learning goes together with the recent implementation of the European Youth Guarantee. The latter, however, has had only a limited impact in most EU countries, involving e.g. in Italy less than 1 percent of the youth unemployed (under 29 years of age) for a number of reasons: a) the slow growth mentioned in the previous section; b) the inefficient organization of public and private employment services; c) the unpreparedness of the institutions that should implement the policy from the national to the local level (Pastore 2015b).

The recent reform of employment services in Italy (decree no. 150 of the Jobs Act) goes in the right direction, but for a number of reasons has not yet been implemented. The reform foresees the introduction of a quasi-market system for the management of employment services, with a complementary role of public and private agencies. State agencies are in charge of the profiling of the youth unemployed and of the definition of vouchers and the basket of services that are to be provided by private agencies (Giubileo *et al.* 2013).

However, work-related learning and the European Youth Guarantee are not enough to help close the youth experience gap and the work experience gap. Despite the obvious difficulties of importing the German apprenticeship system, it is important that this is done in all EU countries. It needs not be implemented in a rigid way as in Germany and not in all technical and professional schools, but still every EU country should introduce it in the schools that wish to do so. If it is useful and effective, it will spread on its own rapidly. Firms would like to have something like the dual apprenticeship system also in peripheral countries (see also Eichhorst *et al.* 2015).

Last but not least, to favor a smoother STW transition, other reforms aimed at establishing better links between the educational system and the labour market should be implemented. Such links can follow three models:

– German dual system;
– Direct links of schools and universities with perspective employers: *Jisseki Kankei* in Japan;
– Job placement services in Anglo-Saxon countries.

We have already discussed the German system. Let us now compare the other two systems. The idea of establishing links between educational institutions and perspective employers has two general models. The Japanese *Jisseki Kankei*, well described in Mitani (2008) among others, is able to place about 30 percent of graduates from high school immediately after obtaining their diploma, thanks to capillary links between firms and schools. Schools have an important role in assessing whom to suggest to firms for the type of job vacancy they have, based on the personal knowledge they have of the talents and competences of youngsters.

The Anglo-Saxon model of job placement is less capillary and controlled by schools and universities, but not less effective. The principle behind it is that, after all, nobody knows better than the individuals themselves and firms. Consequently, the role of schools and universities should be simply to provide placement services by spreading information about possible job vacancies among young graduates both at the secondary school level and at universities, so that each young person chooses his/her own way.

Both have advantages and disadvantages. More effort should be put by educational institutions at the EU level to develop closest, more capillary and direct links with the labour market. This means developing immaterial infrastructures of the SWT regime which are not less important than rooms and other physical structures. It is not enough that these activities be developed occasionally and randomly. They should become structured, with their own staff, financial resources and recognised role within educational institutions at all levels.

CONCLUDING REMARKS

This essay has developed an interpretative framework for understanding and assessing the possible effectiveness and also shortcomings of youth employment policy at the EU level. We have shown that the countries where youth unemployment is still very high despite the end of the world financial and economic crisis are the peripheral ones in the East and South. In some EU countries, the youth unemployment rate is over 40 percent and the ratio to the adult unemployment rate is above 3, meaning that young people have more than 3 times the chances of adults to experience unemployment.

The main reason why this is the case is that high youth unemployment countries experience sluggish economic growth. If we follow the EU policy framework, and especially the principles stated in the Lisbon strategy, the reason for the low economic growth is to be found in the low level of human capital attainment, the low level of spending in R&D and the low level of energy savings. In other words, the Europe 2020 targets are very far from being reached and an important reason why this is the case is to be found in the Maastricht Treaty and the Fiscal Compact. They should be re-discussed in depth so as to allow greater fiscal and financial flexibility. Moreover, there should be a much more energetic monetary and fiscal policy at the EU level. This, in turn, requires increasing the contributions of member countries to the EU budget to at least 4–5 ercent of the countries' GDP. We know that many will balk at this suggestion, but it is the only way forward.

From a microeconomic point of view, considering the emphasis and the effort that we have already put on labour market reforms in the last two decades and the meagre results attained, our suggestion is that we should instead focus on educational reforms from now on. Education systems should become more flexible, informed about the dual principle, assuming as its own mission the formation of all-round human capital rather than only general education and providing better links to the labour market. Education systems need important reforms and investment, which should not be blocked by the constraints set by the Maastricht Treaty and the Fiscal Compact.

REFERENCES

Aina, C., E. Baici, G. Casalone and F. Pastore (2013), "Il fuoricorsismo fra falsi miti e realtà", *Economia & Lavoro* 48, 147–154.

Bentolila, S. and J. Dolado (1994), "Labor Flexibility and Wages: Lessons from Spain", *Economic Policy* 9, 53–99.

Bentolila, S., J.J. Dolado and J.F. Jimeno (2012), "Reforming an Insider-Outsider Labor Market: The Spanish Experience", *IZA Journal of European Labor Studies* 1:4.

Bongardt, A. and F. Torres (2013), "Forging Sustainable Growth: The Issue of Convergence of Preferences and Institutions in EMU", *Intereconomics* 48, 72–77.

Caroleo F.E., O. Demidova, E. Marelli and M. Signorelli (eds., 2017), *Young People and the Labour Market: A Comparative Perspective*, Abingdon: Routledge, forthcoming.

Caroleo, F.E. and F. Pastore (2017), "Overeducation at a Glance: Determinants and Wage Effects of the Educational Mismatch, Looking at the Alma Laurea Data", *Social Indicators Research*, forthcoming.

European Commission (2013), *Employment and Social Development in Europe 2012*, Brussels.

De Grauwe, P. (2006), "What Have We Learnt about Monetary Integration since the Maastricht Treaty?", *Journal of Common Market Studies* 44, 711–730.

Eichhorst, W., N. Rodríguez-Planas, R. Schmidl and K.F. Zimmermann (2015), "A Roadmap to Vocational Education and Training in Industrialized Countries", *Industrial and Labor Relations Review* 68, 314–337.

Esping-Andersen, G. (1990), *The Three Worlds of Welfare Capitalism*, Cambridge: Polity Press.

Giubileo, F. (2016), *Alternanza scuola-lavoro: dalla innovazione della 107 alla sperimentazione del sistema duale*, Fondazione EYU, Rome.

Giubileo, F., M. Leonardi and F. Pastore (2013), "Centri per l'impiego. Ecco cosa si può salvare", Le nuvole del lavoro, Blog of Corriere della Sera, 25 November.

Hammer, T. (2003), *Youth Unemployment and Social Exclusion in Europe*, Bristol: Policy Press.

Maisto, M. and F. Pastore (2017), "Alternanza scuola-lavoro: Un bilancio ad un anno dall'attuazione", *Economia & Lavoro* 51, 133–145.

Marelli E. and M. Signorelli (2017), *Europe and the Euro: Integration, Crisis and Policies*, London and New York: Palgrave.

Mauro L. and F. Pigliaru (2013), *Decentralization, Social Capital and Regional Convergence*, Fondazione Eni Enrico Mattei Working Paper 57.

Mitani, N. (2008), "Youth Employment in Japan after the 1990s Bubble Burst", in: De Freitas, G. (ed.), *Young Workers in the Global Economy: Job Challenges in North America, Europe and Japan*, Cheltenham: Edward Elgar, 109–134.

OECD (2017), *OECD Economic Surveys: Italy 2017*, Paris.

Pastore, F. (2015a), *The Youth Experience Gap. Explaining National Differences in the School-to-Work Transition*, Heidelberg: Physica Verlag.

Pastore, F. (2015b), "The European Youth Guarantee: Labor Market Context, Conditions and Opportunities in Italy", *IZA Journal of European Labor Studies* 4:11.

Pastore, F. and L. Giuliani (2015), *The Determinants of Youth Unemployment: A Panel Data Analysis*, Discussion Papers 2_2015, CRISEI, University of Naples.

Viesti G. (2011), "Le politiche di sviluppo nel Mezzogiorno negli ultimi venti anni: scelte e risultati", *Economia e Politica Industriale* 4, 95–137.

Werner Eichhorst and Ulf Rinne

The European Youth Guarantee: A Preliminary Assessment and Broader Conceptual Implications

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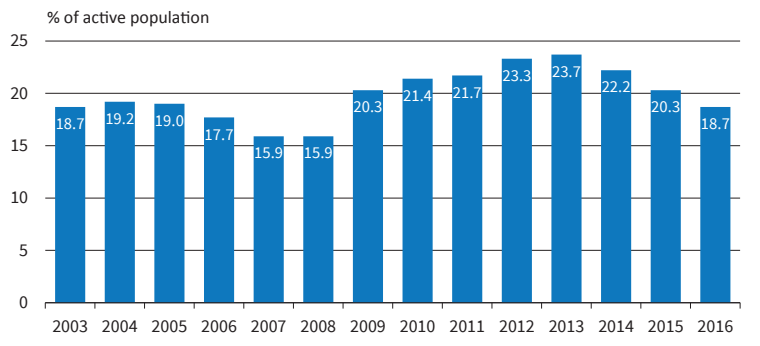
INTRODUCTION

The Great Recession of 2008/09 increased the urgency of many labour-market related policy issues at a global, European and national level. Among these issues, youth unemployment is typically rated high, mainly because of its potentially long-lasting impacts and scarring effects on young individuals that could ultimately result in a 'lost generation' incapable of catching up later in life (Cahuc *et al.* 2013; Schmillen and Umkehrer 2013). Figure 1 shows that in the European Union, youth unemployment peaked around 2013, declining since then, but is still above pre-crisis levels now. The depicted share of 23.7 percent implies that more than 5.5 million youth were unemployed in that year.[1] At the same time, nearly 14 million young people were neither in employment, education or training – the so-called NEETs (Andor 2016).

Against this background, a number of EU initiatives were launched since 2010, among which the *European Youth Guarantee,* proposed in December 2012, is the most prominent measure.[2] But also other related measures such as *Youth on the Move* in 2010 and the Youth Employment Initiative in 2013 (with a budget of 6.4 billion euros) are important elements of what may be labelled as a EU 'action plan' to decrease youth unemployment or, more precisely, to reduce the number of NEETs.

[1] Throughout this paper, we use the United Nations' youth definition of persons aged 15 to 24 years (see e.g. O'Higgins (1997) for a discussion).
[2] See Andor (2016) for an overview about important EU initiatives since 2010.

Figure 1
Youth Unemployment Rate in EU28, 2003-2016



Source: Eurostat.

The *European Youth Guarantee* can be viewed as an EU-wide framework comprising a system of measures to be taken by each Member State, which were, for example. encouraged to also use demand-side initiatives such as hiring subsidies (Andor 2016). More generally, the European Youth Guarantee is "a commitment by all Member States to ensure that all young people under the age of 25 years receive a good quality offer of employment, continued education, apprenticeship or traineeship within a period of four months of becoming unemployed or leaving formal education" (European Commission 2017).[3] In this context, best practices in the context of school-to-work transitions should be transferred from well-performing countries such as Austria and Finland to all Member States (Andor 2016).

Past examples of youth guarantees in Scandinavian countries show that these policy measures, if successfully implemented, usually involve not only adjustments of active labour market policies (ALMPs), but typically also require broader structural reforms of vocational education and training systems, general education systems and public employment services.[4] Accordingly, the estimated costs associated with the *European Youth Guarantee* are very substantial and amount to approximately 45 billion euros for the entire European Union (Escudero and López Mourelo 2015).

Whether this substantial investment is worth spending, depends of course on how effective the *European Youth Guarantee* is in reaching its goals. In this context, it is important to note that its aim was indeed not to eliminate youth unemployment, but rather to reduce the incidence of longer unemployment spells among vulnerable young individuals at a very early stage of their professional career (Andor 2016).

A PRELIMINARY ASSESSMENT OF THE EUROPEAN YOUTH GUARANTEE

Being officially launched in April 2013, 14 million young people have entered the various schemes under the umbrella of the *European Youth Guarantee* between January 2014 and October 2016, which means that on average 2 million young people were registered at any given point in time (European Commission 2016). However, these relatively impressive figures on the number of participants are not very informative about the actual effectiveness of the program.

Also the development of youth unemployment alone may not be very helpful for assessing its effectiveness. In fact, even if the

[3] 13 Member States extended coverage to people under the age of 30 years, instead of 25 years as set out in the Council Recommendation – see European Commission (2016).
[4] Sweden, Norway, Denmark and Finland implemented youth guarantees in the 1980s and 1990s – see e.g. Escudero and López Mourelo (2015) for more details.

European Youth Guarantee had been very successful, youth unemployment could have initially risen as (previously inactive) NEETs were activated and, as a first step, registered as unemployed (Andor 2016). However, the available evidence suggests that the *European Youth Guarantee* has so far been primarily successful in supporting unemployed NEETs rather than in bringing inactive NEETs back into employment, education and training (European Commission 2016). As a result, EU-wide youth unemployment has indeed dropped by 5 percentage points between 2013 and 2016 (see Figure 1). Still, the question remains whether and how much of this drop in youth unemployment has been caused by the implementation of the *European Youth Guarantee* or whether a similar decrease would have also occurred in its absence (i.e. the decrease has been due to a more favourable economic situation with increasing labour demand and not due to the policy change). As the *European Youth Guarantee* cannot substitute a favorable economic environment (Andor 2016), its impacts should be assessed against the background of given macroeconomic conditions.

Accordingly, comparing the development of youth unemployment to the evolution of adult unemployment may be more informative for assessing the effectiveness of the *European Youth Guarantee*. This comparison may give at least a first indication of its causal effects as the two age groups were similarly affected by the Great Recession. When calculating the youth-to-adult unemployment ratio, it can be shown that this ratio was practically constant in the European Union between 2000 and 2012 (Cahuc *et al.* 2013). Figure 2 confirms this and additionally shows that this ratio has also remained rather constant since the implementation of the *European Youth Guarantee* – not only on average in the entire European Union, but also in many Member States. Hence, the decrease in youth unemployment since 2013 has been roughly proportional to the corresponding drop in adult unemployment during the same period. In other words, the analysis of the youth-to-adult unemployment ratio does not broadly confirm the statement that the decrease in youth unemployment since 2013 has been stronger than the corresponding drop in adult unemployment (see e.g. European Commission 2016, which includes such a statement). One exception is the Netherlands, where the youth-to-adult unemployment ratio has indeed dropped markedly since 2013.[5]

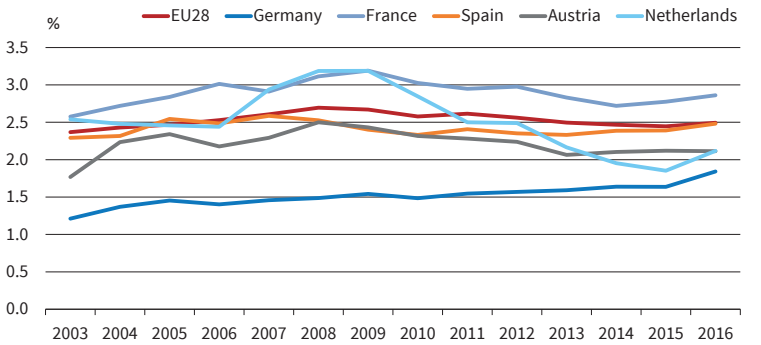
Pastore (2015) argues along similar lines. Although his assessment is mainly based on a case study for Italy, he concludes that many Member States, especially in Southern Europe, were not very well-prepared for successfully implementing the rather ambitious elements of the *European Youth Guarantee.* Its effectiveness, however, crucially depends on a successful implementation as a first step. One could even argue that those countries that needed effective policies to reduce youth unemployment and NEET rates were exactly those countries where the institutional capacities to deliver such policies were least developed. Successful examples of early youth guarantees in Austria or Scandinavia benefitted from a highly elaborated public employment service and, all in all, more limited youth unemployment.

The challenges encountered when it came to the implementation of the *European Youth Guarantee* and the Youth Employment Initiative were analysed more in-depth in a recent report by the European Court of Auditors (2017). While acknowledging the progress made in the EU Member States studied with respect to policy focus and the design of youth-oriented schemes, the main expectations of the *European Youth Guarantee* could not be met so far. One issue concerns the budget restrictions in countries and regions with large NEET populations; a second major obstacle concerns the limited outreach of responsible public employment service agencies as shown by only partial registration of the NEET group. Hence, it was not possible to deliver good quality offers to all young people in the target group and improve the employment situation of those concerned (see also Dhéret and Roden 2016).

Andor (2016) concludes that the *European Youth Guarantee* "provides a very good framework for seriously addressing the youth employment challenge". He adds that long-term term efforts are required, which implies that a similar perspective should be taken when evaluating its impacts. An important problem that arose during its implementation is the need for an adequate capacity of public employment services. Accordingly, Andor (2016) views the *European Youth Guarantee* as a longer-term structural reform aimed at fundamentally improving the school-to-work transition process. It is thus not primarily a crisis-related measure but rather a measure for "repairing the pre-cri-

Figure 2

Youth-to-adult Unemployment Ratio in EU28 and Select Member States, 2003–2016



Source: Eurostat.

[5] Note that the youth-to-adult unemployment ratio in the Netherlands started to drop already around 2009.

sis models of labor markets and education" (Andor 2016).

BROADER CONCEPTUAL IMPLICATIONS

Conceptually, the *European Youth Guarantee* is a labour market policy aimed at activating young individuals and at facilitating their school-to-work transitions.

School-to-work Transitions

Vocational education and training are core factors in smoothing school-to-work transitions.[6] In this context, the quality of the education system is very important in ensuring that the skills provided match the needs of the labour market, and thus in avoiding educational mismatch. Existing studies on the relative effectiveness of different types of vocational training on the labour market outcomes of participants, mostly referring to high-income countries, are summarised in Zimmermann *et al.* (2013) and Eichhorst *et al.* (2015). Accordingly, cross-country studies typically find a comparative advantage in countries with a dual apprenticeship system (e.g. Quintini and Manfredi 2009), although this relationship is not necessary causal. Country-specific studies also identify a relative advantage of dual apprenticeship training, in particular with respect to early labour market outcomes, as this initial advantage fades over time (e.g. Winkelmann 1996; Plug and Groot 1998; Bonnal *et al.* 2002; Parey 2009).

It thus appears that dual apprenticeship systems are relatively effective in smoothing school-to-work transitions of young individuals. Youth completing school-based vocational education and training do as well as (and sometimes better than) if they had instead remained in purely academic studies (Eichhorst *et al.* 2015). This is particularly the case when the occupation of the training matches the future career path. Rigorous studies evaluating the effectiveness of vocational education and training show that vocational training makes the transition to gainful employment easier and may improve wage and employment outcomes, in particular for low-ability youths and those working in low-skill jobs (Eichhorst *et al.* 2015). In several settings, an extension or prolongation of the academic schooling for these youth does not result in additional gains in terms of labour market entry but instead may entail an increased risk of dropout.

Comparing across types of vocational education and training, the dual system, which is very prominent in a number of continental European countries including Germany, is more effective than alternative academic or training education at helping youth transition into employment, though no wage differences are observed. Hence, it seems fair to say that vocational training elements generate some added value both to employers providing training and to the trainees, and they facilitate the timely entry into more stable and better-paid jobs at the beginning of the working life.

Yet, given that economic and institutional conditions are highly diverse across industrialised countries, when it comes to promoting vocational education and training, policymakers need to take into account the resources available and to build on them. The ideal type of a dual vocational education and training model relies on the support of important societal groups that are involved, namely employers, young people and their families, trade unions, and the government. Hence, while Germany's dual system may serve as a role model for other countries (see e.g. Eichhorst *et al.* 2015; Zimmermann *et al.* 2013), it is generally not advisable to simply copy the German model. Establishing a dual vocational training model is a demanding task that requires a longer-term perspective. Structural reforms to revive the economy and reduce entry barriers to employment are also needed, in particular a model of employment protection legislation that allows for a smoother transition from entry level jobs, also fixed-term contracts, to permanent positions. Since most countries already have some form of vocational training programme, they could start with existing elements to bring vocational education and training closer to employer and labour market needs. Starting from regional and sectoral clusters of firms sharing the demand for similar skills could be a good starting point, and in countries with high shares of graduates, a closer link between higher education and practical experiences could help.

Activation Strategies

Activation strategies are rather imprecisely defined, but they usually comprise a relatively broad range of active labour market policy schemes (and are often combined with passive labour market policies, e.g. 'benefit conditionality'). While it is clearly the case that 'activation' constitutes an important element of the *European Youth Guarantee,* its actual impacts and effects in this specific context are yet to be determined. However, one can nevertheless assess potential and actual effects of various strategies based on currently available evaluation studies.[7]

For example, Zimmermann *et al.* (2013) give an overview of the available empirical evidence which is in turn based on summaries included in different studies (e.g. Card *et al.* 2010; Martin and Grubb 2001; Quintini *et al*. 2007). However, the programme effects that are discussed in these studies may not necessarily reflect the specific effects for the group of young individuals. In this context, Card *et al.* (2010) and, more recently, Card *et al.* (2015) and Kluve *et al.* (2016) note that most active labour market policy schemes that are specifically targeted at young unemployed individuals appear to be less effective than broader schemes targeted at the

[6] This section draws on earlier work of the authors, in particular Eichhorst and Rinne (2016).

[7] Eichhorst and Rinne (2015 and 2016) perform similar, albeit more detailed, analyses.

unemployed in general. Although these studies cannot establish a general hierarchy of types of interventions in terms of their effectiveness (at least not in developed countries), they stress that with a proper targeting and during recession periods, the effects of participation tend to be more positive. The latter finding is probably due to a different pool of participants. At the same time, there is compelling evidence pointing towards the important role of profiling, early interventions and following-up with those young people who are most vulnerable. This type of activation should preferable take place at an early stage of their unemployment spell (e.g. Martin and Grubb 2001; Quintini *et al.* 2007).

In order to draw more specific conclusions, in particular for the group of young unemployed individuals, it is useful to review available evaluation studies of specific programmes applied in specific contexts, i.e. mainly at the national level. Studies assessing the effectiveness of a single measure, i.e. the impacts of a given program that may be part of a broader activation strategy, can be found most frequently. However, studies of this type may have the disadvantage of only being able to draw conclusions that are not necessarily generalisable. In addition, when taking into account the available findings regarding the effectiveness of active labour market programmes specifically targeting young people, we can clearly see that these instruments cannot solve massive youth unemployment alone – especially when labour demand is weak and when larger structural reforms are needed. Furthermore, not all active programs are equally effective, and their effectiveness also depends on the general functioning of the labour market.

Results of such studies show that attention should also be paid to paving the way for a medium-term integration of young people into gainful and productive employment. In this context, evaluation findings that deal with subsidised temporary employment suggest that it is not necessarily a good path into regular employment as it can lead to repeated fixed-term employment, in particular in segmented labour markets and when training is underdeveloped. Subsidised employment, preferably located in the private sector, should be combined with substantial job-related training with employers to increase the employability and productivity of young people. Start-up support can be a useful tool to create jobs for young people and to contribute to a more dynamic development of the economy, particularly in a difficult economic environment (Caliendo and Künn 2011). Structural reforms lowering institutional barriers to employment facilitate the working of activation policies.

Hence, when initial education has been completed, activation policies can play a certain role in promoting youth employment. Activation schemes in the form of job search assistance, monitoring and sanctioning should also not be suspended in a situation of crisis and high unemployment when labour demand is weak. Even in such a situation, which can generate long-term benefit dependency that will be hard to overcome regardless of an improving economic environment, early intervention makes sense. For example, job search assistance can be relatively effective in the short run, and it is often combined with monitoring and sanctioning. While monitoring and sanctioning certainly have to play a crucial role in any activation strategy as necessary ingredients of actual benefit conditionality, sanctioning should not be too excessive, but well-balanced and complemented with suitable supportive measures – in particular in the case of young people as they might otherwise leave the labour force (see also Caliendo and Schmidl 2016).

