Can welfare and labour market regimes explain cross-country differences in the unemployment of young people during the crisis?

Dennis Tamesberger[1]

Abstract

The current financial and economic crises, has affected young people to a varying extend in the member states of the European Union. A strong cross-country variation concerning the presence and the duration of unemployment among young people is observable. The article shows, that this cross-country variation can be partly explained by different welfare and labour market regimes. On the basis of a hierarchical cluster analysis it was possible to identify five different regimes in the EU 27, which represent similarities and differences concerning youth relevant institutions. Finally, this article argues that the flexicurity regime is more able to avoid long-term unemployment of young people but the apprenticeship countries are better in preventing youth unemployment in general in comparison to the flexicurity regime and the family supported countries.

[1] Address for correspondence: Dennis Tamesberger, Department for Economic, Welfare and Social Policy, Chamber of Labour, Volksgartenstraße 40, 4020 Linz, Austria; Email: Tamesberger.d@akooe.at. The author is indebted to Johann Bacher. Thanks are offered to Christina Koblbauer, Heinz Leitgöb and Franz Mohr for helpful comments. The opinions expressed in this article are those of the author and do not necessarily reflect those of the Chamber of Labour.

1. Introduction

The financial and economic crisis, beginning in the year 2007, produced painful outcomes in the labour market and society in general. Mass unemployment – a phenomenon previously thought to have been left in Europe's past – is nowadays widespread in many European Countries. A number of research studies (Bell and Blanchflower 2011; Boeri 2011; Cahuc et al. 2013; Choudhry, Marelli and Signorelli 2012; O'Higgins 2012; Scarpetta, Sonnet and Manfredi 2010) point to youth unemployment in particular as having become a major problem. The number of young unemployed under 25 years increased from 4.2 million in the year 2007 to 5.6 million in the year 2013, and the youth unemployment rate increased from 15.7 % to 23.6 % in this same time period (Eurostat 2015). In a more recent article, O'Higgins (2015) refers to the fact that the increase of long-term unemployment was much higher for young people than for adults. This unexpected finding is of particular concern for young people because of the long lasting negative consequences of having unemployment go beyond a short and temporary experience.[2]

If we look at youth unemployment ratios[3] and youth long-term unemployment (figure 1) we see remarkable cross-country variation, which is not exclusively explainable by country specific variations in economic developments during the crisis. Further, a strong correlation between the youth unemployment ratio and youth long-term unemployment is not apparent ($r=0.143$, $p=0.053$). On the one hand, there are countries like Finland and Sweden, which have the lowest percentage of youth long-term unemployment. Despite a noticeable decline in economic growth, Finland was able to reach the same level of long-term unemployment as before the crisis. But the youth unemployment ratios of Finland and Sweden are higher than in countries like Denmark, Austria, the Netherlands, Lithuania, Luxembourg and Germany. One possible interpretation of this circumstance is that in Finland[4] and Sweden young people have a higher risk of unemployment due to flexible labour markets, yet at the same time also higher chances of quick reintegration into the labour market or the education system. Germany, Austria and Luxembourg are those countries with the lowest youth unemployment ratios in the EU, which is mainly explained by the dual apprenticeship system (Eurofound 2011; O'Higgins 2010), though in these countries the young unemployed have a higher risk of being unemployed long-term compared to Finland and Sweden. Denmark seems to be a