Monitoring and sanctions during periods of benefit receipt are central policy tools allowing public employment services to keep track of young people, but also to check (and potentially react on) compliance or noncompliance of the unemployed through introducing obligations as part of activation policies. Such obligations can, for example, be defined in terms of accepting suitable job offers, participating in offered active labour market policy schemes, sending out a specific number of applications, or being present at meetings with the caseworker. Non-compliance with any of such obligations may result in a sanction. This could imply, for example, that welfare benefits are reduced for a specific time period, or even completely withdrawn. Sanctions therefore set incentives to comply with job search requirements, and they ultimately aim at increasing the transition rate from unemployment into employment (by combatting moral hazard).

Monitoring is a necessary tool to detect noncompliance of the unemployed with their obligations. However, the effect of monitoring alone is usually not analysed. Instead, the empirical literature mainly focuses on the effects of sanctions on various outcomes, most importantly on the transition from unemployment to employment. Additionally, the implementation of a system of monitoring and sanctions generally requires a specific level of capacity in the public employment service.

The available empirical evidence on the effects of sanctions can be summarised as follows (see van den Berg *et al.* 2014, and references therein): first, most studies detect a positive impact of sanctions on job-finding rates. Second, evidence also points towards an increased probability of leaving the labour force and welfare receipt. Third, some studies suggest negative impacts of sanctions on job match quality, i.e. wages are lower and/or jobs are less stable. Fourth, findings suggests that an increased use of sanctions reduces their effectiveness (van der Klaauw and van Ours 2013). Finally, although the vast majority of empirical studies do not explicitly focus on youth, some research indicates that the effectiveness of sanctions increases with age (at least up to a certain age; van den Berg *et al.* 2004; van der Klaauw and van Ours 2013). However, a more recent study explicitly analysing the effects of sanctions on young job seekers confirms positive

impacts on the transition rate into employment also for this group, which appear moreover independent of their timing within the unemployment spell (van den Berg *et al.* 2014).

To summarise, activation policies in a broader sense should also be applied *vis-à-vis* young people, with a particular focus on the acquisition of skills early in life. While a binding link between the availability for policy interventions and the access to benefits makes sense, sanctioning should not be excessively strict in the case of young people as this might mean that they withdraw from the labour market or end up in low-skilled, more vulnerable casual jobs – and both scenarios would have long-term impacts on their career patterns.

CONCLUSIONS

To combat youth unemployment, many different policy areas have to be addressed simultaneously and systematically. On the one hand, the macroeconomic environment plays a crucial role in facilitating youth integration into the labour market. However, favourable economic conditions are not sufficient to solve the problem effectively.

Here, institutional reforms have to set in, focusing in particular on the regulation of labour market entry by way of employment protection and through the design of school-to-work transition regimes that put strong emphasis on the acquisition of skills and competences that are relevant to the labour market. Furthermore, youth activation policies have to be reinforced so that fewer young people are excluded from promising pathways into stable employment. A combination of benefit provision with targeted active labour market policies, in particular training, is most desirable. This, in turn, depends on appropriate funds and on effective delivery agencies.

How essential these latter two factors are can be shown in context of the *European Youth Guarantee.* While this instrument probably is as good as it could be as a European measure, the actual implementation in countries with high youth unemployment falls short of initial expectations.

REFERENCES

Andor, L. (2016), *Youth Guarantee Four Years After – EU Youth Employment Initiatives and Their Evaluation,* https://www.academia.edu/30448774/Youth_Guarantee_Four_Years_After.

Bonnal, L., S. Mendes and C. Sofer (2002), "School-to-work Transition: Apprenticeship versus Vocational School in France", *International Journal of Manpower* 23, 426–442.

Cahuc, P., S. Carcillo, U. Rinne and K.F. Zimmermann (2013), "Youth Unemployment in Old Europe: The Polar Cases of France and Germany", *IZA Journal of European Labor Studies* 2:18.

Caliendo, M. and S. Künn (2011), "Start-Up Subsidies for the Unemployed: Long-Term Evidence and Effect Heterogeneity", *Journal of Public Economics* 95, 311–331.

Caliendo, M. and R. Schmidl (2016), "Youth Unemployment and Active Labor Market Policies in Europe", *IZA Journal of Labor Policy* 2016 5:1.

Card, D., J. Kluve and A. Weber (2010), "Active Labor Market Policy Evaluations: A Meta-Analysis", *Economic Journal* 120, 452–477.

Card, D., J. Kluve and A. Weber (2015), *What Works? A Meta Analysis of Recent Active Labor Market Program Evaluations*, IZA Discussion Paper 9236.

Dhéret, C. and J. Roden (2016), *Towards a Europeanisation of Youth Employment Policies? A Comparative Analysis of Regional Youth Guarantee Policy Designs,* European Policy Centre Issue Paper 81.

Eichhorst, W. and U. Rinne (2015), *Promoting Youth Employment through Activation Strategies*, IZA Research Report 65.

Eichhorst, W. and U. Rinne (2016), *Promoting Youth Employment in Europe: Evidence-based Policy Lessons,* IZA Policy Paper 119.

Eichhorst, W., N. Rodríguez-Planas, R. Schmidl and K.F. Zimmermann (2015), "A Roadmap to Vocational Education and Training in Industrialized Countries", *Industrial and Labor Relations Review* 68, 314–337.

Escudero, V. and E. López Mourelo (2015), *The Youth Guarantee Programme in Europe: Features, Implementation and Challenges,* ILO Research Department Working Paper 4.

European Commission (2016), *The Youth Guarantee and Youth Employment Initiative Three Years On*, https://ec.europa.eu/transparency/regdoc/rep/1/2016/EN/1-2016-646-EN-F1-1.PDF.

European Commission (2017), *Youth Guarantee,* http:// ec.europa.eu/social/youthguarantee.

European Court of Auditors (2017), *Youth Unemployment – Have EU Policies Made a Difference? An Assessment of the Youth Guarantee and the Youth Employment Initiative*, Special Report 5, Luxembourg.

Kluve, J., S. Puerto, D. Robalino, J.M. Romero, F. Rother, J. Stöterau, F. Weidenkaff and M. Witte (2016), *Do Youth Employment Programs Improve Labor Market Outcomes? A Systematic Review,* IZA Discussion Paper 10263.

Martin, J.P. and D. Grubb (2001), *What Works among Active Labour Market Policies: Evidence from OECD Countries' Experiences,* OECD Labour Market and Social Policy Occasional Paper 35.

O'Higgins, N. (1997), "The Challenge of Youth Unemployment", *International Social Security Review* 50, 63-93.

Parey, M. (2009), *Vocational Schooling versus Apprenticeship Training – Evidence from Vacancy Data,* mimeo.

Plug, E. and W. Groot (1998), *Apprenticeship versus Vocational Education: Exemplified by the Dutch Situation*, mimeo.

Quintini, G. and T. Manfredi (2009), *Going Separate Ways? School-to-Work Transitions in the United States and Europe,* OECD Social, Employment and Migration Working Paper 90.

Quintini, G., J.P. Martin and S. Martin (2007), *The Changing Nature of the School-to-Work Transition Process in OECD Countries*, IZA Discussion Paper 2582.

Schmillen, A. and M. Umkehrer (2013), *The Scars of Youth: Effects of Early-Career Unemployment on Future Unemployment Experiences,* IAB Discussion Paper 6/2013.

van den Berg, G.J., B. van der Klaauw and J.C. van Ours (2004), "Punitive Sanctions and the Transition Rate from Welfare to Work", *Journal of Labor Economics* 22, 211–241.

van den Berg, G.J., A. Uhlendorff and J. Wolff (2014), "Sanctions for Young Welfare Recipients", *Nordic Economic Policy Review* 1, 177–208.

van der Klaauw, B. and J.C. van Ours (2013), "Carrot and Stick: How Re-employment Bonuses and Benefit Sanctions Affect Exit Rates from Welfare", *Journal of Applied Econometrics* 28, 275–296.

Winkelmann, R. (1996), "Employment Prospects and Skill Acquisition of Apprenticeship-Trained Workers in Germany", *Industrial and Labour Relations Review* 49, 658–672.

Zimmermann, K.F., C. Biavaschi, W. Eichhorst, C. Giulietti, M.J. Kendzia, A. Muravyev, J. Pieters, N. Rodríguez-Planas and R. Schmidl (2013), "Youth Unemployment and Vocational Training", *Foundations and Trends in Microeconomics* 9, 1–157.

Mikkel Barslund and Daniel Gros

Declining Youth Unemployment in Europe: The Effect of the Business Cycle or the European Youth Guarantee?

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INTRODUCTION

In 2012, youth unemployment took centre stage as a European policy issue. It was on the agenda of successive European Councils. The German minister of labour made a pledge to the Spanish Government of allocating apprenticeships for qualified young Spaniards. The Commission unveiled a host of ideas intended to combat youth unemployment. The outcome was a number of policy initiatives to fight youth unemployment, with the adoption of the Youth Guarantee as the central piece of European legislation. The Youth Guarantee committed member states to offer, within four months of becoming unemployed or finished education, either employment, apprenticeship/traineeship or further education. In addition the Youth Employment Initiative made available around 3 billion euros of funding from the Commission to support young people living in regions with youth unemployment higher than 25 percent with the 'young' defined as the 15–24 year olds. Most notably; the core of the Youth Guarantee access to a 'quality job or training within 4 months of finishing education' only applied to this age group (European Commission 2012).

The background leading up to the policy initiative is well-known: sharp declines in employment in many members states in the wake of the financial and sovereign debt crises in Europe took headline youth unemployment numbers to what was widely reported as 'alarming' or 'catastrophic'. Speeches and not least the media reported on a 'lost generation', 'scarred' by unemployment. Indeed, official statistics reported that Spain had a youth unemployment rate higher than 50 percent. For Greece, the number was 66 percent at the time. Portugal, Italy, Slovakia and Ireland also had youth unemployment rates above 30 percent in 2012.

At the time, we were critical of the singular focus on youth unemployment in the public debate (Barslund and Gros 2013). Public spending is always about trade-offs; there is never a shortage of good causes to which funds can be allocated. Hence, a decision to spend money on 'unemployment alleviation' carries an implicit trade-off. When spending is restricted to a particular group the trade-off is explicitly with other age groups. We saw no such considerations in the public discourse. Furthermore, it was clear that expectations created at the time were running well above what we believed the Commission could deliver in a severely demand-constrained economy. In fact, as we argue below, while youth unemployment carries costs, as does unemployment at all ages, for the individual and the society, in most countries youth unemployment is not a large stand-alone societal problem. Rather, *general unemployment* is the problem. Focussing only on the young and the adverse effects of unemployment hitting one particular cohort in a situation with very high overall unemployment rates seems to be a very partial framework for analysis.

In this article, we first take a fresh look at youth unemployment and how it measures up against overall unemployment. We then discuss the scarring hypothesis, and argue that the literature is far from clear on the crucial question of whether being unemployed when young carries a larger scar than for older workers. In fact, we argue that there is little reason that jobs for youth should be prioritised over jobs for adults, say, an unemployed 35 year old with dependent family.

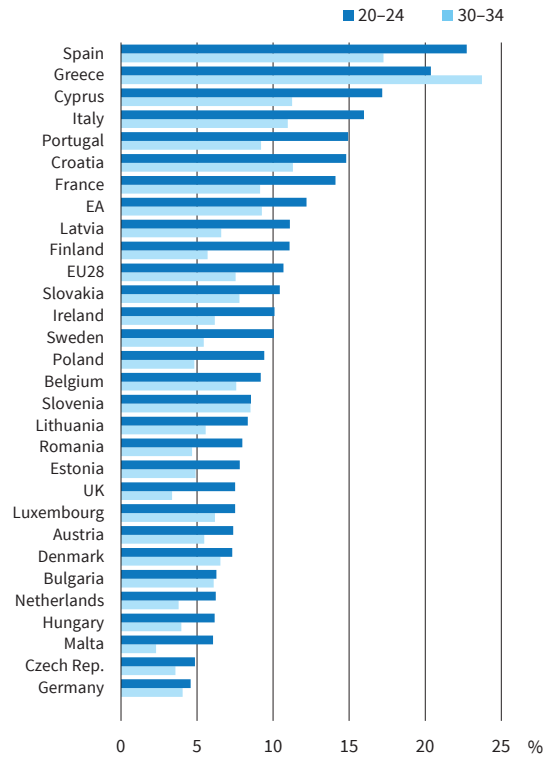
YOUTH UNEMPLOYMENT IN PERSPECTIVE[1]

It is well known to labour market experts that the youth unemployment rate is not well suited to describe the labour market situation of the young. Labour market activity rates among the group of 15–24 year olds – the age group most commonly referred to as youth – are in general low, and vary enormously with age as well as across countries. It is also very heterogeneous. The group of 15–19 year olds are mostly students, with very low labour market participation rates even before the crisis – in particular in countries hit hardest by the economic crisis. This is mostly a good thing as the majority pursue further secondary or tertiary education. In the 20-24 year old age group activity rates are higher, though many in this age group are still in tertiary or post-secondary non-tertiary education. For those having finished their education and looking for jobs, unemployment is troublesome, but in many countries students often start working already during and alongside their studies, thus boosting labour market participation. For these reasons, and because activity rates for youth varies substantially among countries, it is instructive to look at unemployment ratios, i.e. unemployment to total population for the youngest age groups to get a clearer picture of youth unemployment (Figure 1). It is in the peripheral euro area countries, like Greece, Spain, Italy and Portugal that youth unemployment is highest, with double digit unemployment ratios (even in France). However, there are many other countries with much more moderate rates. Germany stands out as having the lowest youth unemployment, whether measured by the rate or the ratio.

The unemployment ratio tells us how many of a certain cohort are unemployed, whereas the unemployment rate answers the question of how many of those

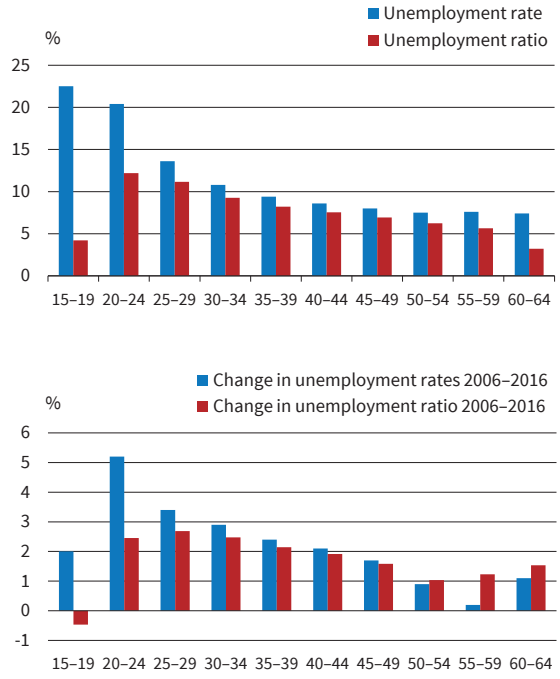
[1] We use youth to denote the age group of 15-24 year olds, as is common practice.

Figure 1
Unemployment Ratios for Age Groups 20–24 and 30–34
2016



Source: Eurostat. © ifo Institute

Figure 2
Unemployment Rates and Ratios for Different Aage Groups in Euro Area, 2016



Source: Eurostat. © ifo Institute

of a certain cohort who participate in the labour market are unemployed. The ratio shows the overall incidence of those who are frustrated because they cannot find a job, whereas the rate shows the incidence of the job seekers among a potentially much smaller group. It is thus only to be expected that the unemployment rate is often much higher than the unemployment ratio, but the higher number is most often used in political discourse because it is much more useful to support calls for policy action.

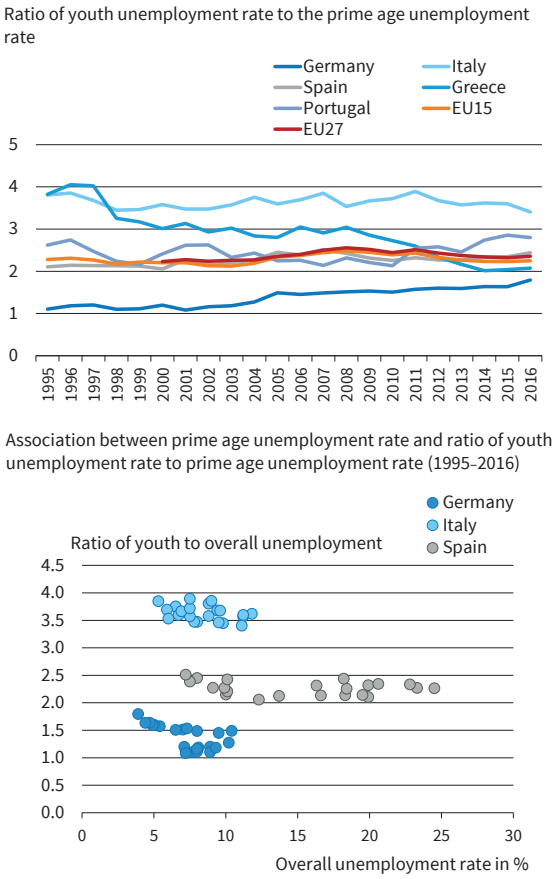
Figure 1 also illustrates that if one looks at the ratio, high unemployment is not limited to the young age groups. In most countries the unemployment ratio of the 30–34 year olds, i.e. those ten years older than the typical youth cohort (those 15–24), is only somewhat lower than the ratio for the younger. In fact, in Greece, a larger share of the population of 30–34 year olds are currently unemployed than is the case for the 20–24 year olds.

If we consider changes in the unemployment rates for different cohorts over the period 2006-2016 in the euro area as a whole, rates have increased the most for the age group of 20–24 and 25–29 year olds. The first graph of Figure 2 shows the level of the unemployment rate and ratio in 2016. It is apparent that the difference between the two measures is largest at both ends of the age scale because both the young and the elderly (above 55 years) have low participation rates. The second graph of Figure 2 shows the change over the ten year period 2006–2016. The 15–19 years cohort illustrates how the unemployment rate can be misleading since for this age group enrolment rate in education have increased, thus leading to a reduced number of job seekers, which translates into a lower ratio, but the registered unemployment rate shot up because fewer in this age group are working as well. For the 20–24 year olds the difference between rate and ratio is also large, but, as for the other cohorts, the two point in the same direction. It is still clear that the unemployment ratio has increased the most for the 25–29 year olds and there are only minor differences in the increase among cohorts aged between 30 and 39.

That unemployment ratios and unemployment rates of the young cohort aged between 15 and 24 are higher than among prime age workers is not surprising; even if hiring and firing rates were equal across cohorts, the cohort of 15–24 year old has a steady stream of 'unemployed' entering from the education system. Moreover, a general decrease in economic activity will affect young people active in the labour market more than older cohorts. Young people are more likely to have entered the labour market recently and – if employed – be on fixed term contracts. They might thus be easiest to fire. In addition, the unemployment rate of young cohorts depends relatively more on the general level of new hiring than on the number of lay-offs than for older cohorts (see Casado *et al.* (2015), for a detailed decomposition of worker flows between employment and unemployment).

Thus, while youth unemployment is higher than average unemployment, the ratio of the two has

Figure 3
Youth Unemployment Rates Relative to the Rate of Prime Age Individuals (25 54 y/o)



Source: Eurostat. © ifo Institute

remained relatively stable for most countries over the past two decades (Figure 3, first graph). The only clear change has been a reduction in the differences across member states. Furthermore, there is barely any correlation between the overall employment rate and the ratio (Figure 3, second graph). In the case of Spain, the ratio between the youth unemployment rate and the unemployment rate of the prime age labour force has been constant at around 2.5 whether the employment rate was 10 or 20 percent. The factor 2.5 implies that if the overall unemployment rate goes from 10 to 20 the youth unemployment rate would go from 25 to 50 percent. The absolute increase would thus be much larger, in both directions: as overall unemployment comes down, youth unemployment falls by more.

The scatter plots in the second graph of Figure 3 for the three countries most affected by the crisis suggest that the ratio of youth to overall unemployment actually decreases slightly as overall unemployment goes up. But there are too few observations to decide whether this is a general phenomenon.

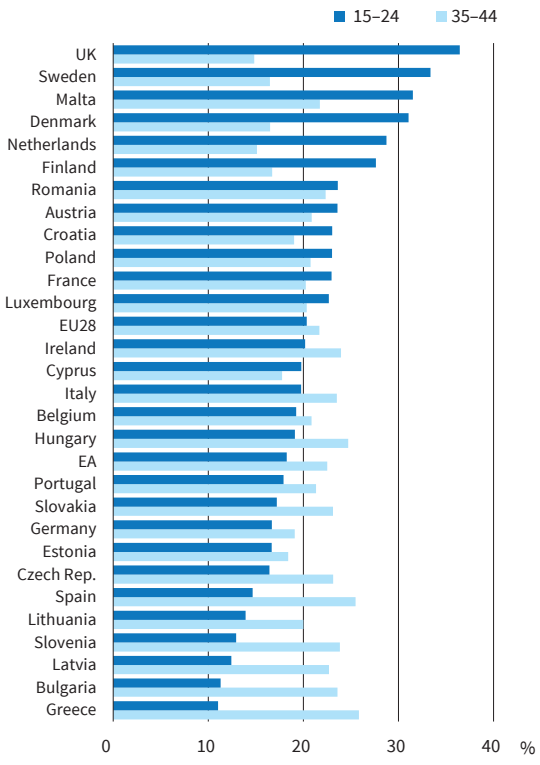
If the ratio of youth to overall unemployment is larger than one and roughly constant, one would expect that any increase in the overall unemployment rate should be associated with an even larger increase in youth unemployment – and *vice versa*. It should therefore come as no surprise that youth unemployment rates shot up during the great recession and that it has come down more rapidly than overall unemployment in countries affected the worst by the crisis.

Unemployment ratios and (for older cohorts) rates are instructive to compare the situation across cohorts when the population size of each cohort differs. However, from a public policy perspective what matters is the absolute magnitude of unemployment and the part the younger cohorts play in the overall phenomenon. Looking at the level of unemployment in absolute terms paints a somewhat different picture. In countries with the largest youth unemployment rates, the number of young people unemployed constitutes less than 20 percent of the total number of unemployed people (Figure 4). In Greece and Spain, the unemployed aged 35–44 make up a substantially large share of total unemployment. Given that individuals in this age group are more likely to have dependents (potentially both young and old), and, for this same reason, this age group is also less mobile, this seems like a larger societal problem. On the other hand, Britain and Sweden are countries with a large share of the young in total employment.

It is also of interest to see how different cohorts have fared across the 10-year period from 2006 to 2016 in terms of absolute changes in employment and unemployment.[2] Looking first at changes in employment

[2] We rely on Eurostat 5-year age categories as a data source. We therefore start in 2006 in order to follow the cohorts.