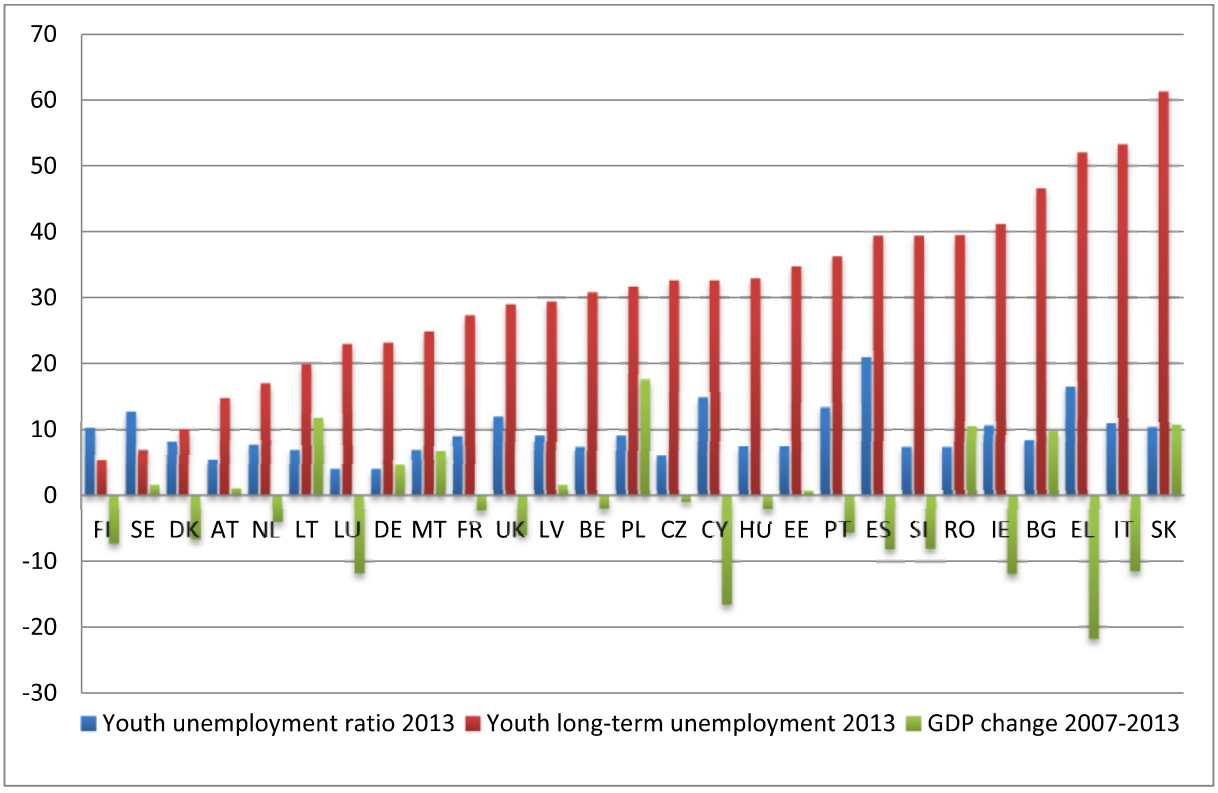
[2] Concerning the influence of youth unemployment on future unemployment and on income development, see e.g. Arulampalam et al. (2001); Gregg (2001); Gregg and Tominey (2005); Halleröd and Westberg (2006); Mroz and Savage (2006). Interestingly, Morsy (2012) also shows a correlation between youth unemployment and income inequality. Concerning the influence on health status and life satisfaction, see e.g. Beelmann et al. (2001); Bell and Blanchflower (2011); Ervasti and Venetoklis (2010) and Kieselbach (2003).

[3] Dietrich (2013); Howell (2005) and Tamesberger (2015) refer to problems related to cross-country comparisons by using only the youth unemployment rate. To avoid this problem, the youth unemployment ratio is used in this article.

[4] Concerning special labour market programs like youth workshops in Finland, see e.g. Wetzelhütter (2013).

special case. Denmark was able to keep the youth unemployment ratio and youth long-term unemployment relatively low, despite the fact that Denmark was badly affected by the crisis with three years of GDP contraction. One possible explanation for this can be the Danish flexicurity system, which provides high security and low job-loss worry for young employees (Ebralidze 2011). On the other hand, the countries with the highest percentage of youth long-term unemployment are Slovakia, Italy, Greece and Bulgaria. Interestingly, it can be observed that in Slovakia the GDP growth of about 10% since 2007 has not lead to an easing of tension on the youth labour market. Only in the year 2008 was a decrease of the youth unemployment ratio and - with a time lag of one year – a decrease of youth long-term unemployment observable in Slovakia. After 2009, both indicators increased constantly. Another interesting case is Poland, which is the only country in the EU 27 without a single year of recession since the beginning of the financial and economic crisis. Nevertheless, the youth unemployment ratio and the percentage of young unemployed long-term remain at a relatively high level.