Figure 4
Cohort's Share of Total Unemployment 25–64 Year Old
2016



Source: Eurostat. © ifo Institute

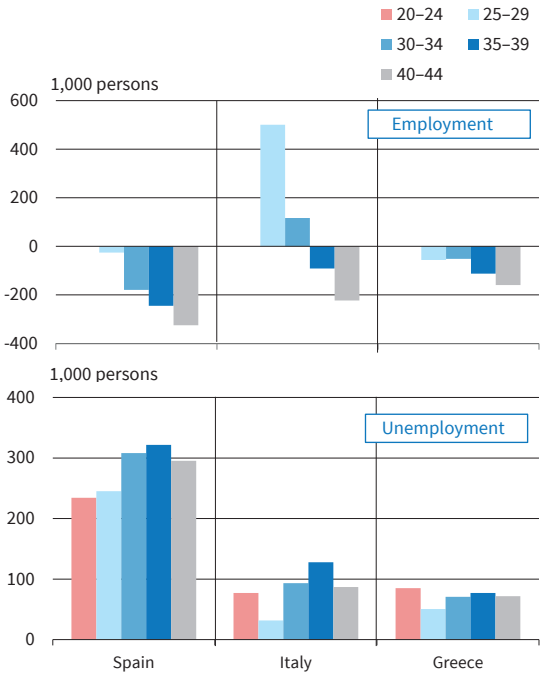
among the four 5-year age cohorts in 2006, there is little evidence that younger cohorts fared worse (see Figure 5, first graph). In the case of Italy and Greece the youngest cohort shown, those aged 25–29 years in 2006 are not reliable because of relatively smaller labour market participation rates for this age group. In Spain, 25–29 year olds' participation rates almost match those of the total prime age labour force.

Looking at employment numbers it does not make much sense to include the cohort of 20–24 year olds. As noted above their labour market participation is very low, thus observing them 10 years later will reveal higher employment even in the deepest recession. This fact works in our favour when looking at the change in the number of unemployed people (Figure 5, second graph). Looking at the 20–24 year olds in 2006 gives a relatively small absolute number of unemployed (due to low participation rates). Hence, the change in the number of unemployed is an upper bound for the change that would have been had this cohort been equally active on the labour market as older cohorts. The same applies for the 25–29 year olds in Italy and Greece. Again, looking across cohorts within countries it is not clear that the youngest cohort has been more affected by the crisis in absolute terms.

Part of the pattern observed in Figure 5 (second graph) is due to some out-mobility of predominantly young people. This is in particular the case of Greece and to a much smaller extent Spain and Italy. However, looking at the period 2006-2011 before mobility picked up (Barslund and Busse, 2013), reveals roughly the same pattern.

Figure 5

Changes in Employment and Unemployment for Different Cohorts, 2006– 2016



Note: Cohorts denoted by their age in 2006.
Source: Eurostat.

Finally, it is of interest to look at youth unemployment at the regional level because the youth employment initiative is targeted explicitly at regions. Figure 4 highlighted that some countries with lower youth unemployment rates have a larger share of young unemployed in total employment. The funds coming from the youth employment initiative were restricted to NUTS2 regions with youth unemployment rates in excess of 25 percent. With this rule, some regions where the share of youth in total unemployment was high would not qualify.

Figure 6 shows, at NUTS2 level, the combinations of youth unemployment rates and share of youth in total unemployment in 2012. It is apparent that the relationship between the two is rather weak. The cut-off line of 25 percent youth unemployment rate leaves out many regions where the youth actually constitute a large part of the overall unemployment problem. The average share of youth in total unemployment in regions with a youth unemployment rate of less than 25 percent is around 28 percent, whereas in regions with a rate above this threshold the young's share in total unemployment is 22 percent.

The main message is that regions with high youth unemployment in general have many unemployed people. Furthermore, some regions where the share of unemployment is high, are not covered by the youth initiative. Some of these regions also have sizeable populations of young unemployed.

LOST GENERATIONS? OR IS UNEMPLOYMENT WORSE FOR THE YOUNG?

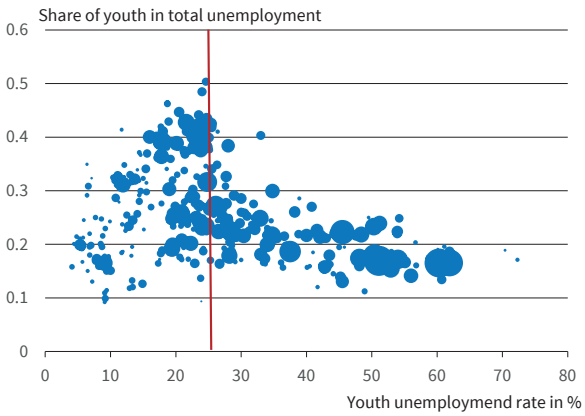
The fear of the young becoming a lost generation – permanently 'scarred' by early experiences of unemployment – is a persuasive argument in favour of promoting policy measures that target youth unemployment specifically. If the first labour market experience is crucial for subsequent labour market participation and earnings, there might be a case for policies promoting youth employment, though in a depressed economy this may be at the expense of employment of other age groups, even if the group of young unemployed only constitutes a small majority of the unemployed. This could be the case if, for example, the period immediately after graduation is sufficiently decisive for the rest of one's career.

The notion of 'scars' from unemployment comes from a large body of academic literature that looks into the short and long-term effects of unemployment spells on subsequent labour market outcomes, in particular, on labour market participation rates and earnings (Ellwood 1982).

The main question this literature is concerned with is assessing the counterfactual of what would, on average, have happened with subsequent earnings and labour market participation had a given individual not been unemployed for some period at an earlier stage.

Figure 6

Youth Unemployment and Share of Young Unemployed in Total Unemployment (NUTS2), 2012



Note: The size of point indicates relative total number of unemployment.
Source: Eurostat.

This is not an easy task as not only are individual traits correlated with early employment also associated with later labour success, but there is most likely a lot of heterogeneity in causal effects across those exact traits (e.g. skill levels, personality, non-cognitive skills). Hence, the literature on this question is quite extensive.

The vast majority of studies in this literature, however, only consider the youngest cohort. There is no clear consensus as to the effect of future earnings or subsequent increase in the probability of unemployment, which in all likelihood also depends on institutions related to the labour market and welfare state.[3] It is clear, however, that unemployment is associated with worse future outcomes on the labour market. We do not find agreement on the initial size and duration of these negative effects.

While nobody would be against helping unemployed youth, a key point of relevance for public policy, and indeed underlining the focus only on the young cohorts, is to what extent scarring is worse for younger than older cohorts, i.e. the relative effect rather than the precise magnitude. Unfortunately, there are few studies in the literature that look at the effect for different cohorts, but rather only at the impact on one cohort (which, in the majority of cases; is a young one). When age is investigated as part of the research question, the effects are worse for older (prime age) cohorts. In their review of studies based mostly on US data, Couch and Placzek (2010) only find articles where scarring increases with age and none where the opposite is the case (when this is investigated together). This fact is corroborated in their own application (see also Couch *et al.* 2009).

As for the magnitude of scarring, the survey of studies based on US data includes one study where scarring leads to a wage penalty of 8–13 percent after six years (with higher initial wage drops); other studies show larger scarring effects and a few show no permanent scars at all, since the initial effect on wages disappears after six years. Generally, results span the range from no long-term effect to wage penalties of up to 30–40 percent six years (or longer) after being unemployed. Studies based on data from continental Europe tend to show smaller effects of scaring than those based on US data (Couch 2001; Gaini *et al.* 2012).

In two much cited papers Arulampalam and co-authors (Arulampalam 2001; Arulampalam *et al.* 2000) investigate respectively the immediate scarring effect on wages upon re-employment, and the related scarring effect stemming from the fact that if you are unemployed now you are more likely to be unemployed in the future. Both papers find that the estimated scarring effect is higher for older people than for younger individuals. A similar qualitative conclusion is reached by Gregory and Jukes (2001). As is the case for the Arulampalam papers their data are from Britain. Gangl (2006) uses data from 11 continental European countries and find that scarring effects are larger for older workers. There are also studies on the scarring of youngsters that were raised by unemployed parents (Hilger 2016; Oreopolous *et al.* 2008). The literature finds modest to non-negligible second order effects on offspring.

There is one important qualifier to note in relation to the findings in the literature. Due to publication bias, the average impact of scarring is likely to be smaller than that which can be inferred from published studies. It is difficult to get a study published which does not find a scarring effect, thus it is likely that studies that failed to find scarring or had smaller insignificant results remain unpublished.

Evidence from Macro Data

The variability in the outcomes of micro studies of the scarring effect makes it difficult to assess the longer term macro effects. Evidence of wage scars, i.e. to what extent and duration a spell of unemployment lowers an individual's wage, are difficult to examine from the macro side. But potential scars on labour market participation and employment rates can be examined from aggregated data at the level of cohorts. One way to approach this is to look at past episodes of (large changes) in youth unemployment and investigate the impact on later employment and labour market participation. We provide two short examples in which one

[3] It is impossible to do a review that does justice to the literature. We cite papers so as to get an indication of the variability of outcomes for published studies.

cannot find any scarring effect at the aggregate level: one looking at employment, the other at labour force participation.

A first test of the 'lost generation' hypothesis can be gleaned from the deep recession of the 1990s. Specifically, we identified (large) increases in the unemployment rate of the age group of 20-24 year olds in the three 5-year periods, 1986–1991, 1991–1996, 1996–2001, among EU15 countries (where data is available). Two countries, Denmark and Finland, had large increases to the youth unemployment rate from 1986 to 1991, and ten countries had increases in the youth unemployment rate from 1991 to 1996. None of the countries examined saw an increase in youth unemployment from 1996 to 2001.

We focus on these periods because we can match changes in youth unemployment rates between successive 5-year cohorts to changes in employment rates between those some cohorts in the period from 2006 to 2011. That is, for changes in the youth unemployment rate between 1991 and 1996, the comparison is between employment rates of the 35–39 year olds in 2011 (the cohort exposed to the increase in youth unemployment while young) and employment rates of the 35–39 year olds in 2006 (exposed to lower levels of unemployment rates). The period for comparison, 2006-2011, is of course imperfect because in that year Europe was still in recession and hence one would expect lower employment rates for the 'treated' cohort, just for business cycle reasons. We adjust for this using an estimated employment to output elasticity from ECB (2016) together with the difference in the output gap between 2006 and 2011 to obtain the impact of the recession on employment. We then relate the adjusted difference in employment rates between the cohorts and ask whether there is any link to the differences in unemployment rates of these cohorts 15 years earlier. Table 1 presents the basic data.

Comparing employment rates of the cohort of 35-39 year olds in 2011 and 2006, we would expect to observe that the countries with the highest increase in unemployment in the 1990s show lower than 'normal' (given the post financial crisis recession) employment rates in 2011. However, we find that the cohort which experienced high unemployment in the 1990s did not end up having lower employment rates 15 years later. Two of the peripheral countries subject to financial tensions (Italy and Spain) show only 'normal' employment and the only real exception is Portugal, where employment was lower (for the cohort in question) than one would expect. Another example is provided by Finland and Sweden both of which had double digit increases in the youth unemployment rate between 1991 and 1996, but the cohorts which were young in 1996 had only higher employment rates when aged 35-39 than one would expect given the business cycle conditions of these countries.

The second example of a lack of a lost generation effect concentrates on labour market participation rates and the last recession. Given the magnitude of the recession, one should be able to find the lost generation effect among the 25–29 year olds in the aggregate data. For example, one would expect to find that the labour force participation rates of those who were young when the recession first hit would be lower subsequently because those experiencing a long unemployment spell would lose skills and give up looking for a job. One way to approach this is to look at the cross country correlation between the changes in youth unemployment rate (20–24 year olds) from 2001 to 2011 and the change in labour market participation rates of 25–29 year olds between 2006 and 2016. Figure 7 shows

Table 1

Change in Youth Unemployment and Employment Rates, Selected Cohorts

Country	Δ youth unemployment rate 1991–1996 (% pct.)	Δ employment rate, 35–39 y/o (2006–2011) (% pct.)	Δ output gap (2006–2011) (% pct.)	Adjusted Δ employment rate (business cycle neutral, 2006–2011) (% pct.)
Belgium	7	0.6	– 1.3	1.5
Finland	11.1	0.3	– 1.6	1.4
France	8.3	0.4	– 2.6	2.2
Germany	4.3	2.8	0.8	2.2
Greece	4.6	– 5.3	– 14.9	5.1
Italy	2.4	– 2.3	– 3.2	– 0.1
Luxembourg	5.4	0.6	– 3.5	3.1
Netherlands	0.4	– 0.1	– 1.4	0.9
Portugal	7	– 3.8	– 1.1	– 3.0
Spain	9.3	– 6.1	– 8.7	0.0
Sweden	14.1	0.3	– 2.7	2.2

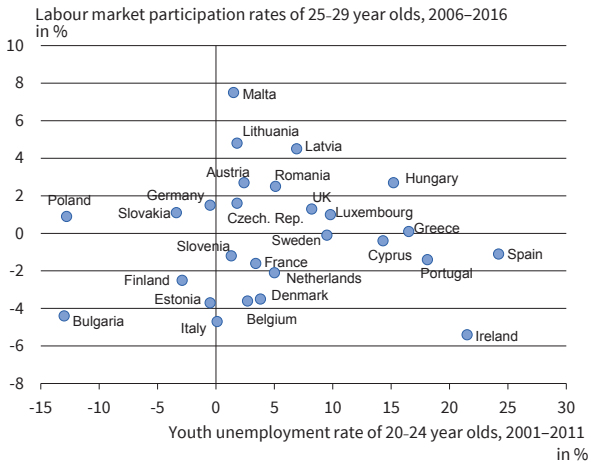
Country	Δ youth unemployment rate 1985–1991 (% pct.)	Δ employment rate, 40-44 y/o (2006–2011) (% pct.)	Δ output gap (2006–2011) (% pct.)	Adjusted Δ employment rate (business cycle neutral, 2006–2011) (% pct.)
Denmark	5.4	– 0.3	– 7.2	4.7
Finland	3.6	– 0.4	– 1.6	0.7

Note: Employment in 2011 is adjusted by applying an employment-GDP elasticity of 0.7 (ECB 2016). This implies an adjusted change in employment rates between 2006 and 2011 (column 4).

Sources: OECD Labour Market Statistics; Ameco database.

Figure 7

Changes in Youth Unemployment vs. Changes in Labour Market Participation Rates in the EU27



Source: Eurostat. © ifo Institute

a scatter plot of this 'difference-in-differences' approach for EU27 countries. There is a large variation in the difference with which the 20–24 year old cohorts were exposed to youth unemployment between 2001 and 2011, and an almost equally large variation in changes in outcomes. However, the correlation between the two is practically zero.

CONCLUSION

For EU27 as a whole; youth unemployment peaked at 23.5 percent in 2013. Since then youth unemployment rates have fallen, in line with economic growth, in almost every country across the Union. On average, youth unemployment has fallen by 5 percentage points so that it now stands at 18.8 percent, with France as a prominent outlier to this trend. How much of this fall – if any – that can be attributed to the Youth Guarantee and how much to the recovery of the economy awaits detailed assessment in each member state. The official assessments are likely to find that the Youth Guarantee has been very effective. We do not propose a detailed evaluation of its impact, which would have to take into account national characteristics, such as implementation capacity, structure of youth unemployment and labour market institutions. We would argue that a priori evidence of the impact of the Youth Guarantee scheme should be found in a decline in youth unemployment relative to overall unemployment. That is, the Youth Guarantee should be considered a success if the incidence of youth unemployment has declined by more than one would expect given the decline of the overall unemployment rate due to the recovery of the business cycle and the historical relationship between the two. The ratio youth to overall unemployment should thus be the key variable to consider. However, this ratio has not changed significantly over the last years; for example, for Spain it was 2.3 in 2012 and 2.4 in 2016.

A spell of unemployment is always a disruptive event, at any age. At 18.6 percent, the youth unemployment rate in the EU27 remains a major policy concern that warrants full attention, but so is the unemployment of older workers, even if the unemployment rate among older (or rather not young ones) workers, at 8.6 percent is only about one half. The public debate and policy initiatives have focused one-sidedly on youth unemployment. We do not find this partial approach overly convincing. In fact, one can argue that the young in many instances are in better shape to react to unemployment, either by relocating if possible, or going back to education, options which may be harder to choose for older individuals, especially those with dependents. Thus, even if scarring is worse for young people, something we do detect in the literature, the case for targeting youth unemployment is not clear-cut. The economic literature has focused on partial effects whereas policy makers must trade off the impact on different groups when designing policy. We provide evidence from macroeconomic, aggregate data which suggest that there has been no lost generation effect. Labour force participation rates have actually increased in the aggregate and there is little evidence that the very headline high youth unemployment rates have led to a lost generation.

REFERENCES

Arulampalam, W. (2001), "Is Unemployment Really Scarring? Effects of Unemployment Experiences on Wages", *The Economic Journal* 111, 585–606.

Arulampalam, W., A.L. Booth and M.P. Taylor (2000), "Unemployment Persistence", *Oxford Economic Papers* 52, 24–50.

Barslund, M. and D. Gros (2013), *Unemployment Is the Scourge, Not Youth Unemployment Per Se: The Misguided Policy Preoccupation with Youth,* CEPS Policy Brief 294.

Barslund, M. and M. Busse (2014), "Labour Mobility in the EU: Dynamics, Patterns and Policies", *Intereconomics* 49, 116–158.

Casado, J.M., C. Fernández and J.F. Jimeno (2015), *Worker Flows in the European Union during the Great Recession,* ECB Working Paper 1862.

Couch, K.A. (2001), "Earnings Losses and Unemployment of Displaced Workers in Germany", *ILR Review* 54, 559–572.

Couch, K.A., N.A. Jolly and D.W. Placzek (2009), "Earnings Losses of Older Displaced Workers: A Detailed Analysis with Administrative Data", *Research on Aging* 31, 17–40.

ECB (2016), *The Employment-GDP Relationship since the Crisis*, ECB Economic Bulletin 6/2016.

Ellwood, D.T. (1982), "Teenage Unemployment: Permanent Scars or Temporary Blemishes?", in: Freeman, R.B. and D.A. Wise (eds.), *The Youth Labor Market: Its Nature, Causes and Consequences*, Chicago: University of Chicago Press, 349–390.

European Commission (2012), *Proposal for a Council Recommendation on Establishing a Youth Guarantee*, European Commission COM(2012) 729 final.

Gaini, M., A. Leduc and A. Vicard (2012), *A Scarred Generation? French Evidence on Young People Entering into a Tough Labour Market*, Institut National de la Statistique et des Etudes Economiques, DESE.

Gangl, M. (2006), "Scar Effects of Unemployment: An Assessment of Institutional Complementarities", *American Sociological Review* 71, 986–1013.

Gregory, M. and R. Jukes (2001), "Unemployment and Subsequent Earnings: Estimating Scarring among British Men 1984–94", *The Economic Journal* 111, 607–625.

Hilger, N.G. (2016), "Parental Job Loss and Children's Long-Term Outcomes: Evidence from 7 Million Fathers' Layoffs", *American Economic Journal: Applied Economics* 8, 247–283.

Oreopoulos, P., M. Page and A.H. Stevens (2008), "The Intergenerational Effects of Worker Displacement", *Journal of Labor Economics* 26, 455–483.

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Youth Education and Employment – Recent Danish Reform Experiences

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INTRODUCTION

Youth unemployment has both individual and societal costs, which makes it a major policy challenge. It is well established that entry into the labour market is of crucial importance for later labour market trajectories. This has both a business cycle and a structural component; employment rates for youth are generally more cyclically sensitive than for other age groups, and youth entering the labour market with weak qualifications are particularly vulnerable throughout their working career.

In the wake of the financial crisis, all OECD countries experienced an increase in youth unemployment, but even before the crisis, the share of youth in neither employment, education nor training was high in many countries – see Figure 1. Youth not acquiring relevant labour market qualifications are a major challenge, since they belong to a group with a high risk of becoming marginalised throughout their working lives a risk which is not diminishing given technological change, globalisation etc. While the NEET rate in Denmark is below the OECD average, it has been on an upward trend. Although there has been much focus on the so-called Danish flexicurity model's ability to attain a low unemployment rate, the issue of youth entering the labour market with weak qualifications is a challenge, also in a Danish context.

In countries with extended welfare arrangements, such as Denmark, the share of cohorts without labour market relevant education is a particular challenge. It is a fundamental policy goal to reconcile a high employment rate with decent wages (no working poor). The wage structure is compressed and minimum wages are high in an international comparison, and therefore the qualification requirements to find jobs are high. A high employment rate is also crucial for maintaining a relatively equal distribution of income, but it is also a precondition for the financial viability of the welfare model, since lower employment both increases expenditures on social transfers and lowers tax revenues. The importance of the employment level is politically well understood, and recurrent reforms have focussed on strengthening labour supply and employment.

The share of the working age population receiving various public transfers has gained increasing political attention. While it is difficult to change the labour market prospects of groups which have either entered the labour market with weak qualifications or been unemployed for prolonged periods, there is a large scope for improving the entry conditions for youth to reduce the risk that they become marginalised and highly dependent on social transfers. This brings both the incentive structure and the role of education to the fore.

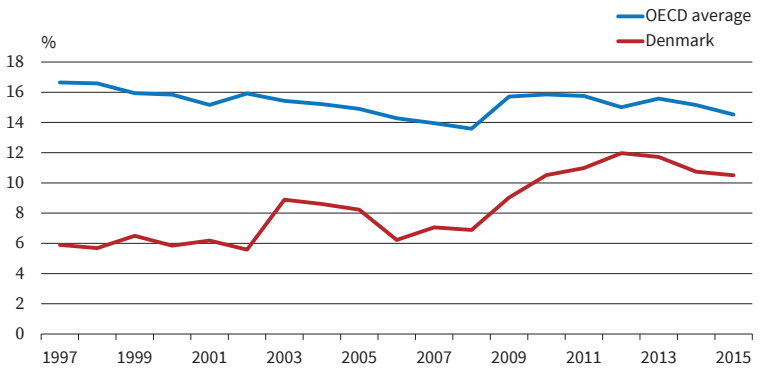
The Danish welfare model – as in other Nordic countries – offers largely publicly financed education (including study grants) as well as a relatively generous social safety net. Still, it is a particular concern that about $^1/_5$ of a cohort does not get a labour market relevant education. It is also well established that low educated persons are overrepresented among groups marginalised in the labour market with frequent unemployment spells and among the long-term unemployed; see e.g. Danish Economic Council (2015).

Accordingly, there is a strong policy focus on the educational level of youth, and in particular on reducing the share of a cohort not obtaining any labour market relevant education.[1] One key issue is whether the social safety net has the proper balance between incentives and insurance. In relation to education, there is a possible tension between short-run insurance/distribution concerns and the long-run effects on education and human capital. Is it possible that too generous insurance for youth can have detrimental effects on education incentives, and thus impair the possibilities of attaining welfare state objectives in the medium to long run?

[1] It is a policy target that 95 percent of a cohort should obtain a general and vocational upper secondary education measured 25 years after having completed compulsory schooling.

Figure 1

Share of Youth Neither in Employment, Education Nor Training (NEET)
OECD average and Denmark, 1997–2015



Source: www.oecd-ilibrary.org.

This article discusses recent reform efforts in Denmark aimed at increasing the educational level and employment rates for youth. The following section provides a short outline of key features of the Danish welfare model of importance for the education and employment incentives for youth. Recent reforms are described in the third section, and developments and effects of these reforms are discussed in the fourth section. A few concluding remarks are given in the fifth section.

SOCIAL SAFETY NET DESIGN

All elements of the Danish social safety net pertaining to people in working age groups have been overhauled in recent years with the overarching aim of strengthening labour supply and employment. An important element in these reforms is changes in the social assistance scheme (cash benefits) constituting the ultimate floor of the social safety net. Social assistance provides support to those who are unable to support themselves or their family (means-tested on a family basis).[2]

Unemployment insurance in Denmark is voluntary, partly financed by membership fees and taxes. Eligibility depends on fulfilling criteria of employment in the three-year period preceding unemployment. Benefit duration is 2 years within a three-year period, and unemployed transit into the social assistance scheme when their benefit duration ends.

Education is publicly provided without any user charges, and study grants are generous by international standards. Although there are quantity restrictions (on top of qualification requirements) on entry into some education programmes, the intake is largely demand-determined.