Figure 1: Youth unemployment ratio, youth long-term unemployment and GDP change 2007-2013 in %, 27 countries and EU 27



Source: Author's calculations based on Eurostat (2015).

Notes: The youth unemployment ratio is the number of unemployed young people aged 15-24 as a percentage of the population of the same age (%). Long-term unemployment (12 months or more) is a percentage of the total of young unemployed aged 15-24 (%). GDP change is real Gross Domestic Product per capita as percentage change since 2007.

This background leads to the research question of how cross-country differences in youth unemployment and in particular in long-term unemployment can be explained. Siebert (1997, 39) points out that "any labour market is surrounded by an array of institutional arrangements that form a complex web of incentives and disincentives on both sides of the market". Therefore, it is a plausible assumption that welfare and labour market regimes contribute to cross-country differences. The literature, however, provides no consensus on the influence of institutions on unemployment. There are many econometric studies which conclude that "inflexible" or "rigid" labour markets - because of institutions and regulations - are the root of unemployment (see e.g. Bassanini and Duval 2009; Bernal-Verdugo, Furceri and Guillaume 2012; Nickel 1997). This view was called into question by works of Baccaro and Rei (2007), Blanchard and Wolfers (2000), Blanchard (2006), and Stockhammer and Klär (2011). According to their evidence, labour market institutions have no or only a "minor" effect on unemployment. Sturn (2013) shows that it depends on labour market regimes whether institutions reduce or increase unemployment in a country. Available knowledge concerning the relation of youth unemployment and institutions is even less satisfying. There are only a few works with this focus (see e.g. Breen 2005; Isengard 2003; Lange, Gesthuizen and Wolbers 2014; O'Higgins 2015). In the literature on welfare state regimes, the issue of unemployment and youth unemployment is also underexposed (Cinalli, Giugni and Graziano 2013). The present article contributes to this discussion and tries to deepen the knowledge by analysing the influence of welfare and labour market regimes on youth unemployment, in particular on long-term unemployment. It provides a more current and comprehensive perspective on the unemployment situation of young people in the EU by considering the economic crisis and differences of the institutional arrangements in European labour markets. For this aim, first a cluster analysis with youth relevant institutions will be applied, and second it will be shown if these welfare and labour market regimes are able to explain cross-country differences in youth unemployment.

2. Relation of labour market institutions and youth unemployment

The question of how labour market institutions influence unemployment not only has a long tradition but is also an old matter of dispute in economic theory. Even though unemployment is

recognised as a complex phenomenon with a number of contributing factors, there are generally two main paradigms. The neoclassic theory assumes that if employers and households are acting rationally (maximizing utility and profits) and at the same time prices and incomes are flexible, then a situation of equilibrium with a "natural rate of unemployment" will prevail. If unemployment occurs empirically above this "natural rate of unemployment", neoclassic economics would explain it by labour market rigidities, meaning that the free working of market forces is disturbed by exogenous factors like the state or trade unions (Friedman 1968, 8f.). As a consequence, labour market institutions appear as causes of unemployment because the actual wage will be above the equilibrium wage corresponding to market forces (Guerrero 2000, 36f.). Accordingly, long-term unemployment is also explained by activities of political institutions, in particular by welfare payments and unemployment insurance (Summers and Clark 1979).

On the contrary, the Keynesian theory explains unemployment mainly by a lack of aggregated demand because of insufficient investments. Therefore, in the Keynesian view, labour market institutions play a less important role. For reducing unemployment the state is needed to stimulate and compensate the gap of private investment by concurrent implementation of an expansionary monetary policy and a fiscal policy (Stockhammer 2004). If we apply these general perspectives[5] on youth unemployment, it can be assumed, from a neoclassic perspective, labour market institutions will have a positive influence on youth unemployment, meaning that labour market institutions increase youth unemployment. In contrary, from a Keynesian perspective, it can be assumed that these institutions have no significant influence because the main influencing factor is aggregated demand. However, these institutions can have an influence on aggregated demand, which is at least the case for minimum wages.