There is a possible tension between the social safety net and educational incentives. While study grants are relatively generous, they are significantly below wage income, also for unskilled. From an education perspective, this is motivated by education being an investment, and the low income while studying is compensated by higher income later in life. The social safety net for people in the working-age population is designed to offer income support or insurance in case of failure to support oneself in case of unemployment, sickness, etc. The level of benefits is thus determined with a focus on the replacement rate, and the level is therefore significantly above study grants.

Income insurance and educational incentives are thus at a possible conflict. As an example, the study grant constituted (pre recent reforms) about 50 percent of the social assistance to a single person. This may create an 'educational trap' for non-educated youth, since commencing an education would in the short run lead to a fall in income compared to receiving social assistance benefits. This, in combination with habit formation in relation to living standards and/or myopia related to the assessment of future gains from education, may be an obstacle to education.

It has also been argued that the insurance, and thus the level of social assistance, provided for the young should differ from that offered to more mature individuals, since the insurance should be seen relative to what one could expect as young and relative to the income of peers (in education). This is related to the issue of whether the incentive to be in work is sufficiently strong, which is much debated.

In short, how to balance insurance and incentives of welfare arrangements for youth in relation to both education and work is far from trivial. In this light, it is not surprising that recurrent changes in the design of the social safety net and labour market policies are taking place.

SOCIAL ASSISTANCE REFORM

A large reform of the social assistance (cash benefit) scheme took effect in January 2014 to strengthen work incentives. In the present context, the changes for youth are interesting because they introduce both an age and an education contingency into the eligibility conditions in the basic part of the social safety net.

The reform makes an age distinction at 30. Different and stricter rules apply for individuals below the age of 30. A distinction is made between those holding a labour market relevant education and those who do not. For the former group, social assistance benefits are the same as for those above the age of 30, but more strict activation requirements apply.

In recent years, activation policies have been changed from a rather rigid scheme to a more flexible system with a stronger focus on the situation of the individual and relying more on job-search/matching than programme participation, as well as incentives to ensure a quicker return to employment.[3] In the first part of an unemployment spell (3 months for persons below age 30, 6 months for persons aged 30 to 49, and 3 months for persons above age 50), the main intervention consists of meetings and counselling to strengthen and target job-search, and further into the unemployment spell this is followed by programme participation (a right and a duty).

Persons in the age group below 30 without a labour market qualifying education are no longer eligible for the normal social assistance but for the so-called education assistance (education cash benefits), which is at the level of study grants.[4] As an example, for a single, the benefit is reduced by almost 50 percent compared to benefits available before the reform (less for parents with dependable children). Moreover, there is full-time

[2] The scheme is not universal. Entitlement requires residence in seven out of the last eight years (since September 2015). There are also conditions dependent on past employment records determining benefit levels, see below.

[3] All unemployed also have a right to participate in an education programme lasting up to six weeks (individually chosen from a short-list).

[4] Similar rules existed already for those below the age of 25, and the reform extended those principles to the age group between 25 and 29. The reform also implies that youth under 25 without a qualifying education can only receive education cash benefits.

activation in the form of education – an 'education mandate' – which means that ordinary education should be commenced (unless they find employment). If there is an interim period until education starts, the individual is in full time activation. Individuals not assessed as being ready for education are, as a rule, offered initiatives to prepare them to undertake and complete an ordinary education within one year. For those not considered capable of completing a labour market relevant education, a special programme is offered. Recipients not ready for education or employment may receive a so-called activity supplement when participating in activation programmes.

The so-called Job Market Reform I, which was implemented in the autumn of 2016, further changed the social assistance scheme. The key elements are: (i) a ceiling on the total public transfers a family/person can receive (social assistance/education cash benefits, housing supplements, and special allowances); and (ii) an employment criterion requiring at least 225 hours in (non-subsidized) work within the last 12 months to receive full benefits (a reduced or no benefit is received if the employment condition is not met).

A key motivation of the reform is to strengthen incentives for both work and education. The reduced benefit level aims to strengthen work incentives. Removal of short-run economic disincentives to education as well as activation in the form of ordinary education is intended to reduce the group of youth without a labour market relevant education. The flipside of these initiatives is reduced income support to youth without a job.

The activation part includes the usual motivation, locking-in and programme effects. Using ordinary education as an activation programme (effectively mandatory education) is a new element in activation policies, where specific short-term courses and programmes targeted at the unemployed were usually applied. If programme participants succeed in obtaining a labour market relevant education, this likely provides a more robust platform than the various short-term courses. Mandatory education raises a number of questions. If youth have abstained from education due to habit formation or myopia, a mandated education may work. However, in most cases individuals belonging to the target group (age group 25–29) have been enrolled in an education at some point in time, and failed to complete the education. Whether drop-out is due to lack of motivation or weak proficiencies is unclear, but in either case it is not clear whether a mandate would overcome those barriers. It is easy to make people enroll in education if it is a take-it-or-leave-it offer, but it is difficult to bring it to a succesful completion.

DEVELOPMENT AND REFORM EFFECTS

In the wake of the financial crisis, the employment and labour force participation rates have been falling (and increasing since 2014). The fall in the participation rate reflects a significant increase in the share of young in education, see Figure 2, reflecting the cyclical component in educational in-take. The Danish economy was booming prior to the financial crisis with a very low unemployment rate. In the subsequent recession – which has been particularly deep in Denmark – the intake to education increased. This is to be expected irrespective of any reform, in particular in a system with public financing of education and largely free access. In comparison to most other OECD countries, Denmark has seen a large decrease in the age group 20–29 in the labour force, which is the flipside of an increasing intake in education. This contributes to the recent fall in the NEETs rate – see Figure 1.

The effects of the reform of the social assistance scheme should be seen against this background. Has the reform succeeded in making more youth in the target group either find employment or commence an education?

For the age group 25–29, the immediate effect of the reform was to shift a substantial part of the group from cash benefits to education benefits, and therefore into 'education activation'.[5] This is a direct effect of the reform and the fact that youth below the age of 30 without a qualifying education can no longer obtain social assistance. Around the time of reform implementation (which was announced with a lead time of about eight months), there is a noticeable decline in the total number of persons on benefits, see Figure 3, but later the number has increased again.[6]

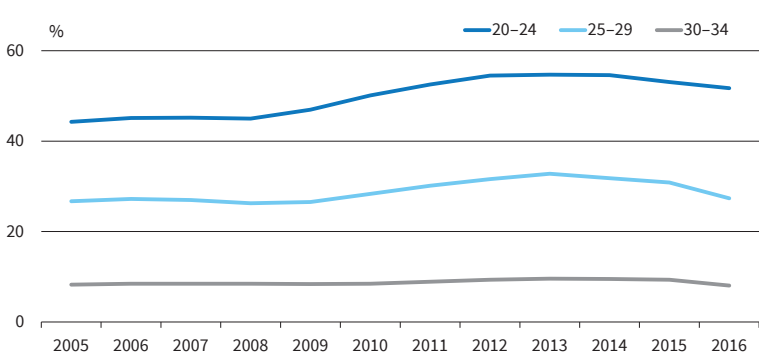
[5] Note that individuals in the age group without a qualifying exam and without entitlement to unemployment insurance are eligible for social assistance if they are unable to support themselves.

[6] There has been a trend increase in immigrants receiving social assistance, integration benefits or education cash benefits in recent years. The composition

Figure 2

Education Enrolment Rates

Percentage of age group population, 2005–2016



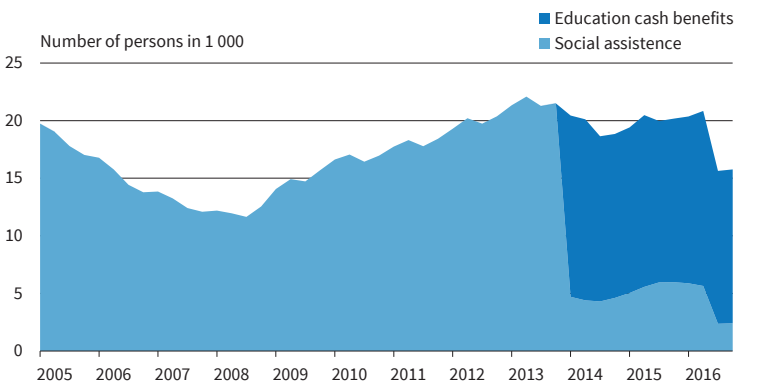
Note: Enrolment into education per October 1st each year as percentage of total population in the respective age groups.

Source: Statistics Denmark (www.statistikbanken.dk). © ifo Institute

Figure 3

Number of Claimants of Social Assistance or Education Assistance

Denmark, 2005.I- 2016.IV



Source: www.jobindsats.dk.

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A better outset for assessing the effects of the reform is given by Figure 4, showing the post-financial crisis development in the number of recipients of social assistance or education cash benefits among different young age groups. The trend decline for the age group 16–19 matches the trend increase in education intake, see Figure 2. For the age group 30–34 there has been a steady increase over this period. For the age groups 20–24 and 25–29 the developments have been more volatile, but very similar. Around the time of implementation of the reform, there was a clear decline in the number of persons claiming social or education cash benefits, indicating an increased outflow into either employment or education. However, later the number of claimants increased, and in mid-2016 (before Job Market Reform I) it reached the same level as before the reform.

Note that for all age groups, there is a marked decline in the total number of benefit recipients after the implementation of Job Market Reform I in 2016. The main reason is the employment criterion required to qualify for full benefits. This reform element has thus accomplished a fall in expenditures on social benefits, but it is too early to assess whether the reform has succeeded in bringing more people in employment (or education) or whether they are self-supporting.

There are a few studies exploring the effects of the reform for the age group 25–29 that exploit individual data. Both the Ministry of Employment (2014 and 2016) and the Council of Economic Advisors (2015) find that the reform reduced the inflow to and the outflow from the group of benefit recipients. The largest effect on outflow is into education, but there is also evidence of a positive employment effect. These studies focus on the effect immediately after the implementation of the reform.

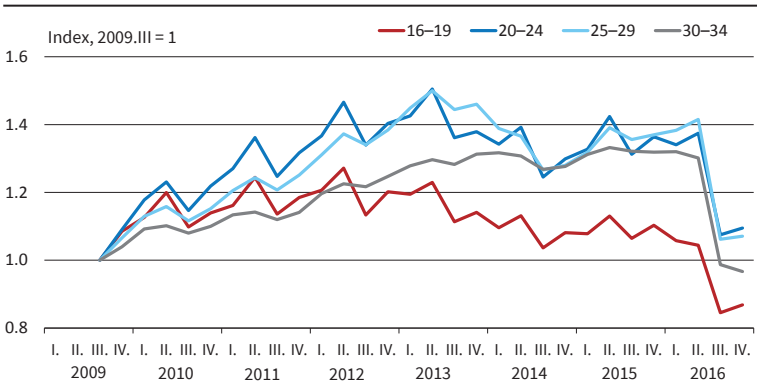
The later experience, especially the fact that the developments for the age groups 20–24 and 25–29 have been very similar both before and after the reform and the subsequent increases in the total number of claimants (despite an increasing employment level), suggests that the reform has not caused a major trend change in the number of youth claiming benefits. One aim of the reform was to make more youth complete qualifying education or attain a more stable employment relationship, but it is premature to assess whether the reform has succeeded in achieving this.

of the age group has thus changed over the reported period. Considering the group of Danish origin, there is a more clear downward trend in the total number of benefit claimants, but it remains above the level in 2009.

Figure 4

Number of Claimants of Social and Education Assistance

2009.I–2016.IV



Note: Non-seasonally adjusted data.

Source: www.jobindsats.dk.

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CONCLUDING REMARKS

The role of qualifications for individual labour market options is well established, and therefore a high NEETs rate is problematic. Denmark offers free tax financed education, which should make the educational barrier less binding than in other countries. Distributional aims also imply more ambitious targets for those obtaining a labour market relevant education. Yet, the share of a cohort not obtaining a labour market relevant education is relatively high. This suggests that a multitude of reasons explain why a significant share of youth does not obtain a labour market relevant education.

Recent reform initiatives have aimed at strengthening the incentives of youth to be either in employment or education, and thus to reduce the NEETs rate. The experience so far is mixed. On the on hand, some evidence points to positive effects on employment and in particular education for the targeted groups, and, on the other

hand, that there is no trend decline in the share of youth depending on social benefits, before the implementation of an employment criteria as part of the eligibility criteria.

It is too early to judge the full effect of the reform, since it requires not only youth to commence an education but also to complete it successfully. One interpretation of the difficulty in overcoming the educational barrier for individuals in their late 20s is that the barriers should be addressed much earlier. Most persons in the target groups have been enrolled in education before – without completing it – and this points to the importance of early intervention (primary school or earlier) as a more effective tool in overcoming educational barriers.

REFERENCES

Andersen, T.M. (2015), "The Danish Flexicurity Labour Market during the Great Recession", *De Economist* 163, 473–490.

Council of Economics Advisors (2015), *Dansk Økonomi – Efteråret 2015 (Danish Economy – Autumn 2015),* Copenhagen.

Danish Ministry of Employment (2014), *Evaluation of the Youth Initiatives in the Social Assistance Reform 2014 (Effektevaluering af ungeinitiativerne i kontanthjælpsreformen 2014)*, Copenhagen.

Danish Ministry of Employment (2016), *Effect Study of the Social Assistance Reform for Youth between Age 25 and 29 (Effektanalyse af kontanthjælpsreformen for unge mellem 25–29)*, Copenhagen.

EEAG (2016), *The EEAG Report on the European Economy,* Munich: CESifo.

OECD (2016), *OECD Economic Surveys – Denmark*, Paris.

Gabriel Felbermayr and Jasmin Gröschl

Free Trade from Lisbon to Vladivostok: Who Gains, Who Loses from a Eurasian Trade Agreement?[1]

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INTRODUCTION

When Vladimir Putin came to Berlin for a summit meeting on 26 November 2010, one focus topic, among other things, was free trade. One big aspect was the question of when Russia would finally join the World Trade Organization (WTO), after 17 years of ongoing negotiations. Another essential point was that the German Chancellor Angela Merkel had to reply to Putin's proposal to establish a free trade area (FTA) with the EU 'from Lisbon to Vladivostok'. Already in 1989, Helmut Kohl and Mikhail Gorbachev had spoken of a 'Common European Home' also including close economic cooperation.

In August 2012, Russia finally joined the WTO; but the idea of an FTA was perceived with caution in Berlin. The German Chancellor described the idea as a 'vision for the future' and said "Europe and Russia are strategic partners who certainly have not yet fully exploited their potential of cooperation". However, no concrete steps were taken, and ever since the escalation over the association agreement between the EU and Ukraine in November 2013, the strategic differences in trade policy between the EU and Russia have become obvious.

Proposals to cooperate more closely with Russia in order to provide incentives for a peaceful settlement of the Ukraine conflict are constantly being discussed. In January 2015, for example, Chancellor Merkel said at the World Economic Forum in Davos: "*it would be desirable to first create stability on the basis of the Minsk Agreement. We can then consider the possibilities for cooperation between the European Union and the Eurasian Union in a larger context, which was already named by President Putin 'from Vladivostok to Lisbon'. This must definitely be our goal*".

[1] This article is a summary of a more comprehensive study (Felbermayr *et al.* 2016) carried out by the ifo Institute on behalf of the Bertelsmann Foundation. The study can be found at https://www.bertelsmann-stiftung.de/de/publikationen/publikation/did/freihandel-von-lissabon-bis-wladiwostok/.

Since then, the subject has again faded from the spotlight. The question of relations with Russia has been overshadowed by other aspects: the refugee crisis, Brexit or the future economic policy of the United States. Meanwhile, economic integration among former Soviet states is progressing. The Eurasian Economic Union (EAEU), founded on 1 January 2015, has five members: Armenia, Belarus, Kazakhstan, Kyrgyzstan and Russia. Tajikistan is considering membership and appears to be preparing for EAEU accession. The EAEU has emerged from the Eurasian Economic Community (a customs union) and has the goal of establishing a single market inspired by the EU model.

Paradoxically, the election of the free-trade sceptic Donald Trump as the 45th US President could help stimulate an agreement between the EU and the EAEU. A transatlantic trade agreement between the EU and the United States is now far off. This frees negotiation capacities in the EU. Moreover, Trump has put *détente* with Russia on the agenda, so a slow return to normal conditions between East and West is more likely. If Trump withdraws militarily from Europe, an understanding with Russia will be all the more important for the EU as maintaining confrontation would entail high additional armament costs. Such considerations are not yet reflected in the EU's actions. Only recently have the EU countries extended sanctions against Russia for another 6 months until June 2017.

Similar to the EU, the EAEU concludes trade agreements with third countries and is represented by a Commission. An agreement already exists with Vietnam; other already existing bilateral agreements, such as the FTA between Russia and Serbia, will have to be transformed into EAEU agreements. Theoretically, members of the EAEU cannot conclude separate agreements with third countries, similar to individual EU member states. For example, Armenia or Ukraine cannot be EAEU members and, at the same time, have a separate association agreement with the EU. In this area of tension, Armenia has settled for the EAEU, while Ukraine has opted for an agreement with the EU.

The EAEU is a fact, even if the institutional design still raises many questions. For example, a central member of the Union, Belarus, is not yet a member of the WTO, and power relations within the Union are highly asymmetrical due to the dominance of Russia. A trade agreement with the EAEU could hold significant economic benefits for EU member states. In fact, Russia's economic structure, with its focus on raw materials and basic industries, is complementary to that of the EU. However, resistance within the EU is still large. As long as the Ukraine conflict is not resolved, it is hard to imagine a free trade deal. Nevertheless, such a pact could be an integral part of a new strategic partnership between the EU and Russia, within which military conflicts may also be addressed. The chances of a rapprochement with Russia are at present possibly better than within the last few years: it seems that the American President Donald Trump would like to put the rela-

tionship with Russia on a new pragmatic basis, and Britain – so far a dedicated opponent of Russia – is on its way to leave the EU.

To date, there has been no quantification of the economic effects of a trade deal between the EU and the EAEU, involving other countries with whom both Russia and the EU maintain trade agreements (especially Ukraine).[2] In spring 2016, the ifo Institute carried out an initial assessment of the trade and income effects of such a trade deal on behalf of the Bertelsmann Foundation. This article presents the key results and central findings.

INITIAL SITUATION

The Soviet Union was an integrated economic area with a single currency, a single market and a single foreign trade policy. The result was a highly integrated economic space with industrial value added chains that linked Soviet republics with strong manufacturing sectors, such as Russia, Ukraine and Belarus, and the resource rich central Asian ones. The emergence of independent states endangered this system. Therefore, soon after the collapse of the Soviet Union, the former member states (excluding the Baltic republics) concluded a free trade agreement – the Commonwealth of Independent States (CIS). One problem, however, was the necessity of cumbersome rules of origin, which were costly to maintain and which brought with them legal uncertainties. As a result, some members joined forces in 1997 to form a customs union. In 2012, the relations of the customs union members with other former Soviet countries were deepened in an extended FTA. Finally, in 2015, the customs union was institutionalised through the creation of the EAEU. Table 1 gives an overview of trade agreements and their members. It becomes apparent that the post-Soviet space is economically fragmented and characterised by a multiplicity of overlapping agreements.

Another characteristic of the trade policy of the former Soviet republics was the absence of an active external liberalisation agenda. Russia has only one trade agreement that is notified to the WTO and is outside the CIS, namely with Serbia. Negotiations with EFTA (Norway, Iceland, Liechtenstein and Switzerland) and New Zealand were put on hold during the Ukraine crisis.

Russia, as the central player of the EAEU, is internationally isolated with respect to its trade policy and has hardly any options other than to conclude agreements with countries outside the influence of the United States and the EU. The EAEU strives to conclude trade deals with third countries, but there is little transparency about the activities. In addition to the agreement with Vietnam, a trade deal with China is said to be negotiated. And, according to press reports, Iran, India, and Turkey are also on the list.

The relative economic strength of Russia is decreasing. While the country still accounted for about 3.8 percent of global economic output in 2015, its share will fall to 2.6 percent in 2016, according to our projections based on demographic trends and as a result of the catching up of other emerging economies. Russia should therefore be strongly interested in concluding trade deals, since its negotiating power – the size of its own internal market – will be less significant in the future.

EU – EASTERN TRADE: STATUS QUO

EU trade with the former states of the Soviet Union developed only modestly during the first ten years after the end of communism. Above all, this can be traced back to difficulties of adapting to the open market economy environment. At the beginning of the new millennium, however, trade relations became much more dynamic. Total trade with Russia has almost increased six-fold from just over 60 billion euros to nearly 380 billion euros in 2008. The global financial and economic crisis of 2009 led to a slump, and trade reached its pre-crisis level again only in 2012. In the wake of the Ukraine crisis, Western countries introduced sanctions against Russia, and Russia issued an embargo against the EU; this has led to a collapse of trade. More important than trade policy measures, however, was the sharp collapse in world market prices for important raw materials (mainly oil): the resulting recession in Russia has also impacted trade relations. Total trade with the other

[2] About 20 years ago, Brenton *et al*. (1997) analysed the trade effects of a free trade agreement between the EU15 and Russia. Parallel to our analysis, a team of researchers at the Institute for International Systems Analysis (IIASA) in Vienna has also proposed a study (Vinokurov *et al*. 2016).

Table 1

Trade agreements on the territory of the former Soviet Union

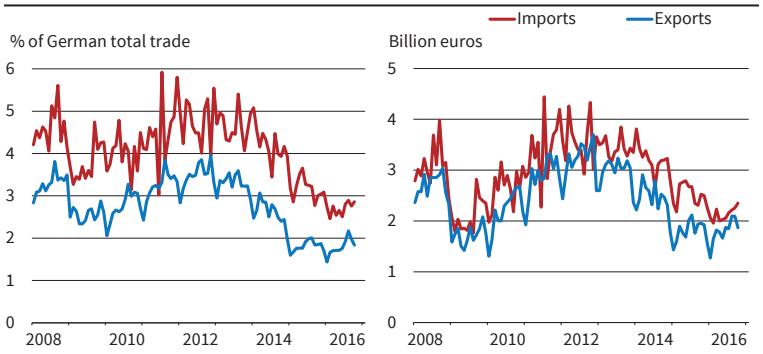
Agreement	CIS	CIS-FTA	EAEC	EAEU
Founding year	1994	2012	1997	2015
Type of agreement	FTA	FTA	CU	CU+EIA
Member:				
Armenia	X	X		X
Azerbaijan	X			
Belarus	X	X	X	X
Georgia	X			
Kazakhstan	X	X	X	X
Kyrgyzstan	X	X		X
Moldavia	X	X		
Russia	X	X	X	X
Tajikistan	X	X	X	
Turkmenistan	X			
Ukraine	X	X		
Uzbekistan	X			

Notes: CIS = Commonwealth of Independent States, FTA = free trade agreement, CU = customs union, EIA = economic integration agreement, EAEC = Eurasian Economic Community, EAEU = Eurasian Economic Union.

Source: WTO.

Figure 1

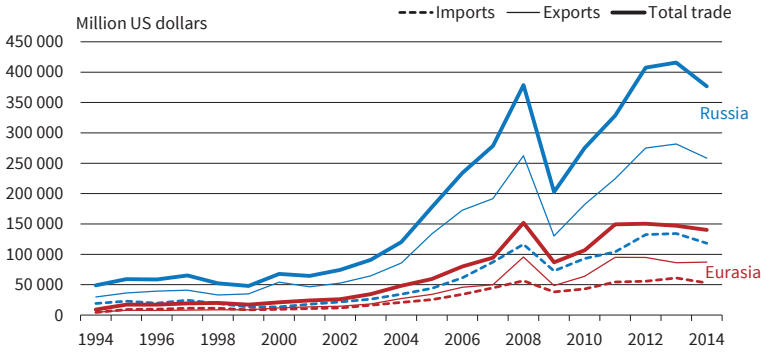
German Trade with Russia: Januray 2008 to October 2016



Source: Destatis. © ifo Institute

Figure 2

Trade Volume of Europe with Eurasia and Russia



Source: IMF DoTS. © ifo Institute

countries of the former Soviet Union is comparatively stable, but at a significantly lower level (about 1/3 of Russian trade).

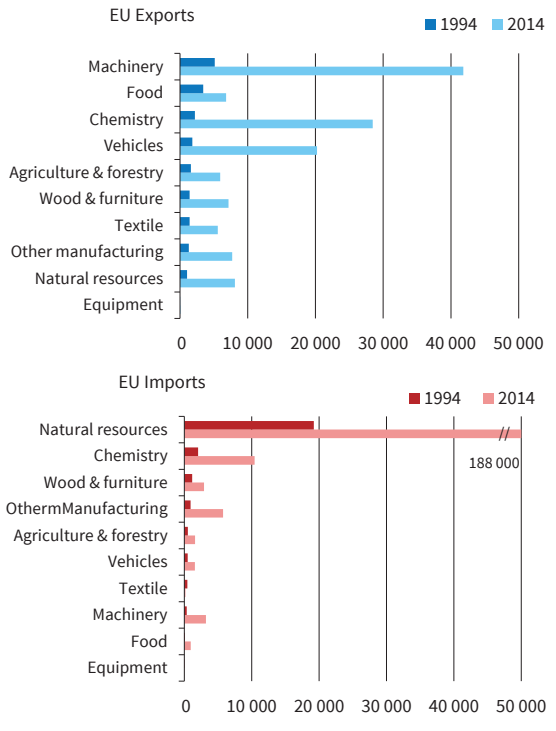
EU exports to Russia amounted to about 140 billion US dollars in 2014, while imports total 258 billion US dollars. Therefore, the EU has a considerable trade deficit with Russia. By contrast, trade with the other Eurasian countries is significantly lower: exports of 87 billion dollars are counterbalanced by imports worth 53 billion US dollars (see Figure 2). The EU thus has a trade surplus with this group of countries.

EU imports from Russia are heavily concentrated in raw materials (see Figure 3). In 2014, imports of natural resources (mainly mineral oil, gas and metal) amounted to about 188 billion euros; since 1994 imports in these industries have increased almost tenfold. Contrasting this, imports in chemicals (approx. 10 billion US dollars) or machinery (approx. 3 billion US dollars) are very modest.

Exports from the EU to Russia, however, are diversified. Machi-

Figure 3

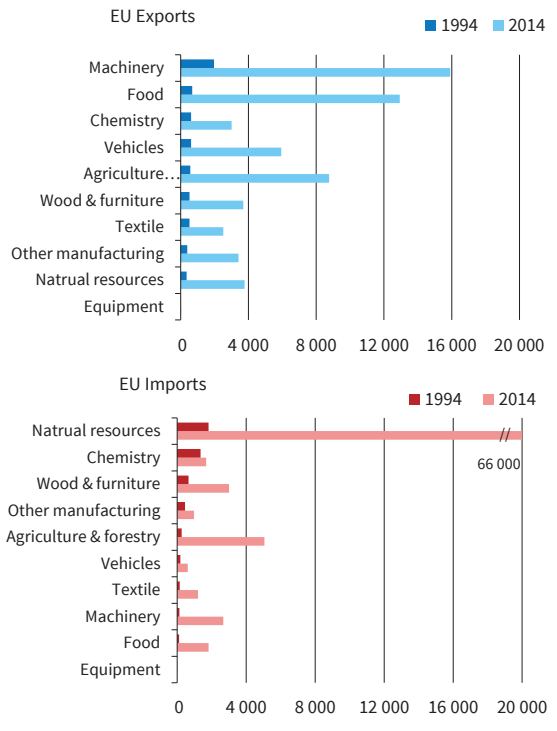
Sectoral Structure of Trade between the EU and Russia
1994 and 2014, million US dollars



Source: UN COMTRADE/CEPII BACI. © ifo Institute

Figure 4

Sectoral Structure of Trade between the EU and EAEU Countries, 1994 and 2014, million US dollars



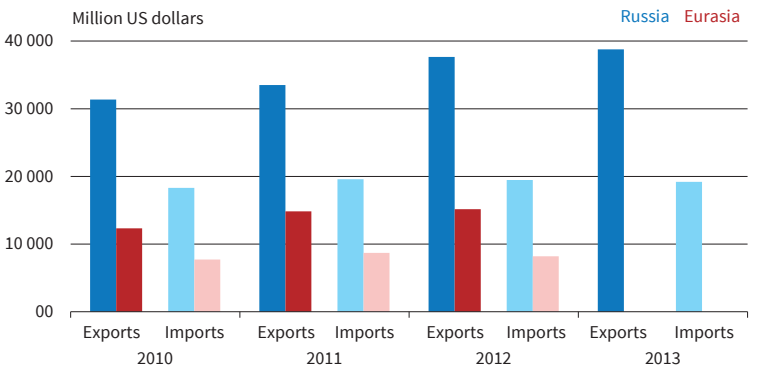
Source: UN COMTRADE/CEPII BACI. © ifo Institute

nery (approx. 42 billion US dollars) and chemicals (about 28 billion US dollars) dominate, followed by the export of vehicles amounting to around 20 billion US dollars. To a relatively small extent Europe also exports food products to Russia (about 7 billion US dollars). Overall, the trade balance of the EU with Russia is strongly negative.

The structure of European external trade with other countries of the Eurasian Economic Union (EAEU) is similar to that of Russia (see Figure 4). Raw materials (66 billion US dollars), mainly oil and gas, again dominate. Compared to this the runner-up product category – agricultural and forestry products – represents only about 5 billion US dollars. This shows the strong dependency of the regions' exports to the EU on resources and raw materials. Again the EU is well diversified on the export side, which is dominated by machinery (16 billion US dollars) and chemicals (13 billion US dollars). Exports of vehicles amount to 6 billion US dollars, whereas raw materials total at 9 billion US dollars. While the EU has a trade deficit in goods with Russia, it has a surplus of about 20 billion US dollars (data from 2013, see Figure 5) in services. The surplus with the other Eurasian countries in services amounts to about 7 billion US dollars (data from 2012, see Figure 5).

Figure 5

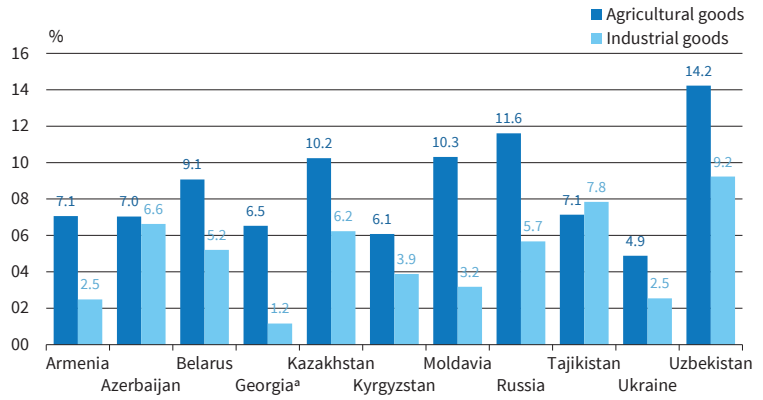
Import and Export of Services of EU28 with Russia and Other Eurasian Countries



Source: OECD TISP. © ifo Institute

Figure 6

Import-Weighted Average Tariffs, CIS Countries, 2014

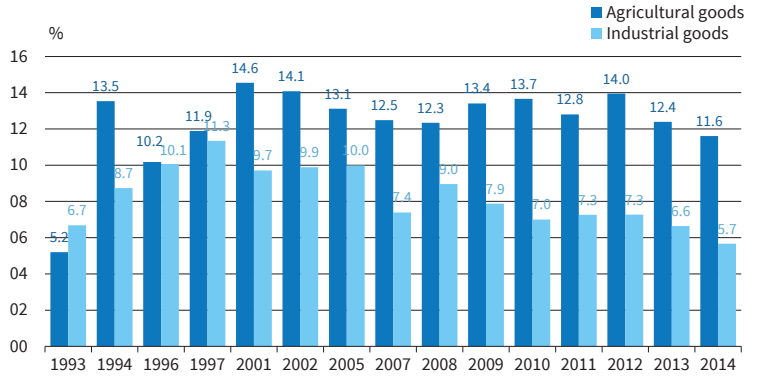


[a] Data from 2013. Data for Turkmenistan not available.

Source: WITS-TRAINS. © ifo Institute

Figure 7

Import-Weight Average Tariffs, Russia over Time



Source: WITS-TRAINS; illustration by ifo Institute. © ifo Institute

TRADE BARRIERS: STATUS QUO

Compared to other trading partners of Europe, the countries of the former Soviet Union (CIS) have maintained relatively high import duties. Tariffs amount to about 6 percent for industrial goods in Russia, while in agriculture they are nearly twice as high. Given this, Russia belongs to the upper third of the countries shown in Figure 6. Import duties are highest in Uzbekistan, but the Russian market is relatively closed as well, especially with respect to the agricultural sector. Interestingly, the weighted average tariff of Belarus – not yet a member of the WTO – is relatively lower for both industrial and agricultural goods. Georgia and Armenia charge the lowest import duties. In the latter case, tariffs had to be adjusted to the higher common external tariffs of the Eurasian Customs Union when Armenia became a member of the EAEU.

Figure 7 provides a more detailed picture of Russia, the country that dominates the EAEU. Import-weighted average tariffs on industrial goods

rose from 7 percent to 11 percent in the early 1990s. They declined again prior to Russia's accession to the WTO, reaching a minimum of 6 percent in 2014. Tariffs on agricultural goods have tripled from 5 percent to 15 percent and still remain in the double-digit range. Russia also upholds relatively high non-tariff trade barriers. As described in Felbermayr, Aichele and Gröschl (2016), Russia is very active in technical, sanitary and phytosanitary measures. Russia is especially active in the latter area, which is of particular importance for food and agricultural products. Since Russia's accession to the WTO in 2012, it has notified 115 measures which affect 105 products (compare also Koch-Mehrin 2013).

THE IFO TRADE MODEL

The ifo trade model, described in detail in Aichele, Felbermayr and Heiland (2014) is a static, general equilibrium model of international trade. We include 134 countries and regions, and aggregate the 58 sectors into 32 tractable goods and services industries. Trade flows are impeded by tariffs and non-tariff barriers.[3] The sectors are linked nationally and internationally through supply structures. The ifo simulation model thus proxies international value chains and sectoral details rather well.

The model can be parametrised using simple econometric equations resulting from the equilibrium conditions of the model. Two industry-specific parameters are of particular importance: the elasticity through which tariff changes affect trade flows and the effect of non-tariff trade barriers on these flows. We distinguish between free trade agreements (FTAs) of different integration depths which are based on the data by Dür, Baccini and Elsig (2014). This decomposition into deep and shallow agreements allows us to estimate the welfare and trade effects for different depths of trade liberalization in the scenarios, i.e. different measures of the reduction of non-tariff trade barriers.

The trade policy scenarios described in detail below are based on the following thought experiment: if the EU and the EAEU – counterfactually – had a free trade agreement, how trade flows, sectoral production structures and real income would look. In this experiment, everything else is held constant (*ceteris paribus assumption*). We assume that the extent of the dismantling of non-tariff trade barriers follows the liberalisation efforts of other existing FTAs. Our base year is 2011: hence, before the Western sanctions and the Russian embargo.

The calculated level effects on real income and trade flows are static. We cannot identify dynamic effects of trade – such as effects of innovation activities of companies. The model thus provides lower bounds of effects. Note, however, that static effects will not occur immediately after trade liberalisation. This is particularly relevant for non-tariff barriers: increasing regulatory cooperation with the EU will only slowly unfold its effects. In accordance with the empirical literature (e.g. Jung, 2012), the adjustment takes about ten to twelve years.

[3] The basis for this multi-sector model was developed by Caliendo and Parro (2015). It is based on the groundbreaking work of Eaton and Kortum (2002). Thus the model is anchored in the New Quantitative Trade Theory – see Costinot and Rodriguez-Clare (2015) for a description of these model types.

SCENARIO

Due to the uncertainty with respect to the design of an FTA from Lisbon to Vladivostok, we examine a number of different scenarios when quantifying a potential agreement. It is important to consider the content of a trade deal but also the composition of potential contract partners. Regarding the countries involved, the following compositions are conceivable:

- All EU member states and Russia.
- All EU member states and all EAEU members.
- All EU member states and all former states of the Soviet Union (excluding the Baltic States).

We report mainly scenarios where we assume that the EU concludes a trade deal that is as profound and comprehensive as other modern EU FTAs. At the same time, we also provide a breakdown into individual components to visualise expected effects from an agreement that comprises only certain areas (i.e. industrial or agricultural sectors, tariff reductions vs. deep or rather shallow reforms of non-tariff barriers).

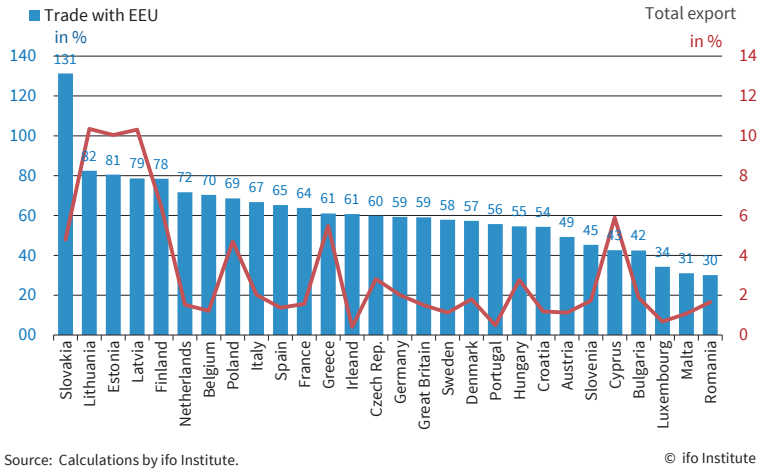
In order to depict trade policy developments since 2011, we first simulate the effects of an EU accession of Croatia. We handle the FTAs between the EU and Georgia, Moldova and Ukraine similarly. The effects of FTA scenarios discussed above are then based on this alternative, simulated initial scenario. This has implications for the expected trade diversion effects of Georgia, Moldova and Ukraine. The benefit of their preferential access to the EU market will be weakened if more countries such as Russia would get better access to the EU market ('preference erosion').

TRADE EFFECTS

Figure 8 shows simulated effects on exports of selected countries or regions respectively to the region of the new trading partners and to the rest of the world. The model therefore suggests that a deep agreement between the EU and the EAEU could raise Russia's exports to the EU by around 71 billion euros. The agreement would also stimulate Russian exports to the rest of the world (RoW), as the availability of cheaper machinery and intermediate products from the EU will increase Russia's overall competitiveness; this will also benefit Russia with respect to third country markets. Overall, Russian exports are expected to increase by around 77 billion euros. Figure 9 shows that this growth would bring a relative increase of 32 percent in Russian exports to the EU and a total increase of about 19 percent. In the initial situation, 53 percent of Russian exports are allotted to the EU.

Figure 8

Growth Rates of Trade Due to a Deep EU-EAEU Agreement: EU



Source: Calculations by ifo Institute.

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Taking a look at Germany, a trade deal could increase exports to the EAEU by 31 billion euros. This trade creation is confronted by a negative trade diversion effect of 9 billion euros. The reason is that Russia's additional exports to the EU (e.g. metal products) would replace German exports in these sectors. Central and Eastern European countries (CEECs), which are not listed separately (Czech Republic, Slovakia, Slovenia, Austria, Hungary), could gain additional exports to EAEU countries of approx. 14 billion euros. Negative trade diversion effects would total 3 billion euros. The trade and diversion effects for Italy, Scandinavia (Denmark, Sweden and Finland), BENELUX, British Isles and France are similar in scale. Poland, which directly borders EAEU countries, could experience trade creation effects of around 8 billion euros, while trade diversion effects amount to 2 billion euros. Although the Baltic economies are rather small in scale, they are likely to experience high trade creation effects due to their close proximity to Russia (up to 5 billion euros); the negative diversion effects are estimated to amount to about half a billion euros.

Figure 9 depicts the expected export growth rates of countries affected by an EU-EAEU treaty. The EU would experience a 63-percent increase in exports to the former states of the Soviet Union (excluding the Baltic States); total exports (net trade creation and diversion effects) would increase by 2 percent. In comparison, the expected export growth for Russia is somewhat lower (+ 32 percent), mainly because Russian exports to the EU are already close to their potential and trade barriers in Europe are relatively low with respect to the goods Russia exports (e.g. raw materials). Nevertheless, as the EU is a very important export market for Russia (52 percent of Russian exports), an overall agreement increases the country's total exports by about 19 percent.

Belarus, Kyrgyzstan and Armenia could nearly double their exports to the EU due to an agreement. For Armenia and Belarus, who do have a high share of exports with Europe, a trade deal would also lead to a sharp increase in total exports of 46 percent and 34 percent, respectively. These are very high increases, which would result from the reduction of currently high trade barriers.

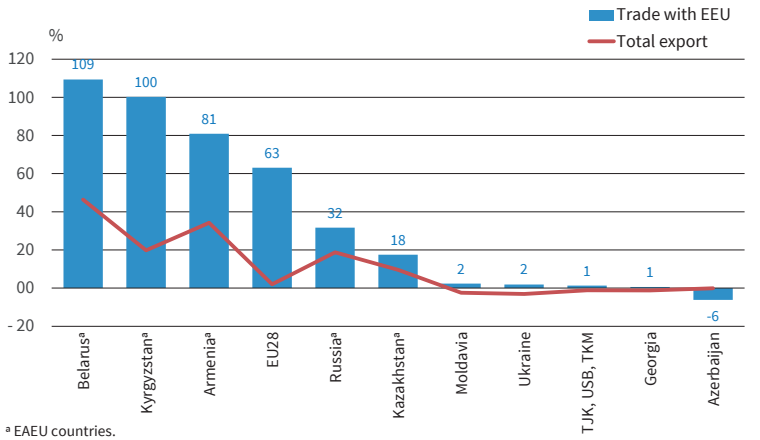
Non-member countries of the EAEU would indirectly be affected by an agreement. On the one hand, they might lose competitiveness relative to countries participating in an agreement. On the other hand, they would also benefit from an increase in income if this leads to a higher demand for their own goods and services. We show that the exports of Georgia, Moldova, the Central Asian economies outside the EAEU, and Ukraine to the EU would increase slightly, but total exports might drop. The reason is that these countries could lose market share against EAEU countries through stronger competitive pressure from the EU. They may at the same time compensate for some of the loss by higher exports to the EU. Note however, that the net effect is negative. Azerbaijan is an exception, as its energy supplies to the EU could be partially replaced by a FTA between the EU and the EAEU. But the country may avoid a slump in overall exports by exporting more to other countries.

MACROECONOMIC RESULTS

Figure 10 shows the simulated long-term effects of different potential agreements on real GDP per capita for the countries of the former Soviet Union. Percentage

Figure 9

Growth Rates of Trade Due to a Deep EU-EAEU Agreement: Former Soviet Union



[a] EAEU countries.

Source: Calculations by ifo Institute.

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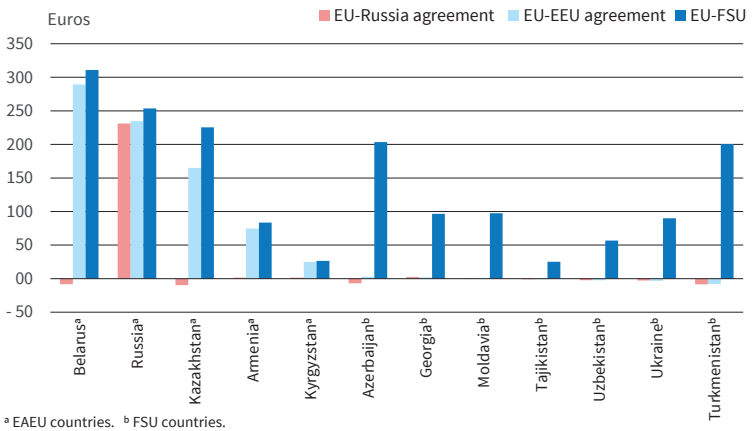
Figure 10

Effects of Real per Capita Income per Year in Former Soviet Union States



[a] EAEU countries. [b] FSU countries.

Source: Calculations by ifo Institute.

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growth rates for an EU-EAEU agreement are also depicted. Here, Belarus is the country with the highest advantage, both in absolute and relative terms. Its per capita income would rise by almost 4.9 percent or 290 euros per person (based on the *status quo* income of 2015). Russia would be able to increase its real average income by 3.1 percent, which equals 235 euros per person. Kazakhstan and Armenia could increase their per capita income by 2.3 percent, while Kyrgyzstan would have a slightly smaller relative advantage of 1.7 percent. In absolute terms, this means income gains of 165, 75 and 25 euros per person and year, respectively.

Countries that are not members of the EAEU would have very little to expect from an agreement with the EU. In particular, Central Asian countries would be adversely affected by trade diversion effects; but the effects are small, both, in relative and absolute terms. According to the simulation, Turkmenistan would be most affected. The loss in real per capita income would be about 8 euros per person and year.

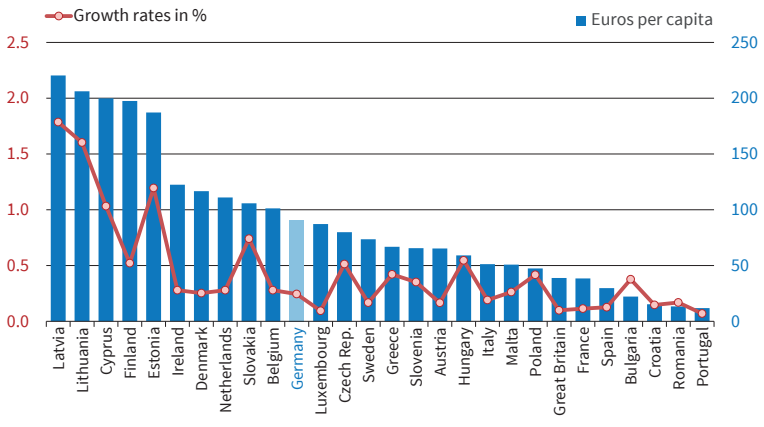
Likewise, an agreement of only Russia with the EU would produce small negative effects in the per capita income of other former Soviet Union states. The absence of positive pull-in effects relates back to the fact that Russia's exports would rise primarily in raw materials. This industry requires little intermediate inputs from other former Soviet countries. For Russia, an exclusive agreement with the EU excluding other members of the EAEU would not be preferable. The increase in per capita income would be less than 3 euros per person and year. An agreement including all former Soviet Union states would, however, result in a further increase in Russian income per capita by about 20 euros per person and year compared to an EU-EAEU deal only. This does result from the fact that reviving or dampening the economy in other countries would also positively affect Russia by an increase in the demand for Russian products.

Figure 11 shows simulated gains in annual per capita income from an EU-EAEU agreement for EU member states, again relative to the *status quo* income of 2015 (in percent, left axis) and absolute values (in euros, right axis). German real per capita income would grow by about 91 euros; this equals an increase of about 0.2 percent. Compared to Russia, this is a much smaller value: the EAEU is a comparatively unimportant market for Germany, whereas the EU is a rather important market for Russia. If one compares this growth rate with projected profits of Germany from other potential trade agreements – for example from TTIP, for which the same simulation model predicts growth rates of 0.6 percent – the effect is not negligible. Furthermore, note that the growth rates occur annually: in 2015 prices, we would find even higher annual benefits from an EU-EAEU deal in the future. Utilising a calculated interest rate, the present value of the income advantage would result in almost 2,300 euros (after full implementation of the FTA).