The empirical literature gives a heterogeneous picture. Concerning minimum wages, older works like from Freeman and Wise (1982) have referred to the negative influence on youth employment. Neumark and Wascher (2004) came to a similar result by analysing 17 OECD countries in the period 1975-2000. But they also showed that the impact of minimum wages on youth employment differs strongly across countries depending on country-specific institutions and labour market policies. Bassani and Duval (2006) find, on the other hand, a positive effect of minimum wages on youth employment rates.

The existing empirical literature on Employment Protection Legislation (EPL) is similarly unclear. EPL can have positive effects on youth unemployment (Bassani and Duval 2006; Breen 2005; Russell and

[5] Considering the strong correlation between adult unemployment and youth unemployment (Bell and Blanchflower 2011; Tamesberger 2015), it is nearby that the general theoretical perspectives is also relevant for explaining youth unemployment.

O'Connnel 2001), can lead to an insider insider-outsider labour market (Boeri 2011; Cahuc et al. 2013) and can have as well as negative effects (O'Higgins 2012; Wolbers 2007), which means that EPL decreases the unemployment risks of young people. Finally, Noelke (2011) raises serious doubts on the robustness of current evidence concerning the correlation between EPL and youth unemployment, and resists drawing any political recommendation from this.

The influence of unions on youth unemployment is less well analysed. Tamesberger (2015) found no significant influence of the degree of coordination in collective bargaining on different youth unemployment indicators. He explains this result mainly through the circumstance that the strength of the union is also correlated with other significant variables in the model like expenditure for active labour market policy or the adult unemployment rate. Bertola et al. (2007) provide evidence that the influence of unions can lower employment levels of young people relative to the prime-aged group. In contrary, Eurofound (2012) shows for young people from the member states of the European Union (EU) that strong union representation in terms of high levels of collective bargaining coverage and coordination reduces the risk of not being in employment, education or training (NEET).

Further institutional aspects are active labour market policies (ALMP) which aim to preserve or upgrade the skills of unemployed people to increase their employability. Young people and those who have been unemployed long-term are a special target group of ALMP in regard to bringing them back to education or sponsored employment (Rovny 2011). Empirically it has been proven that properly designed ALMP is able to reduce unemployment among young people (Bernal-Verdugo et al. 2012; Eurofound 2012; Russell and O'Connell 2001) and helps young people in particular to escape from an out-of-labour-force status (Tamesberger 2015). Opposite findings are provided by Card, Kluve and Weber (2009) on the basis of a meta-analysis of recent microeconometric evaluations.

These different findings and this heterogeneous picture are eventually linked to the circumstance that "labour market institutions are part of a broader institutional framework and that different labour market regimes exist" (Sturn 2013, 239). It is therefore likely that for the explanation of cross-country differences in youth unemployment and long-term unemployment, welfare and labour market regimes themselves are relevant as well. Against this background, three hypotheses can be formulated. First, it is possible to identify different welfare and labour market regimes in the European Union. Second, these regimes have an influence on the unemployment and long-term unemployment of young people. Third, the influence of the welfare and labour market regimes is different for the youth unemployment ratio and the permanence of unemployment.