Germany is not the main beneficiary of an EU-EAEU agreement. Other EU members would benefit far more from their proximity to Russia and the resulting relative importance of the Russian market. Particularly the Baltic republics would benefit: Latvia, Lithuania and Estonia would increase their real income by 220, 206 and 187 euros per capita and year. This equals

Figure 11

Effects of a Deep EU-EAEU Agreement on Real per Capita Income in the EU Growth Rates



Source: Calculations by ifo Institute.

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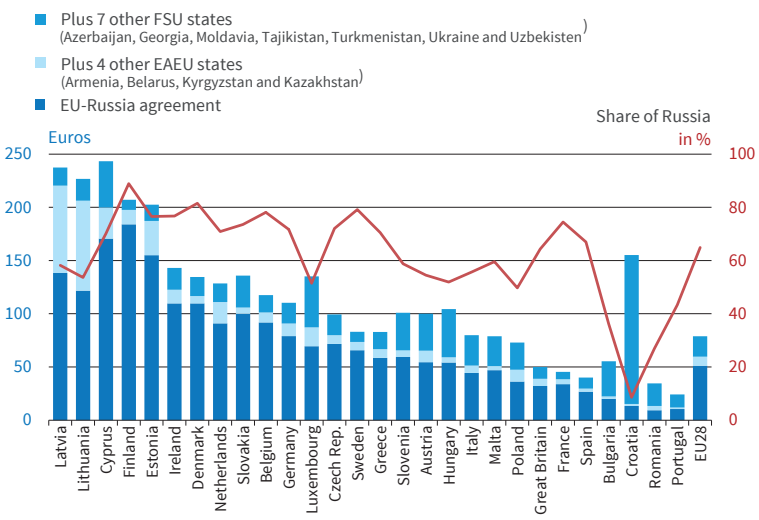
1.8, 1.6 and 1.2 percent of the *status quo* income, respectively. Similarly, Finland and Cyprus would have above average benefits, although percentage growth rates are lower than in the Baltic States as income levels are significantly higher. Among the old EU members, the agreement would generate higher absolute income in Ireland, Denmark, the Netherlands, and Belgium compared to that in Germany. Relative growth rates are of comparable size. Contrasting this, new EU members would experience higher impulses on growth, particularly Slovakia (0.7 percent), the Czech Republic (0.5 ercent), Hungary (0.5 percent), Poland (0.4 percent) and Bulgaria (0.4 percent). Greece, similarly to Cyprus, has close cultural proximity with Russia. Its traditionally relatively high trade with Russia is thus positively affected (0.4 percent or 67 euros per capita and year).

Figure 12

Effect of a Different Agreements on Real Income per Capita in the EU and the Share of Russia



Source: Calculations by ifo Institute. © ifo Institute

A number of EU members traditionally trade very little with Russia. To them an EU-EAEU agreement is of little economic importance. Simulated growth rates of Britain, France and Spain are 0.1 percent, respectively, while Italy would see growth in income per capita by 0.2 percent per year. Interestingly, Eastern European countries (such as Croatia or Romania) would gain only very modestly, both, in percentage and absolute terms, mainly due to a lack of clear comparative advantages.

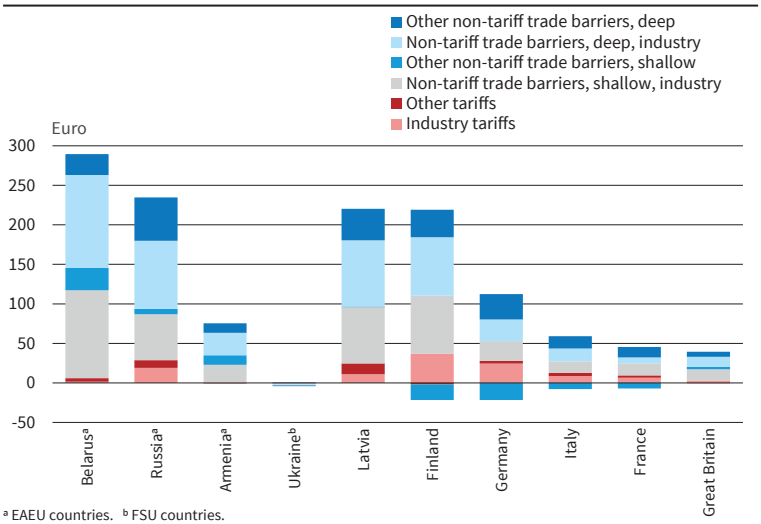
Figure 12 broadens the perspective on other potential agreements. Next to the EU-EAEU agreement, it also considers a trade deal between the EU and all successor states of the former Soviet Union (EU-FSU), as well as a partnership between the EU and only Russia. The benefits from an EU-FSU FTA are, without exception, higher than from an EU-EAEU agreement; while the latter agreement would be much more advantageous than a trade deal with only Russia. Germany, for example, would gain an additional 20 euros per capita and year from an extension of the FTA to the seven non-EAEU former Soviet countries. An agreement with Russia alone would reduce the gain by 12 euros. Germany would thus only achieve 72 percent of the maximum possible effect by an agreement with Russia alone.

Belarus is particularly important for the Baltic economies. In Latvia and Lithuania, more than 80 euros of welfare gains from an EU-EAEU agreement are attributable to countries other than Russia. To have other former Soviet republics in the agreement is relatively important for Luxembourg, Slovenia, Austria, Hungary, Romania and particularly Croatia. Note that for Croatia this effect is difficult to reconstruct and could relate back to special factors which are accounted for in the base year (2011). The other above-mentioned countries have relatively large trade volumes with the seven other FSU countries.

Figure 13 shows the decomposition of per capita income effects due to an EU-EAEU agreement related to individual trade policy measures for selected countries. For Germany, more than 30 percent of the total aggregate income increase of 91 euros per capita and year trace back to the elimination of tariffs; a major share are industrial tariffs (24 euros), while agricultural tariffs contribute only marginally (3 euros). Tariffs also

Figure 13

Decomposition of the Effects of an EU-EAEU Agreement on per Capita Income

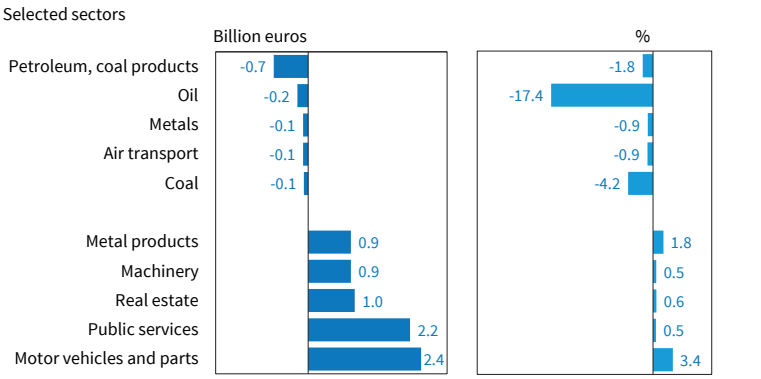


[a] EAEU countries. [b] FSU countries.
Source: Calculations by ifo Institute. © ifo Institute

play an important role in Italy and France (about one quarter of the total effect, respectively). Liberalisation in agricultural tariffs constitutes 7.8 percent of the overall effect, which is more than twice as high as in Germany. While in Britain and Finland, the elimination of agricultural tariffs would generate less real income growth than tariff revenues. Hence, for them the result would be a small but negative contribution to the (positive) overall effect of an EU-EAEU free trade zone. For Russia, the elimination of tariff barriers is less important (12 percent of the total effect), while for Belarus it approaches zero.

Figure 14

Change in the Sectoral Value Added by a Deep EU-EAEU Agreement in Germany



Source: Calculations by ifo Institute. © ifo Institute

In all countries considered, most of the welfare gains stem from a reduction of non-tariff trade barriers (NTMs) in the industrial sector. In Russia and Germany, their share amounts to 61 percent of the total effect, respectively; about half of it is attributable to profound measures, which are only observable in deep trade agreements. In contrast, the reduction of NTMs in the agricultural and services sector is less important. These measures contribute very little (12 percent of the total effect) for Germany. In France (agricultural trade) and Britain (services), the proportion is higher with 16 and 24 percent, respectively. It is highest in Armenia (32 percent), which has a clear perspective of a revival in tourism.

SECTORAL EFFECTS

In this section, we consider the effects at the sectoral level. For this purpose, we pick the five sectors with the strongest positive and those with the largest negative value added effects. We again take a deep EU-EAEU agreement scenario as our basis, but focus only on the effects on Germany and Russia due to spatial restrictions.

The German sector with the highest value added growth rates of 3.4 percent (2.4 billion euros) would be the automotive sector. This sector accounts for about one third of the overall increase in net value added in Germany. Relatively high increases are also expected for metal products (1.8 percent) and machinery (0.5 percent). Interestingly, services sectors such as public services and real estate would also benefit. These industries are hardly ever directly affected by FTAs; they rather benefit indirectly from an increase in overall economic demand and from cheaper intermediate inputs (e.g. an FTA would reduce the prices of building materials).

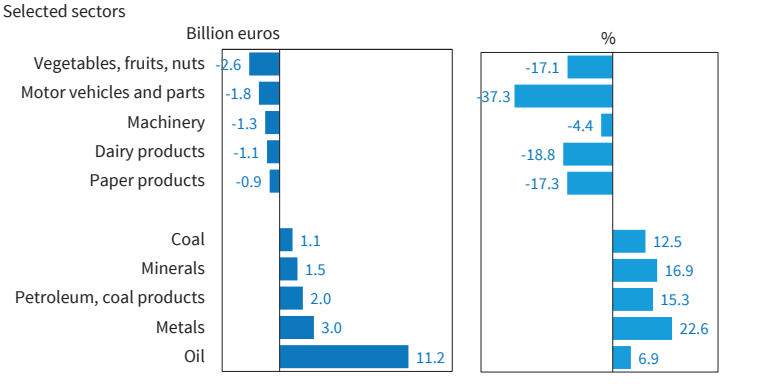
The losses would be concentrated in industries based on natural resources, particularly oil, coal and especially refineries. The latter could lose approx. 0.7 billion euros of value added from an agreement, as imports of refined petroleum products from Russia would become cheaper. Germany could also lose value added in metals and air transport, but relative changes would be less than 1 percent, respectively.

The value added gains of Russia are concentrated on natural resources sectors, particularly energy products. An agreement would, however, not only facilitate trade in oil, gas and coal, but also in refinery products thereof, which embed further value added potentials. More than half of the growth in the oil producing sector is not attributable to additional direct oil exports to Europe but to higher supplies to petroleum processing industries, which in turn export more to the EU. Mining products such as metals or minerals would also benefit from a reduction of bureaucratic barriers.

Russian sectors with a comparative disadvantage would lose out. These comprise certain foods such as vegetables and fruits or dairy products, where double-digit losses are possible. The automotive sector could also come under considerably pressure; for a deep agreement, model simulations result in a value

Figure 15

Change in the Sectoral Value Added by a Deep EU-EAEU Agreement in Russia



Source: Calculations by ifo Institute. © ifo Institute

added loss of 37 percent (compare Figure 15). This high effect is explained by relatively high protectionist barriers of Russia, which would be eliminated in an EU-EAEU agreement. Mechanical engineering could also be damaged – albeit to a lesser extent – with the percentage decline of 4 percent remaining within the framework.

SUMMARY

Russia and the other countries of the former Soviet Union could be interesting partners for a deep economic cooperation with the EU. The EU should have a strong interest in stable economic development in its immediate neighbourhood. In addition, the complementary specialisation structure of these countries promises substantial economic benefits also for the EU.

European imports from the countries of the Eurasian Economic Union are extremely concentrated on natural resources such as gas, petroleum and metals. Natural resources account for about 80 percent of exports to the EU. Imports are dominated by machinery and chemical products. Services trade is underdeveloped with respect to both exports and imports.

The trade barriers with the countries of the former Soviet Union are relatively high. Average tariffs for agricultural products are consistently above 10 percent, while the average tariff in industrial goods centres at around 5 percent. Non-tariff barriers to trade are considerably high, which is also reflected in a considerable number of disputes on technical barriers to trade and on sanitary and phytosanitary measures. This situation has been exacerbated by the current sanctions following the annexation of Crimea by Russia.

The potential for additional trade in goods and services between member states of the EAEU and the European Union is substantial. A deep agreement could increase Russia's exports to the EU by 32 percent compared to the *status quo* in 2011; Armenian exports could increase by more than 80 percent; exports of Belarus and Kyrgyzstan could double.

European exports to the countries of the EAEU could in a deep agreement increase by more than 60 percent compared to the 2011 *status quo*. The potential is highest in Slovakia, Finland and Poland. Nevertheless, German exports could also rise by as much as 59 percent. If a deep FTA including not only EAEU members, but all successor states of the USSR would be concluded, European exports could even rise by 74 percent compared to the status quo of 2011.

In Russia, an agreement would mainly benefit natural resources sectors, most notably the oil industry, but also metal products would be strengthened. In contrast, fruit and vegetables as well as automotive sector would be on the losing side. From an agreement with the EAEU, Europe could export agricultural products, foodstuffs and automotive to the countries of the former Soviet Union in an easier way.

With an agreement between the EU and the EAEU, Russia could increase its real income by 3.1 percent, worth 34 billion euros. Belarus would experience even higher effects (4.9 percent), and Armenia (2.3 percent), Kyrgyzstan (2.3 percent) and Kazakhstan (1.7 percent) would also show noticeable effects. Countries of the former Soviet Union that are not members of the EAEU today would easily lose from an EU-EEA agreement only. Turkmenistan would be most negatively affected by a decline in income of 8 euros per capita and year.

The Baltic republics would benefit more than other European countries from such an agreement. Their per capita income could increase by 1.2 to 1.8 percent; this amounts to 200 euros per capita and year. About 60 percent of these increases are attributable to Russia; the remainder can mainly be ascribed to deepened trade relations with Belarus. If the agreement would be extended to the other former Soviet republics, benefits increase slightly. The EU would increase its real income due to a deep agreement with the EAEU by about 30 billion euros; including the other states of the former USSR would add about 10 billion euros (40 billion euros in total). Germany could expect an increase in income of 7 or 9 billion euros, which equals 90 or 110 euros per capita and year.

A FTA that would only eliminate tariffs would be worth nearly 30 euros per capita in Russia. A similar value would be expected in Germany. If NTMs in all sectors were also reduced, benefits in Russia could amount to 151 to 290 euros per person and year, depending on the level of NTM eliminations. Similarly, Germany could gain 59 to 91 euros per capita and year.

The benefits from a more intensive economic cooperation between the EU and the former states of the Soviet Union cannot be dismissed. They are significantly larger for Russia than for the EU and could contribute to economic stabilisation in the region. The prospect of a deep and serious economic integration with the EU, which does not rule out Russia's Eurasian Customs Union, should become part of the European policy on Eastern Europe.

REFERENCES

Aichele, R., G. Felbermayr and I. Heiland (2014), *Going Deep: The Trade and Welfare Effects of TTIP*, CESifo Working Paper 5150.

Brenton, P., N. Tourdyeva and J. Whalley (1997), "The Potential Trade Effects of an FTA between the EU and Russia", *Weltwirtschaftliches Archiv* 133, 205–225.

Caliendo, L. and F. Parro (2015), "Estimates of the Trade and Welfare Effects of NAFTA", *Review of Economic Studies* 82, 1–44.

Costinot, A. and A. Rodriguez-Clare (2014), "Trade Theory with Numbers: Quantifying the Consequences of Globalization", in: Gopinath, G., E. Helpman and K. Rogoff (eds.), *Handbook of International Economics*, Vol. 4, Amsterdam: Elsevier, 197–261.

Dür, A., L. Baccini and M. Elsig (2014), "The Design of International Trade Agreements: Introducing a New Database", *Review of International Organizations* 9, 353–375.

Eaton, J. and S. Kortum (2002), "Technology, Geography, and Trade", *Econometrica* 70, 1741–1779.

Felbermayr, G., R. Aichele and J. Gröschl (2016), *Freihandel von Lissabon bis Wladiwostok: Wem nutzt, wem schadet ein eurasisches Handelsabkommen?*, Study for the Bertelsmann Foundation, https://www.bertelsmann-stiftung.de/de/publikationen/publikation/did/freihandel-von-lissabon-bis-wladiwostok/.

Jung, B. (2012), "Gradualism and Dynamic Trade Adjustment: Revisiting the Pro-trade Effect of Free Trade Agreements", *Economics Letters* 115, 63–66.

Koch-Mehrin, S. (2013), "Negative Weltrekorde nach dem WTO-Beitritt: EU verärgert über neuen Protektionismus", *Ost-West Contact* 1/2013, http://www.koch-mehrin.de/beitrag-zum-neuen-protektionismus-nach-dem-wto-beitritt-russlands/#sthash.nHU2IVIM.dpuf.

Vinokurov, E., P. Balas, M. Emerson, P. Havlik, V. Pereboyev, E. Rovenskaya, A. Stepanova, J. Kofner and P. Kabat (2016), *Challenges and Opportunities of Economic Integration within a Wider European and Eurasian Space*, IIASA Synthesis Report, http://www.iiasa.ac.at/web/home/about/news/21-11-2016_Final_Eurasian_project_report_FINAL.pdf.

Sven Steinkamp and Frank Westermann

The Seniority Conundrum – Further Evidence

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One of the key differences in the current quantitative easing (QE) programme compared to the European Central Bank's previous securities markets programme (SMP) is seniority status. While under the SMP the ECB insisted on a preferred creditor status, it accepts a *'pari passu'* treatment for its QE holdings. The response of interest rates was also markedly different. While interest rate spreads of government bonds increased during the SMP, they declined after the start of QE. In a recent article (Steinkamp and Westermann 2014), we argued that the seniority stance matters for the interest rate response and provided evidence from institutional arrangements, macro patterns, and survey data from the *ifo World Economic Survey*.

Not only did the ECB have seniority clauses, but, explicitly or implicitly, this was the case for all multilateral agencies, such as the IMF, ESM, EFSF, EFSM and bilateral loans. The seniority conundrum – the unexpected response of interest rates to senior loans or asset purchases – thus helps to explain why rescue efforts in the beginning of Europe's sovereign debt crisis were rather unsuccessful: Private lenders in the market were gradually pushed into a junior position and charged a higher marginal interest rate.

A challenging aspect when interpreting the evidence on the seniority conundrum was the direction of causality. While asset purchases with senior status may drive interest rates up, the rise in interest rates had also been the motivation for policymakers to take action and purchase government bonds. There is clearly endogeneity between the two variables that is difficult to disentangle. In a new paper (Steinkamp and Westermann 2016), we focus on this bidirectional causality and provide two approaches to addressing the issue.

EVIDENCE FROM MACRO DATA

The first approach is to look at macro data. There is a high correlation between multilateral loans (with senior stance) and the interest-rate spread. To identify the direction of causality, we take advantage of the details in the assessment of rating agencies to construct an instrumental variable. While some rating agencies assess the probability of default only, other agencies also consider the loss given default. Exploiting the differences between the two rating approaches enables us to construct a proxy of market expectations about the loss given default.

Figure 1 shows that these rating differentials are positively correlated with the share of multilateral loans in total government debt of the countries in crisis. Unlike the ECB's purchases of governments bonds, however, there is no political-economy motivation for rating agencies to target interest rates, rendering them endogenous to the interest-rate spread. Our proxy, thus, can help estimate the impact of senior loans on interest-rate spreads.

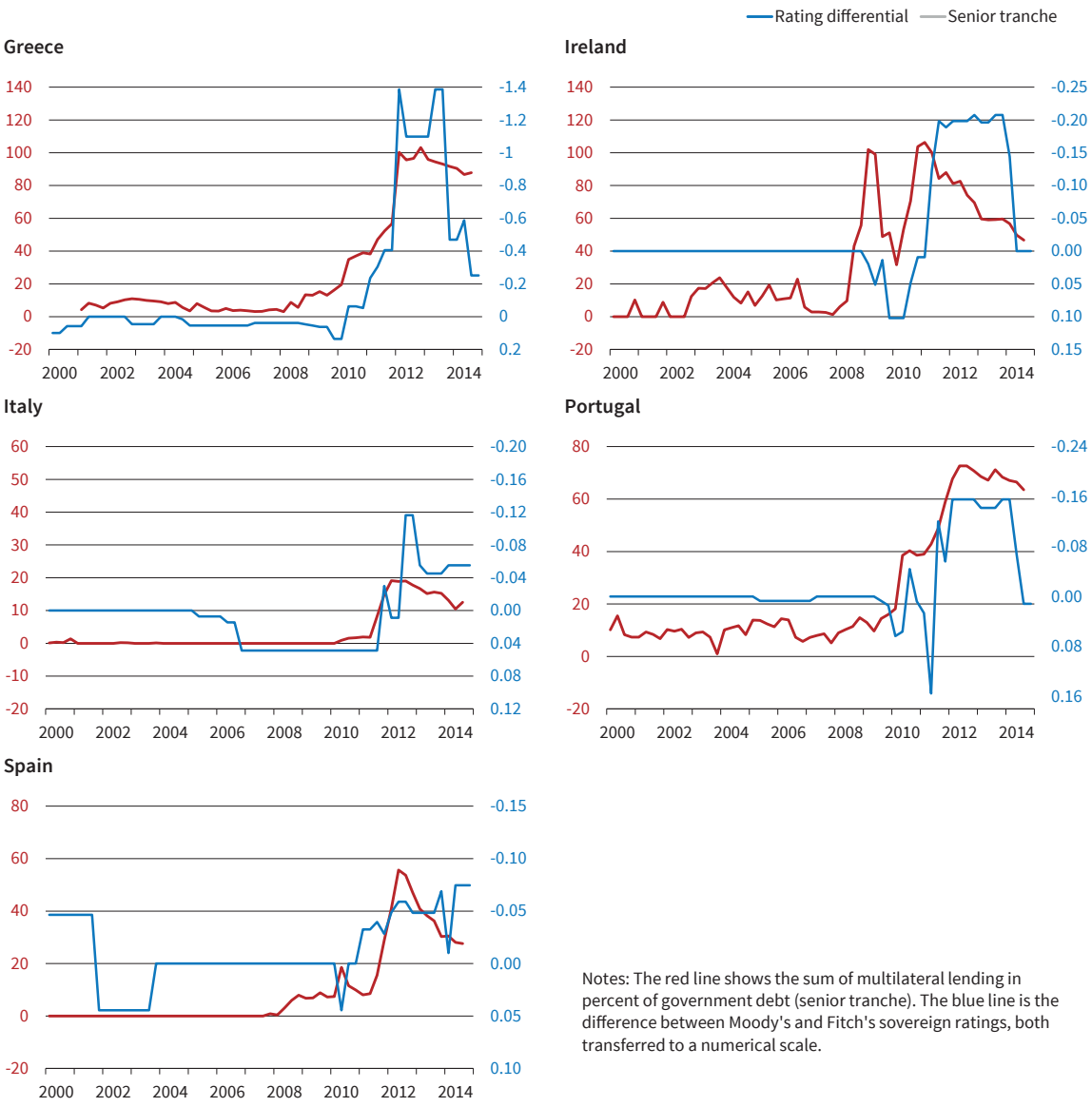
In a two-stage instrumental-variable regression analysis, where the rating differential is used as an instrument in the first stage, we find the effect of multilateral lending on interest rate spreads to be statistically significant and quantitatively important. This analysis explains a substantial part of the surge in interest rates observed in 2010–2012. We consider several different variants of the rating instrument. We also confirm this result using lagged values as well a recent heteroscedasticity-exploiting identification approach. Our regressions seem to be neither over- nor under-identified and pass all standard specification tests, such as a high *F*-statistic in the first stage of the regression.