3. Previous work in the area of welfare and labour market regimes

Studies on welfare regimes by Esping-Andersen (1990) are some of the most influencing works in this field. He pointed out that because "the labor market is systematically and directly shaped by the (welfare) state, it follows that we would expect cross national differences in labor-market behaviour to be attributable to the nature of welfare-state regimes" (Esping-Andersen 1990, 144). In other words, politics – and the institutions or regulations which are created by politics – have a causal impact on labour market outcomes. To achieve the target of full-employment, he puts the old question of Kalecki to the center: "What kind of institutional framework will permit private enterprise and a powerful working class to coexist?" (Esping-Andersen 1990, 163). According to this idea, good labour market outcomes are related to the political capacity of balancing class power. In the view of Esping Andersen, labour market institutions and regimes are aiming to protect people from negative (labour) market developments and he describes it as a process of de-commodification if "individuals, or families, can uphold a socially acceptable standard of living independently of market participation" (Esping-Andersen 1990, 37). Finally, he was able to identify three different welfare-regimes, namely, the "liberal", the "conservative" and the "social democratic" welfare-regime, all of which differ according to the relation between market and the state, the provided social rights, and the degree of de-commodification (Esping-Andersen 1990). In the following years, the typology of Esping-Andersen (1990) was further developed with a fourth type being added by Leibfried (1992), Ferrera (1996) and Bonoli (1997), namely, the "latin" or the "southern" regime.[6] Saint-Arnaud and Bernard (2003) explored the question of whether it is, against the background of the economic developments, still possible to reconstruct this typology or if a convergence of the welfare regimes is identifiable. On the basis of hierarchical cluster analysis they confirmed the existence of these four welfare regimes. In contrary, more current empirical works suggest a different clustering of countries (Scruggs and Allan 2006) and point out that the countries have changed substantially since the 1980s (Bambra 2006). In a similar vein, Danforth (2014) emphasises out that for a validation of the welfare regimes across time, an extension of the concept of Esping-Andersen (1990) concerning social services, gender, poverty, and activation is necessary. By integrating these dimensions, Danforth (2014) was able to identify three worlds of welfare that first began emerging by 1975, the second by 1980, and the third became established by 1985.

A more specific focus on unemployment is provided by Gallie and Paugam (2000). They developed four "unemployment welfare regimes" in Europe on the basis of the following criteria: unemployment insurance coverage, level of compensation and expenditure on active employment

[6] Another extension of the typology is provided by Fenger (2007). He analysed the post-communist countries of Central and Eastern Europe and showed that they differ significantly from the traditional Western welfare states.

policies. These four regimes included the sup-protective regime which offers the unemployed a protection below the subsistence level; the liberal/minimal regime which provides a higher level of protection but active labour policy is minimally developed; the employment-centred regime which offers a much higher level of protection and extensive application of active employment policies; and the universalistic regime which is characterised by comprehensive coverage and a much higher level of financial compensation. Also the instrument of active labour market policy is used very extensively. Furthermore, Gallie and Paugam discussed a link between the unemployment welfare regimes and different models of family residence but came to the conclusion that the "dynamic of family residence is not entirely determined by the social protection regime" (Gallie and Paugam 2000, 18.). In a more recent work, Cinalli and Giugni (2013) developed – on the basis of these unemployment welfare regimes – youth unemployment regimes in Europe by using 16 different unemployment regulation and labour market regulation indicators, thereby opening a new research area. Their analysis located countries with a conceptual space from exclusive to inclusive unemployment regulations, and from rigid to flexible labour market regulations. The innovative point was the integration of two dimensions in the concept which showed at the same time two main influencing regulation arrangements for young people.

Eichhorst, Feil and Marx (2010) analysed education aspects as well as the differentiation between internal and external flexibility, whereby the former refers to activities inside the company and the latter concerns to general flexibility on the labour market. They applied cluster analysis to eight institutional indicators and refer to a typology which Atkinson developed in 1985. The result was a typology of four clusters, namely, the "education-based", the "market-oriented I", the "market-oriented II", and the "lower flexibility". Concerning the question of how labour market institutions and labour market regimes influenced the adaption of countries during the crisis, they conclude that especially countries with high internal flexibility were able to avoid a strong increase of unemployment. These countries are combining, on the one hand, strict labour market protection for the core employees and, on the other hand, a working time adjustment during the recession to avoid dismissals, like in Germany. But it also has to be mentioned that at the same time non-standard workers were very vulnerable to unemployment. O'Higgins (2015) used this labour market typology to prove their influence on different labour market indicators for young people. He showed that youth labour markets perform quite differently to variations in GDP depending on labour market regimes. In countries with strong employment protection, like in the education-based group of Continental Europe, young people suffer less from recessions. In contrary, in the 'low flexibility' group with low flexibility on all three dimensions, young people were stronger affected from falling

GDP in terms of a general reduction of employment as well as a change of the working conditions regarding temporary and/or part-time jobs. O'Higgins (2015) also analysed the long-term unemployment of young people but he found in the estimations no statistically significant differences between the labour market regimes. One exception was the Anglo-Saxon regime (Market I) but only on a lower level of significance. Also the explanatory power of the model concerning long-term unemployment is relatively low, between R^2 0.10 in the time period 2001-2006 and R^2 0.32 in the time period 2007-2012, which indicates the need for further investigation. It is conceivable that the explanatory force of typology of Eichhorst, Feil and Marx (2010) for youth unemployment is relatively low because some youth relevant institutions are not taken into account. For example, the vocational specificities of the educational systems are not considered. The current research illustrates that apprenticeship-based dual systems have a positive influence on the employment situation of young people (Breen 2005; Müller 2005; O'Higgins 2012; Shavit and Müller 2000; Tamesberger 2015; Wolbers 2007).

The GLOBALIFE-Project (Blossfeld 2006; Hofäcker and Blossfeld 2011; Mills and Blossfeld 2003) provides a comprehensive analysis of institutional factors on the uncertainty of young people through globalization. They analysed four main institutions or institutional filters, namely, the employment systems, educational systems, welfare regimes, and family systems. The research results confirm the influence of institutions on the labour market situation of young people. The main finding was that "the extent to which youth experience the consequences of globalization differs largely upon the nation-specific institutions that exist to shield, or conversely, funnel uncertainty to them" (Mills and Blossfeld 2003, 211).

To sum up, the presented literature indicates that different kinds of welfare and labour market regimes can be relevant to explain cross-country differences in unemployment and in youth unemployment. Being that since 2007 national institutions have changed through austerity programmes (see e.g. Diamond and Lodge 2014) and the crisis, the aim here is to investigate youth relevant institutional factors and to develop a typology of welfare and labour market regimes over the recession period

4. Method and data issues

For the cluster analysis, data from 27 European Countries for the time period 2007-2013 were used. This time period was chosen because it is characterized by the financial and economic crisis. Similar to Mills and Blossfeld (2003), it will be assumed that institutional factors from the field of welfare, unemployment, labour relation, education and family are relevant for the labour market situation of

young people. To grasp these institutional aspects, 15 indicators are used for the cluster analysis, which are described in detail in table 1. The welfare indicators include general government expenditure, expenditure for social protection and expenditure for sickness and health. Concerning unemployment policies both indicators for active labour market policy (expenditure for active labour market policy) and for passive labour market policy (net replacement rate and total expenditure for passive labour market policy) are used. That makes it possible to see different focuses in the unemployment policies of the analysed countries. To get an impression of the quality of the labour relation the union density rate, the degree of coordination of wage setting and the degree of government intervention setting the minimum wage are used. The last, is very rarely analysed but for the purpose of this article it seems to be relevant because the way how minimum wages are introduced is also an indication for the labour relations. The family as an institutional filter is captured in different ways. On the one hand the public expenditure for family/children and the proportion of young children under 3 years in formal childcare are used. Both indicators are an indication for the public involvement in childcare which could facilitate the reconciliation of family and working life of young people with children. On the other hand, the share of young adults living with their parents is integrated in the cluster analysis, which shows the dependence of young adults on their families. Concerning education the total public expenditure on education, the share of students in combined school- and work-based vocational education and the general enrolment rate of students aged 15-24 years are used. Thereby, different vocational frameworks as well as the general importance of education become visible.

Of course these five dimensions (welfare, unemployment, labour relation, education and family) overlap, complement and influence each other. Therefore, the systematic disjunction in table 1 has a more heuristic character. In contrary to Esping-Andersen (1990), Fenger (2007) and Cinalli and Giugni (2013), here no output indicators like unemployment are used because in a second step the developed typology should be used to explain labour market outcomes for young people. The cluster analysis was calculated with SPSS 22. The variables have been z-transformed. The WARD-method with squared Euclidean was applied because the merger procedure has a clear interpretation. The WARD-method minimizes the variance within groups and maximizes their homogeneity (Bacher, Pöge and Wenzig 2010; Everitt, Landau and Leese 2001). Finally, it was possible create five clusters which seem to be plausible to interpret (see chapter 5.1.). The decision for the five cluster solution has been made by graphical (Dendogram in figure 2) and content-related considerations. For example, on the basis of the Dendogram also a six cluster solution would have been possible but would lead to an isolation of Denmark from the cluster with Finland, Sweden and Belgium. Because of institutional similarities it makes sense to keep Denmark in this cluster.