EVIDENCE FROM IFO SURVEY DATA

In a second approach, we analyse new survey data from the Munich-based ifo Institute. As part of their regular World Economic Survey, the ifo institute asked about 1,000 experts worldwide about their expectations regarding the seniority stance of different multilateral institutions. In 2013, when this question was asked for the first time, around 70 percent of the respondents considered the IMF to have a preferred-creditor status. 88 percent considered at least one of the rescue funds senior to private-market participants. In the second wave of the survey, this had changed slightly. While even more experts consider the IMF to enforce a senior status, the ESM and the ECB were considered less senior in 2015 – a sign that markets noticed the recent changes with regard to seniority clauses of multilateral institutions.

The survey data can also be used to illustrate the impact of seniority expectations on interest rates. With two waves of the survey (2013 and 2015), we are now in a position to follow a differences-in-differences strategy to illustrate the seniority conundrum. Figure 2 illustrates the link between the two survey questions for different sub-groups of countries. For the countries in crisis – Greece, Italy, Ireland, Portugal and Spain – the figure shows that survey participants who considered the multilateral loans on equal footing (*pari passu*) with private markets had falling interest-rate expectations in 2013. Those experts who believed that multilateral institutions would enforce a senior stance expected interest rates to remain nearly unchanged. In 2015, after interest rates actually fell, the picture reversed. Those who still expected a senior stance have rising

Figure 1
Seniority Lending and Rating Differentials



Notes: The red line shows the sum of multilateral lending in percent of government debt (senior tranche). The blue line is the difference between Moody's and Fitch's sovereign ratings, both transferred to a numerical scale.

Source: Steinkamp und Westermann (2017).

interest-rate expectations, while this is much less pronounced in the other group.

Taking the rest of the euro area as a control group, we find that the pattern is the exact opposite. This is plausible, as many of these countries became net debtors *via* the official rescue packages. Survey participants who believe in a senior position for rescue institutions expect rising interest rates in the rest of Europe, but those who believe the rescue institutions will accept a *pari passu* treatment expect interest rates to increase more strongly.

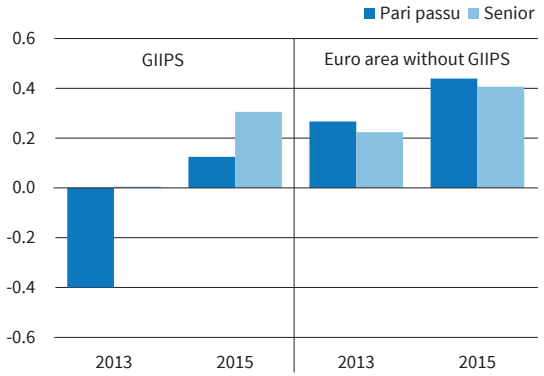
In a probit regression analysis, we document that these differences are statistically significant, even when including other control variables, such as the countries' debt levels, trade deficit and exchange rate as well as GDP growth expectations. Exploiting the new panel dimension of the data set, we also run a two-stage least squares regression with the survey data using the last round's responses as an instrument.

THE POLICY DEBATE

Summing up, there is indeed evidence that the senior stance of rescue packages and bond purchases matters for the level of interest rates. Policymakers may disagree on whether or not this is a desirable feature of the recent trend towards *pari passu* arrangements. This trend is not only observable at the ECB. Also, the IMF seems to insist less strictly on its senior status (see also Reinhart and Trebesch 2016). At the same time, the presence of interest-rate spreads – provided they are not too large – is often considered a necessary market mechanism for an efficient allocation of capital. Also in the case of insolvency, the *pari passu* treatment may

Figure 2

Interest Rate Expectations (ifo World Economic Survey)



Notes: The graph shows the average interest expectation of different subsamples. Expectation is measured [-1, 0, +1] indicating falling, stalling or rising interest rate expectations, respectively. Only euro area respondents with repeated participation in the survey have been included (Obs. = 426). In the case of respondents from the GIIPS countries (Greece, Ireland, Italy, Portugal, and Spain) with seniority expectations, the interest expectation is - on average - exactly zero.

Source: ifo World Economic Survey (April 2013 and July 2015).

end up being costly for the multilateral institutions. In any case, it is important to be aware of this empirical regularity when designing future rescue packages and monetary policies targeting interest-rate stabilisation.

REFERENCES

Reinhart, C. M. and C. Trebesch (2016), "The International Monetary Fund: 70 Years of Reinvention", *Journal of Economic Perspectives* 30, 3–28.

Steinkamp, S. and F. Westermann (2014), "The Role of Creditor Seniority in Europe's Sovereign Debt Crisis", *Economic Policy* 29, 495–552.

Steinkamp, S. and F. Westermann (2017), "Multilateral Loans and Interest Rates: Further Evidence on the Seniority Conundrum", *International Journal of Finance and Economics* 22, 169–178.

Christa Hainz and Nikolay Hristov

Credit Crunch Indicator: Perceptions of the Willingness of Banks to Lend and Firms' Experience in the Credit Market

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INTRODUCTION

Since 2003 the ifo Institute has been publishing the credit crunch indicator. It measures the willingness of the banking sector to grant loans to German firms. The reasons for the introduction of the credit crunch indicator were complaints by many firms about difficulties in financing after the burst of the Dot-Com bubble in 2001.

The indicator is based on the so-called credit question, which is part of the ifo Business Survey:

"How do you assess the readiness of banks to provide loans to firms?"

- Accommodating
- Normal
- Restrictive

The credit question was asked biannually until August 2008. Since November 2008, German firms have the opportunity to report their appraisal of banks' lending at a monthly frequency. The credit crunch indicator corresponds to the percentage of firms responding with 'restrictive'. Furthermore, it is possible to construct the indicator for different sectors like manufacturing, construction, retail trade etc. or various firm sizes separately.

The credit crunch indicator was at its highest value at the time of its introduction when more than 60 percent of German firms perceive the banks' lending behavior as 'restrictive'. Thereafter it declined continuously, reaching about 23 percent in August 2007 before rapidly rising again to about 45 percent as the global financial crisis unfolded. Between 2010 and 2011 the credit crunch indicator dropped continuously, surpassing its level just before the outbreak of the crisis. Since then, the fraction of firms reporting a 'restrictive' lending by banks has been modestly downward sloping. Currently, only about 15 percent of German firms perceive lending as restrictive. Both, its high correlation with the change in the so-called 'bank lending standards' in Germany surveyed by the European Central Bank (see first graph in Figure 1) as well as its noticeable lead against the growth rate of loans to non-financial corporations (see second graph in Figure 1) validate the information content of the credit crunch indicator.

SPECIAL QUESTION ON THE FIRM'S CREDIT MARKET EXPERIENCE

The data from the ifo Business Survey are used both for the construction of macroeconomic indicators, such as the credit crunch and the business climate, as well as for research based on micro data – i.e. observations at the level of the individual firm. However, unlike the other questions in the survey, the credit question asks about the general perception of lending standards rather than about an assessment of the individual, i.e. firm specific situation. Accordingly it is unclear whether a firm's response reflects its own credit-market experience or rather mirrors the access to credit of the firms in the same sector, region, or even the entire economy. This aspect is particularly important when the firm-level data is used in microeconometric analyses.

To investigate the extent to which the responses to the credit question reflect the firm-specific experience or the perception of the sectoral and/or macroeconomic situation on the credit market, in June 2016 the ifo survey was extended by a special question. The latter asked firms about their own credit marketing experience. It was formulated as follows:

"Have you signed one or more loan contracts with banks in the past 12 months?"

Yes:

- *Amount and terms as expected*
- *Amount as expected, but worse terms*
- *Terms as expected, but lower amount*
- *Lower amount and worse terms*

No, because:

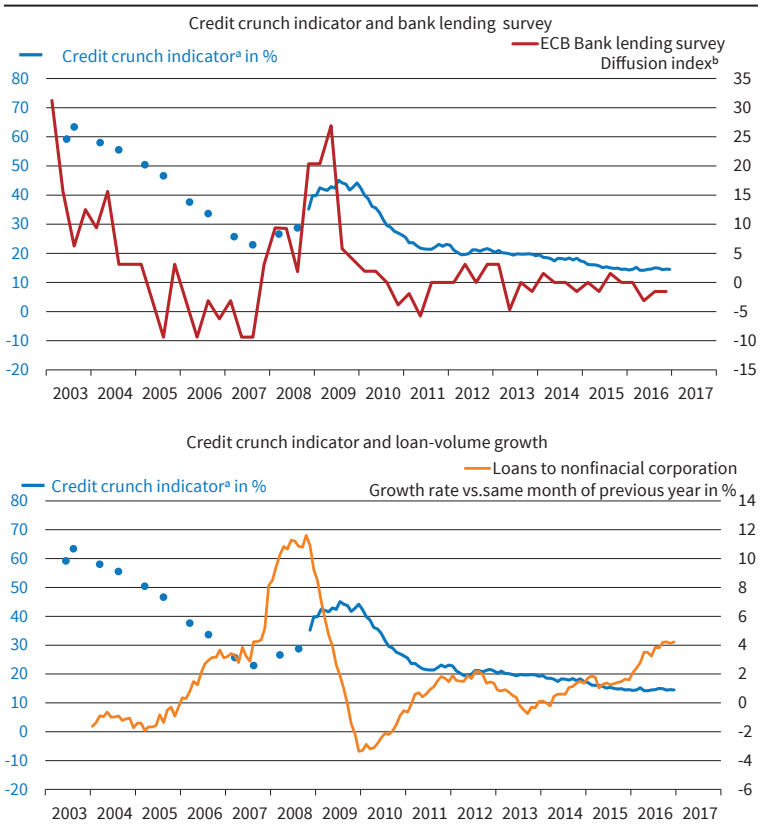
- *No need*
- *Terms unacceptable*
- *Rejection by banks*
- *No realistic chance of obtaining a loan*

The answer categories 'yes' and 'no, because' are used to determine whether a firm has signed any loan contract in the past months or not. If one of these two main alternatives has been chosen, the four subcategories allow us to find out more about the results of the credit negotiations. In the case of 'yes', information is provided as to whether the credit agreement was characterised by the expected terms. In the case of 'no', the reasons for not signing a contract are given.

In contrast, the credit question asks for a general appraisal of banks' willingness to lend. A firm can form its judgment on banks' behavior based on information

Figure 1

Credit Barrier, Changes in Credit Ratios and Credit Growth



[a] Fraction of firms, viewing banks' willingness to lend as restrictive.
[b] Change of credit standards in Germany.
Source: ECB; ifo Institute.

from various sources, such as media reports, or private information resulting from firm-specific experience.[1]

If the assessment of bank lending reflects the individual situation, one would expect the following link between the special question and the credit question: firms that have received a loan in the expected amount and on the expected terms should not report a 'restrictive' access to loans. Firms that did not receive the loan at the expected terms and those who, despite the need of credit, haven't signed a loan contract should not report an 'accommodative' behaviour of banks. If this is still the case, this serves as evidence that the appraisal of the firms is not based on their own credit market experience. The same holds if firms which did not need credit in the past twelve months answer the credit question (on the willingness of banks to lend).

LINK BETWEEN THE CREDIT QUESTION AND FIRM-SPECIFIC CREDIT MARKET EXPERIENCE

Table 1 shows the relationship between the responses to the credit question and the individual categories of the special question on the individual credit market experience. The special question was answered by 2,070 firms. Among those able to sign one (or several) loan contracts, 21 percent stated that banks' willingness to provide loans was accommodative. 66 percent assessed lending terms as normal and 13 percent as restrictive (Table 1, last column).

regard to the individual credit market experience, the numbers show that the firms without credit needs constitute the largest group (57 percent) (Table 1, last line, alternative (5)). 39 percent of all firms were successful in signing a loan contract. The majority of them received the credit with the expected terms (33 percent of all firms, (1)). For a small proportion of firms, the terms were worse and/or the amount borrowed was lower than expected ((2)–(4)). 3.5 percent of firms reported contract terms not meet their expectations. About 1 percent of the survey participants reported to

[1] The influence of different sources of information on expectations was examined above all for inflation expectations. Numerous studies use data from household surveys (Malmendier and Nagel 2016; Madaira and Zafar 2015; Kuchler and Zafar 2015; Lamla and Lein 2014). The study by Coibion, Gorodnichenko and Kumar (2015) is based on a company survey in New Zealand.

Figure 1

Link between Credit Demand and Credit Market Experience, in %

Credit question	Credit-market experience (special question)								
	(1) Conditions and amount as expected	(2) Amount as expected, but worse conditions	(3) Conditions as expected, but lower amount	(4) Lower amount and worse conditions	(5) No need	(6) Conditions unacceptable	(7) Rejection by bank(s)	(8 No realistic chance of obtaining a loan	
Accommodative	10.8	0.1	0.1	0.0	9.3	0.1	0.0	0.0	20.5
Normal	20.1	1.9	0.6	0.4	41.8	0.8	0.3	0.3	66.3
Restrictive	1.7	1.4	0.3	1.0	6.0	0.9	0.9	0.9	13.1
	32.7	3.5	1.1	1.4	57.2	1.8	1.2	1.2	

Source: ifo Institute.

have been granted a smaller credit amount than expected. Slightly more than 1 percent of firms were confronted with both, a lower amount of money and less favorable terms than expected.

About 4 percent of all surveyed firms reported that they did not sign a loan contract despite having financing needs. These answers can be found in the last three columns of credit market experience ((6)–(8)). Almost half of the firms rejected a bank's offer because the latter was unacceptable. The other half comprises firms whose credit negotiations were unsuccessful, either due to the bank refusing to make an offer or because the firm itself did not start any credit negotiations as it expected that it would not obtain a loan.

It turns out that most firms that have received credit as expected (1) assess the banks' willingness to lend as 'normal'. Although such firms are relatively more likely to appraise banks as being 'accommodative', some of them consider banks to be restrictive. Among firms whose expectations regarding the terms and/or amount of credit were not met ((2)–(4)), the answer 'accommodative' occurs less often. However, such firms appraise banks' lending relatively more frequently as 'normal' than 'restrictive'.

Most firms without credit market experience in the past year (5) assess credit availability as normal. They give the answer 'accommodative' slightly more often than 'restrictive'. In the case of firms which rejected the bank's offer (6), the answers were distributed in almost equal proportions to the answers 'normal' and 'restrictive'. The participants with credit rejection by the bank and those without a realistic chance of getting a loan ((7) and (8)), mostly assess banks as 'restrictive'. However, among the firms that rejected the bank's offer or did not get credit for other reasons there is surprisingly high number of respondents appraising the banks' willingness to lend as 'normal'.

The descriptive table shows that there is a link between the credit market experience of a firm and its assessment of banks' willingness to lend. However, this relationship is far from perfect. For example, many firms that have received credit without restrictions respond that bank lending behavior is restrictive. Many participants view the behaviour of banks as normal, although they were only able to get a loan at worse terms or could not get one at all. The high proportion of the 'normal' response is mainly due to firms that did not have a credit market experience in the past year because they did not have need.[2]

CHANGE OF CREDIT QUESTION

The evaluation of the special question suggests that the regular question about the banks' willingness to lend does not reflect solely the firm's individual credit experience. Therefore, the use of this question should be viewed as problematic in many microeconometric analyses – especially when it is intended to serve as an explanatory variable.

For these reasons, the regular credit request has been modified. In particular, from March 2017 on firms are explicitly asked whether they need a loan and how they assess the behavior of banks in the credit negotiations they conducted. The question is formulated as follows:

Granting of credit

We have conducted credit negotiations with banks over the past 3 months

1. *Yes*
2. *No*

If yes, the behavior of the bank(s) was:

1.1 Accommodative
1.2 Normal
1.3 Restrictive

If not, due to:

2.1 No need
2.2 Other reasons

This formulation ensures that the answers solely reflect the firm-specific situation. Nevertheless, the responses can easily be aggregated to interesting sectoral or macroeconomic indicators. One such indicator measures firms' credit demand by dividing the number of firms with credit demand (all categories except 2.1) by the total number of firms. Another indicator could measure the restrictiveness of banks' lending behavior by dividing the number of firms answering 'restrictive' (category 1.1) by the number of participants who have conducted credit negotiations (category 1.1 – 1.3). Compared to the previous credit indicator, this second indicator has the advantage of being only based on those firms which have actually conducted credit negotiations. A third indicator can be used to measure the degree of credit restrictedness in the economy. Credit restricted firms consist of those reporting that the bank was 'restrictive' in the recent negotiation (category 1.3) and those that have not conducted credit negotiations despite the need for credit (category 2.2). The indicator corresponds to the ratio of credit restricted firms to the number of all survey participants.

CONCLUSION

The evaluation of the special question provides two important insights. First, more than half of the respondents have not been active in the credit market during the previous 12 months. Thus, their assessment of banks' lending is not based on their own experience. This is due to the formulation of the question, which is directed towards a general appraisal and thus differs from the other questions of the ifo Business Survey. Secondly, the responses of firms active in the credit market over the past 12 months to the credit question are positively correlated with their individual experience. However, this correlation is far from perfect, indi-

[2] Since 2011 the questionnaire of the Austrian business survey, which is conducted by WIFO, contains both the regular credit and the special question. The questions are asked quarterly. The empirical analysis in Fidrmuc, Hainz and Hölzl (2017) confirms our results.

cating that in many cases the assessment is based on non-firm-specific information.

On the basis of these results, the credit question will be formulated differently in the future. It will be collected quarterly in March, June, September and December as part of the ifo survey. The newly formulated credit question has two main advantages. The first advantage is the information that reflects the individual situation of the firm. Thus, on the one hand, more precise overall economic indicators can be constructed. On the other hand, the data are more suitable for evaluating firm-level data. The second advantage is the possibility to form not only an indicator of banks' willingness to provide loans, such as the current credit crunch indicator, but also to calculate indicators for credit demand as well as for the degree of credit restrictedness in the German economy.

REFERENCES

Coibion, O., Y. Gorodnichenko and S. Kumar (2015), *How Do Firms Form Their Expectations? New Survey Evidence*, NBER Working Paper 21092.

European Central Bank (2017), *Bank Lending Survey*, https://www.ecb.europa.eu/stats/ecb_surveys/bank_lending_survey/html/index.en.html.

Fidrmuc, J., Ch. Hainz and W. Hölzl (2017), *Dynamics of Access to Credit and Perceptions of Lending Policy: Evidence from a Firm Survey*, mimeo.

Kuchler, T. and B. Zafar (2015), *Personal Experiences and Expectations about Aggregate Outcomes*, Federal Reserve Bank of New York Staff Reports 748.

Lamla, M.J. and S.M. Lein (2014), "The Role of Media for Consumers' Inflation Expectation Formation", *Journal of Economic Behavior and Organization* 106, 62–77.

Madeira, C. and B. Zafar (2015), "Heterogeneous Inflation Expectations and Learning", *Journal of Money, Credit and Banking* 47, 867–896.

Malmendier, U. and S. Nagel (2016), "Learning from Inflation Experiences", *Quarterly Journal of Economics* 131, 53–87.

*Jana Lippelt**

Liquid Gas on the Rise

According to BP, natural gas is currently the fastest growing fuel. Particularly liquid natural gas (LNG) has developed into a significant factor on the global energy market and will continue to grow in the future. Due to environmental policy decisions, flexible transport options and promising developments in the transport sector, global demand has increased by 6.6 percent annually since 2000 and is currently growing seven times faster than natural gas (see BP 2017).

LNG is natural gas which is cooled down to approximately – 162°C and passes into the liquid aggregate state. As a result, its expansion is only six hundredths of the gaseous state (see Linde Group 2016). The advantage is that LNG can be stored and transported in large quantities, which is done with special tank vessels and storage in special containers. LNG is therefore particularly suitable for long transport distances, while in the case of shorter routes, mostly compressed natural gas (CNG) is used. The long distance transport is mainly carried out by LNG tankers, of which more than 400 are currently in use worldwide (see International Gas Union 2016). At the port of arrival, the liquefied gas is then returned in the gaseous state in regasification plants and fed back into pipelines or transported by truck.

Natural gas generally accounts for 25 percent of global energy demand, while LNG accounts for 10 percent of the energy demand. This share has hardly changed since 2010 (see International Gas Union 2016). LNG is traditionally used in power generation and in industry to generate refrigeration for process flows as well as shore power supply in ports. It is especially important in those countries where there is no pipeline network, such as Japan, South Korea or Taiwan (see International Gas Union 2016).

For some years, LNG has been increasingly used as a marine fuel for inland sea shipping and is increasingly replacing heavy fuel oil and ship diesel. One of the reasons for this is the introduction of emission control areas in different maritime regions of Europe and North America under the MARPOL agreement, which imposes stricter limits on the emission of airborne pollutants (see LNG for Shipping 2015). In addition, savings in fuel costs and the accessibility of new sales markets play a role. Liquid gas has the advantage that nitrogen and sulfur dioxide emissions can be reduced by up to 100 percent compared to diesel engines. Also CO_2 emissions can be reduced by 20 percent. Furthermore, the noise pollution is reduced by half compared to diesel-powered ships (see World Ports Climate Initiative 2016). Up to now, however, only around 90 ships with pure LNG drive have been operating worldwide. This is partly due to the still inadequate LNG infrastructure in many ports. By 2020, however, it is expected that between 400 and 600 LNG vessels will be put into service (see LNG World Shipping 2016). LNG is also used in road traffic, especially in buses and urban vehicles as well as heavy vehicles in the mining industry. Increasingly, however, trucks are being equipped with LNG drives. In the future, there will be a substantial potential for growth worldwide in this sector (see Börsenzeitung 2016).

* ifo Institute.

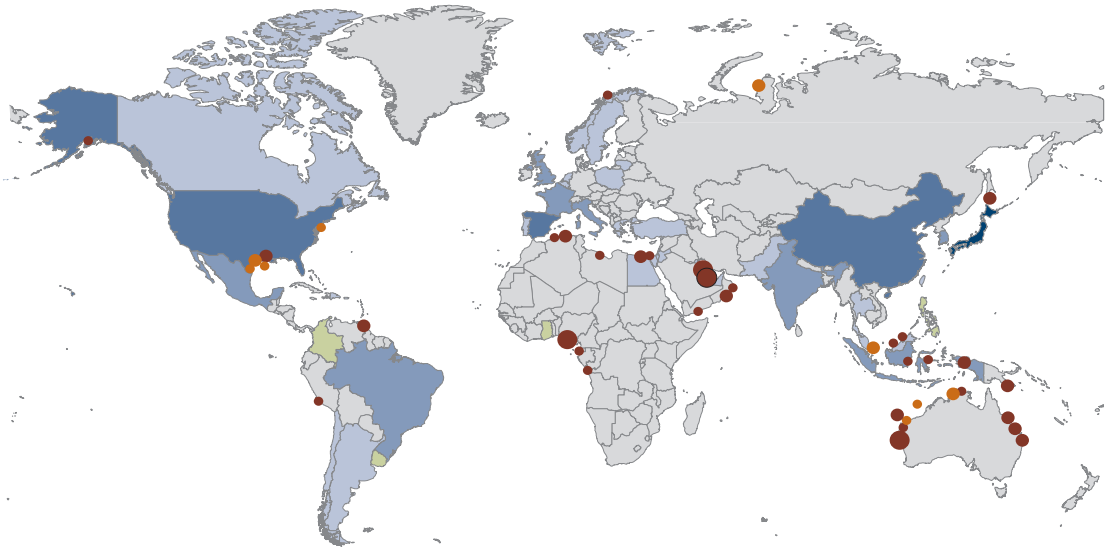
INFRASTRUCTURE

The global infrastructure in LNG is currently distributed among some 46 countries and is being steadily expanded. In 33 countries, there are more than 120 import terminals where LNG is fed into the regional pipeline network or otherwise transported (see Figure 1). In addition, there are almost 20 countries that liquefy natural gas and export it. This is particularly evident in Australia and the United States, which already have a large number of plants or are expanding them further. However, LNG is also exported in large amounts from the Middle East, Southeast Asia and Africa.

The world´s highest density of terminals for the import of LNG is currently in Japan with 34 plants. The reason is that Japan, besides South Korea and Taiwan, has no pipeline network through which natural gas can be transported (see International Gas Union 2016). In China, 12 plants are currently in operation and 10 more are being planned or under construction. In 2015 the import terminals worldwide reached a regasification capacity of 757 MT, which is mainly due to new plants in Egypt, Jordan and Pakistan, but also Japan. In addition to the import and export infrastructure, the global LNG fleet is also being expanded. For example, 39 new LNG-powered ships where launched in 2016 (see Gas Strategies 2016).

Europe currently has only one liquefaction plant – in Norway (Hammerfest). In countries such as Spain, France and Britain, there are a number of import terminals that will continue to grow in the future (see International Gas Union 2016). At the beginning of 2016, the first terminal was put in operation, while in Germany there is still no such facility and the planning is still uncertain. The expansion of the LNG infrastructure is being pursued in Europe, among other things, by the EU Directive on the expansion of the infrastructure for alternative fuels (2014/94), adopted in 2014. They are intended to substantially reduce the dependence on oil as well as environmental pollution caused by traffic (see Europäische Union 2014). In addition, it envisages the expansion of loading points for LNG and electric

Figure 1
Global LNG Infrastructure



As of end 2016. Terminals under construction in previous importing countries are not shown.

Source: Gas Infrastructure Europe (2016); International Gas Union (2015); Federal Energy Regulatory Commission (2017); APPEA (2016). © ifo Institute

vehicles. By the end of 2025, a large number of LNG petrol stations in the seaports are to be established in the EU and by 2030 in inland ports. Terminal stations are understood to be terminals, tanks, mobile containers and bunkers (see Europäische Union 2014). Ships should be able to travel in the entire TEN-V core network.[1] Against this backdrop, in November 2016, the National Strategic Framework for Infrastructure for Alternative Fuels was adopted in Germany (see Bundesministerium für Verkehr und digitale Infrastruktur 2016). In addition to shipping, the construction of this filling station infrastructure also includes heavy road transport and is intended to complement the already existing petrol station network for autogas (LPG) in the EU. A special project within the framework of the EU Directive is the LNG Blue Corridors Project (2013), in which LNG is to be used as an alternative fuel for road transport on medium and long distant routes (see European Commission 2016).

WORLDWIDE DEVELOPMENT

The global trade with LNG reached a volume of 245 MT in 2015 and thus 4.5 MT more than 2014. The largest buyers, Japan, South Korea and China, came from Asia. However, sales here were lower than in the previous year. One reason for this is the fact that nuclear power plants have been back on line in Japan since 2013. In addition, Japan has increasingly focused on improving energy efficiency and expanding renewable energies (especially photovoltaics), which has led to lower demand for LNG (see International Gas Union 2016). The same is true for South Korea: here, since 2015, it has been increasingly invested in coal power, but also additional nuclear power plants. In contrast to falling demand in Japan and South Korea, sales in LNG were shifted to new customers such as Egypt, Pakistan, Jordan and Poland (see EIA 2016). In China and India, too, sales are expected to remain high. In North America, the import of LNG declined due to an increasing domestic production of shale gas in recent years, which meant that Canada and Mexico, supplied by the North American pipeline network, also required less liquid gas (see International Gas Union 2016).

Among the 19 global exporting countries for LNG, the Middle East is the strongest, with Qatar in 2015 providing around one third of the global supply at 78 MT. Exports from Southeast Asia (Malaysia, Indonesia) and Australia have also increased in recent years. In this respect, Australia has overtaken Malaysia and has been the world's second-largest exporter since 2015 (see International Gas Union 2016). This trend is expected to continue: until 2019 further locations are to be added (see Figure 1). Thus in a few years Australia could replace Qatar as the world's largest LNG exporter (see BP 2017). Also the US and Russia are further expanding their export infrastructures. Three other terminals in Russia and eight locations in the United States are currently under construction or are starting with first deli-

[1] TEN-T network: Transeuropean transport network, consisting of the total and core network, which includes roads, railways, inland waterways, sea and inland ports as well as airports and transshipment terminals in the EU – see Bundesverband der deutschen Industrie e.V. (2016).

veries. Russia is reacting to the increasing supply of Southeast Asia, Australia and the United States (see Börsenzeitung 2016). These developments show that the supply of LNG, which has already grown steadily in the recent past, is further expanding. According to experts, in the future there could be a much faster growth of spatially and temporally flexibly transportable LNG compared to traditional pipelines (see BP 2017). Already for 2016 an output of 270 MT LNG was expected and thus 9 percent more than 2015 (see Gas Strategies 2016). On the other hand, there has been a slight downturn in demand in some importing countries of Asia, which, however, could in the future be relativised by other sales markets (see BP 2017). After four new importers have already been added in 2016, only a few new sales countries can be expected in the near future. Due to this oversupply and low gas prices, some planned projects could be cancelled in the future.

REFERENCES

Börsenzeitung (2016), "Mit Flüssigerdgas vom veränderten Energiemix profitieren", 3 March, https://www.boersen-zeitung.de/index.php?li=1&artid=2016170803&artsubm=&subm=.

BP (2017), *BP Energy Outlook* 2035, http://www.bp.com/content/dam/bp-country/de_de/PDFs/energie-analysen/bp-energy-outlook-2017.pdf.

Bundesministerium für Verkehr und digitale Infrastruktur (2016), *Nationaler Strategierahmen über den Aufbau der Infrastruktur für alternative Kraftstoffe als Teil der Umsetzung der Richtlinie 2014/94/EU,* http://www.bmvi.de/SharedDocs/DE/Anlage/MKS/mks-nationaler-strategierahmen-afid.pdf?__blob=publicationFile.

Bundesverband der deutschen Industrie e.V. (2016), *Fließender Verkehr, auch über Ländergrenzen hinweg – Bedeutung Transeuropäischer Verkehrsnetze (TEN-V),* http://bdi.eu/artikel/news/fliessender-verkehr-auch-ueber-laendergrenzen-hinweg-bedeutung-transeuropaeische-verkehrsnetze-ten-v/.

EIA – U.S. Energy Information Administration (2016), *As Japan and South Korea Import Less LNG, Other Asian Countries Begin to Import More*, http://www.eia.gov/todayinenergy/detail.php?id=27652.

Europäische Union (2014), *Richtlinie 2014/94/EU des Europäischen Parlaments und des Rates vom 22. Oktober 2014 über den Aufbau der Infrastruktur für alternative Kraftstoffe*, http://www.solarer-wasserstoff.de/download/richtlinie_de.pdf.

European Commission (2016), *Good Practice Examples – Appendix D: LNG Blue Corridors Project Fact Sheet*, http://ec.europa.eu/transport/sites/transport/files/themes/urban/studies/doc/2016-01-alternative-fuels-implementation-good-practices-appendix-d.pdf.

Gas Infrastructure Europe (2016), *LNG Map*, http://www.gie.eu/index.php/maps-data/lng-map.

Gas Strategies (2016), *The Outlook for LNG in 2016 – Supply Growth But Where Is the Demand?*, http://www.gasstrategies.com/sites/default/files/download/outlook_for_2016_-_gas_strategies.pdf.

International Gas Union (2016), *IGU World Gas LNG Report – 2016 Edition*, http://www.igu.org/publications/2016-world-lng-report.

Linde Group (2016), *Liquefied Natural Gas (LNG)*, http://www.the-linde-group.com/de/clean_technology/clean_technology_portfolio/merchant_liquefied_natural_gas_lng/index.html.

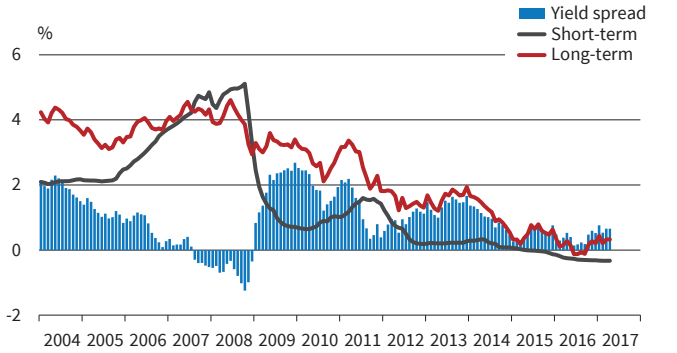
LNG for Shipping (2015), *Liquefied Natural Gas: An Attractive Fuel Solution for Shipping*, https://lngforshipping.eu/wp-content/uploads/2015/02/Brochure-LNG-def.pdf.

LNG World Shipping (2016), *Mapping the World's LNG-Fuelled Fleet,* http://www.lngworldshipping.com/news/view,mapping-the-worlds-lngfuelled-fleet_45473.htm.

World Ports Climate Initiative (2016), *LNG Fuelled Vessels – Benefits of LNG*, http://www.lngbunkering.org/lng/environment/benefits-of-LNG.

Financial Conditions in the Euro Area

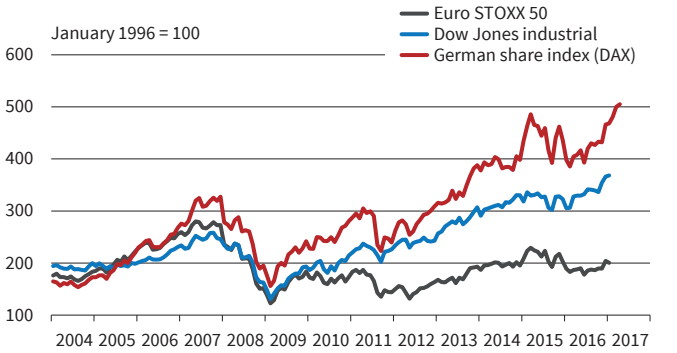
Nominal Interest Rates[a]



[a] Weighted averages (GDP weights).
Source: European Central Bank. © ifo Institute

In the three-month period from February 2017 to April 2017 short-term interest rates remained unchanged: the three-month EURIBOR rate amounted to – 0.33% in February 2017 and also in April 2017. Yet the ten-year bond yields increased from 0.21% to 0.33% in the same period. The yield spread reached 0.66% in April 2017, up from 0.53% in February 2017.

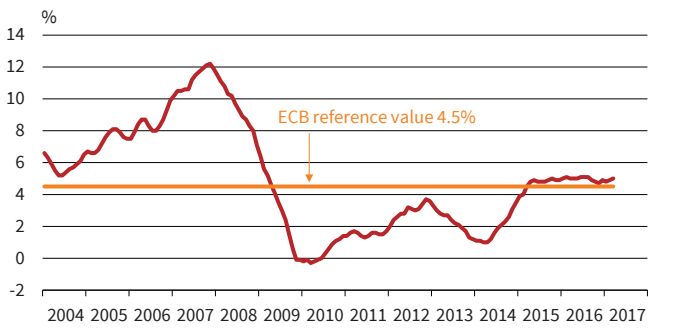
Stock Market Indices



Sources: Deutsche Börse; Dow Jones; STOXX; Datastream. © ifo Institute

The German stock index DAX increased in April 2017, averaging 12,438 points compared to 11,834 points in April 2016. The Euro STOXX also grew from 3,320 to 3,560 in the same period of time. The Dow Jones International increased also, averaging 20,941 points in April 2017, compared to 20,812 points in February 2017.

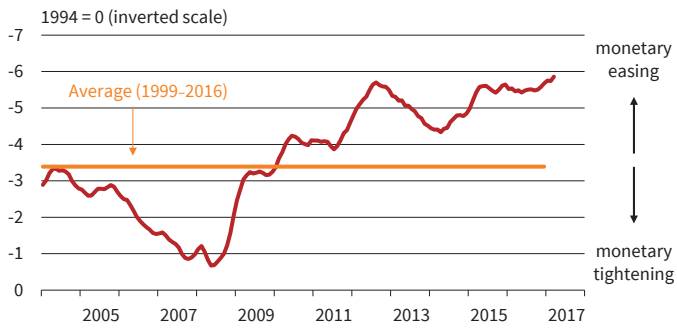
Change in M3[a]



[a] Annual percentage change (3-month moving average).
Source: European Central Bank. © ifo Institute

The annual growth rate of M3 decreased to 4.9% in April 2017, from 5.3% in March 2017. The three-month average of the annual growth rate of M3 over the period from February 2017 to April 2017 reached 5.0%.

Monetary Conditions Index



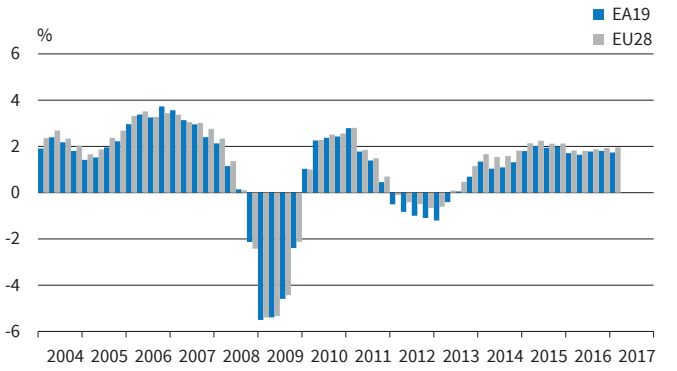
Note: MCI index is calculated as a (smoothed) weighted average of real short-term interest rates (nominal rate minus core inflation rate HCPI) and the real effective exchange rate of the euro.
Sources: European Central Bank; calculations by the ifo Institute. © ifo Institute

Between April 2010 and July 2011 the monetary conditions index remained rather stable. This index then continued its fast upward trend since August 2011 and reached its first peak in July 2012, signalling greater monetary easing. In particular, this was the result of decreasing real short-term interest rates. In March 2017 the index continued to further grow even on a higher level than that of July 2012.

EU Survey Results

Gross Domestic Product in Constant 2010 Prices

Percentage change over previous year

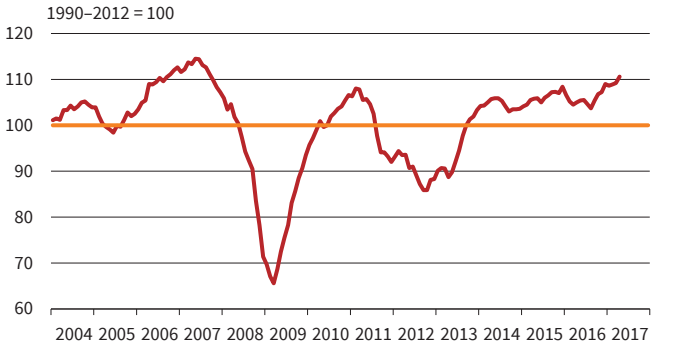


Source: Eurostat. © ifo Institute

According to the Eurostat estimates, GDP grew by 0.5% in both the euro area (EA19) and the EU28 during the first quarter of 2017, compared to the previous quarter. In the fourth quarter of 2016 the GDP grew by 0.5% and 0.6%, respectively. Compared to the first quarter of 2016, i.e. year over year, seasonally adjusted GDP rose by 1.7% in the EA19 and by 2.0% in the EU28 in the first quarter of 2017.

EU28 Economic Sentiment Indicator

Seasonally adjusted

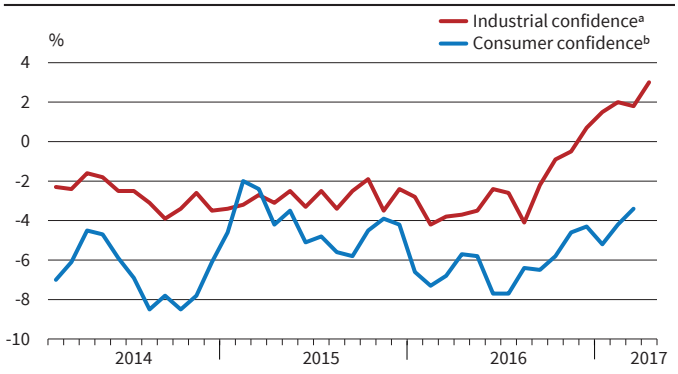


Source: European Commission. © ifo Institute

In April 2017 the Economic Sentiment Indicator (ESI) increased markedly in both the euro area (+ 1.6 points to 109.6) and the EU28 (+ 1.4 points to 110.6). In both the EU28 and the EA19 the ESI stands above its long-term average.

EU28 Industrial and Consumer Confidence Indicators

Percentage balances, seasonally adjusted



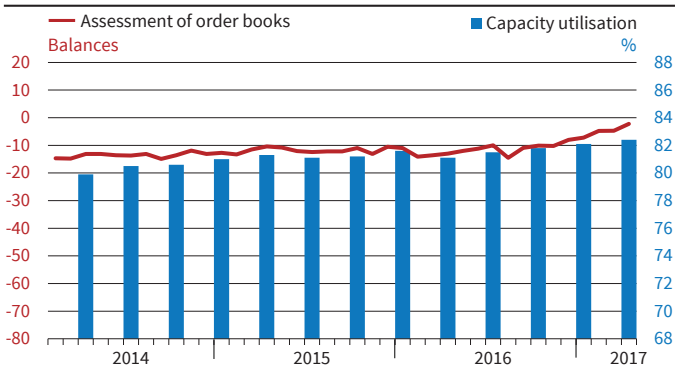
Source: European Commision. © ifo Institute

[a] The industrial confidence indicator is an average of responses (balances) to the questions on production expectations, order-books and stocks (the latter with inverted sign).

[b] New consumer confidence indicators, calculated as an arithmetic average of the following questions: financial and general economic situation (over the next 12 months), unemployment expectations (over the next 12 months) and savings (over the next 12 months). Seasonally adjusted data.

In April 2017, the *industrial confidence indicator* increased by 1.2 in the EU28 and by 1.3 in the euro area (EA19). The *consumer confidence indicator* also increased by 1.8 in the EU28 and by 1.4 in the EA19.

EU28 Capacity Utilisation and Order Books in the Manufacturing Industry

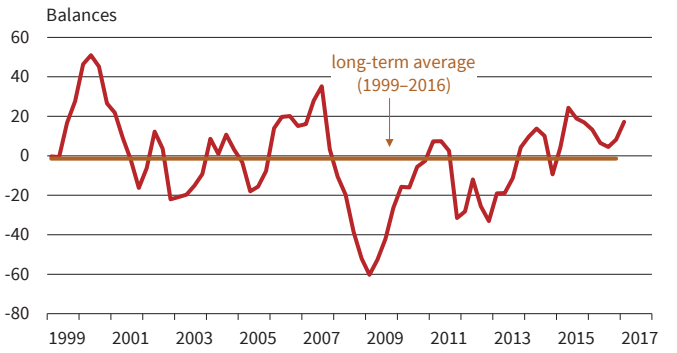


Source: European Commission. © ifo Institute

Managers' assessment of *order books* reached – 2.2 in April 2017, compared to – 4.7 in March 2017. In February 2017 the indicator had amounted to – 4.8. *Capacity utilisation* reached 82.4 in the second quarter of 2017, up from 82.1 in the first quarter of 2017.

Euro Area Indicators

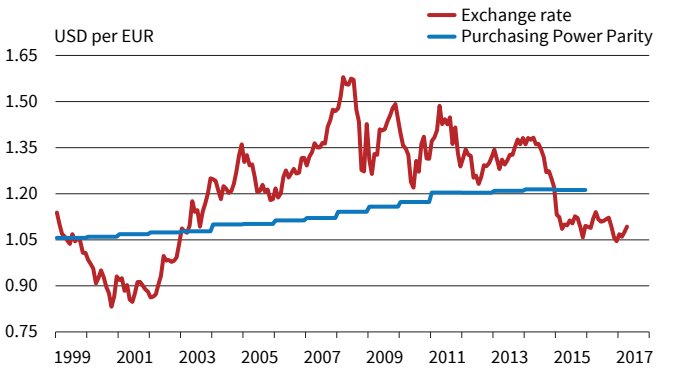
ifo Economic Climate for the Euro Area



Source: ifo World Economic Survey (WES) I/2017. © ifo Institute

The ifo Economic Climate for the euro area (EA19) improved markedly in the second quarter of 2017. The indicator rose from 17.2 balance points to 26.4 points, reaching its highest level since the onset of the global financial crisis in the late summer of 2007. Assessments of the current economic situation in particular were more favourable than last quarter. The six-month economic outlook also improved and economic growth looks set to accelerate noticeably in the first half of 2017.

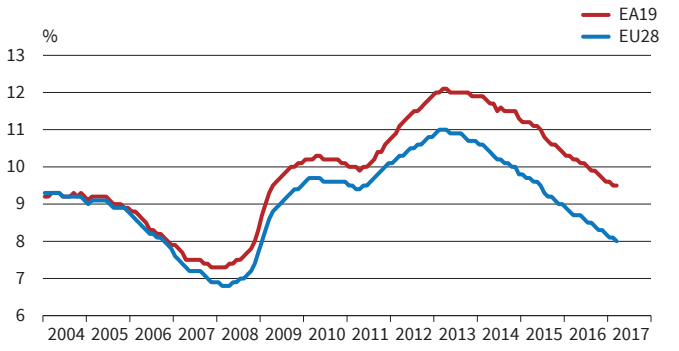
Exchange Rate of the Euro and PPPs



Sources: European Central Bank; OECD; calculations by the ifo Institute. © ifo Institute

The exchange rate of the euro against the US dollar averaged approximately 1.08 $/€ between February 2017 and April 2017. (In January 2017 the rate had amounted to around 1.07 $/€.)

Unemployment Rate

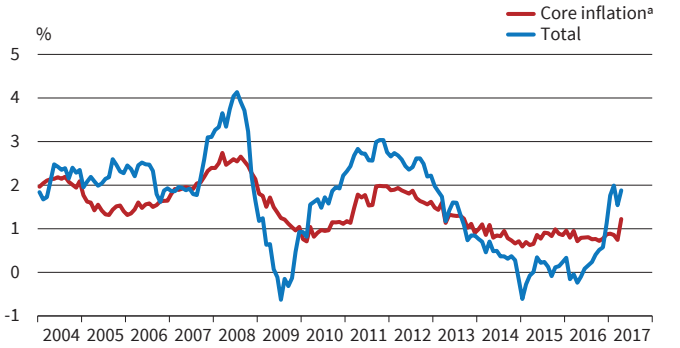


Source: Eurostat. © ifo Institute

Euro area (EA19) unemployment (seasonally adjusted) amounted to 9.5% in March 2017, stable compared to February 2017. EU28 unemployment rate was 8.0% in March 2017, down from 8.1% in February 2017. In March 2017 the lowest unemployment rate was recorded in the Czech Republic (3.2%) and Germany (3.9%), while the rate was highest in Greece (23.5%) and Spain (18.2%).

Inflation Rate (HICP)

Percentage change over previous year



[a] Total excl. energy and unprocessed food.
Source: Eurostat. © ifo Institute

Euro area annual inflation (HICP) was 1.9% in April 2017, up from 1.5% in March 2017. A year earlier the rate had amounted to -0.2%. Year-on-year EA19 core inflation (excluding energy and unprocessed foods) amounted to 1.2% in April 2017, up from 0.7% in March 2017.