Table 1: Variables for the cluster analysis

Label	Description of variable	Source
	Welfare indicator	
GOV_exp	Total general government expenditure in percentage of the GDP (mean 2007-2013)	Eurostat gov_10a_main
SOC_exp	Total expenditure for Social Protection in percentage of the GDP (mean 2007-2013)	ESSPROS - Eurostat spr_exp_sum
HEALTH_exp	Expenditure for Sickness/Health care in percentage of the GDP (mean 2007-2013)	ESSPROS - Eurostat spr_exp_sum
	Unemployment indicators	
ALMP_exp	Expenditure for ALMP (Type 2-7) as a ratio from GDP divided through the average unemployment rate (mean 2007-2012)	Eurostat lmp_expsumm, Nickel (1997)
Replac_rate	Net Replacement Rates (initial phase of unemployment for a single person with 67% of average income[7]) (mean 2007-2013)	OECD 2015
PLMP_exp	Expenditure for PLMP as a ratio from GDP divided through the average unemployment rate (mean 2007-2013)	ESSPROS - Eurostat spr_exp_sum
	Labour relation indicators	
ud	Union density rate, net union membership as a proportion of wage and salary earners in employment (mean 2007-2013)	Visser (2014)
coord	Degree of coordination of wage-setting (mean 2007-2011)	Visser (2014)
mws	Degree of government intervention setting the minimum wage (mean 2007-2011)	Visser (2014)

[7] OECD provides the Net Replacement Rates for different family types and different income levels. For young people, it can be assumed that especially the NET Replacement Rate below average income is relevant because most of the young people earn less than the average income.

Family indicators		
childcare_total	Proportion of young children under 3 years in formal childcare (mean 2007-2013)	EU-SILC - Eurostat, ilc_caindformal
Adults_home	Share of young adults aged 18-34 living with their parents (mean 2007-2011)	EU-SILC - Eurostat, ilc_lvps08
Fam_exp	Expenditure for Family/Children in percentage of the GDP(mean 2007-2012)	ESSPROS - Eurostat spr_exp_sum
Education indicators		
Edu_exp	Total public expenditure on education as % of GDP, for all levels of education combined (mean 2007-2011; Greece 2005)	Eurostat educ_figdp
Apprent_rate	Share of students in combined school- and work-based vocational education of all students in upper secondary education (mean 2007-2012)	OECD (2009-2014), Eurodice (2015), Breen (2005)
Enrolment_rate	Students (ISCED 1_6) aged 15-24 years - as % of corresponding age population (mean 2007-2012)	Eurostat educ_thpar

In a second step the relationship between the developed clusters and the dependent variables, the unemployment ratio (unemployed as a percentage of the population) and long-term unemployment (long-term unemployment [12 months or more] as a percentage of the total unemployment) of young people aged between 15 and 24 years, will be analysed. Both dependent variables are available at the Eurostat database (Eurostat 2015). A linear mixed-effects model (stata-modul xtmixed) will be applied.[8] The mixed-effects model assumes a hierarchical multilevel data structure and that on each level variables exist which have fixed or random effects on the dependent variable. In this article, to avoid autocorrelations, time is used as fixed effect. A Restricted Maximum Likelihood (RML) estimation is used because it is less biased compared to the Full Maximum Likelihood (FML)(Hox 2010). For the time period 2007-2013, N = 189 country-year-observations are available in the EU 27. Two models will be estimated. First, a random intercept model with independent variables (cluster) will be estimated. The cluster 1 apprenticeship is the baseline. Second, the random intercept model will be estimated with the control variable of GDP growth to

[8] For a practical guide to the use statistical software for Linear Mixed Models, see West, Welch and Galecki (2015).

see whether the effects of welfare and labour regimes on youth unemployment are still visible or if the cross-country-differences in youth unemployment are only the result of different economic developments.

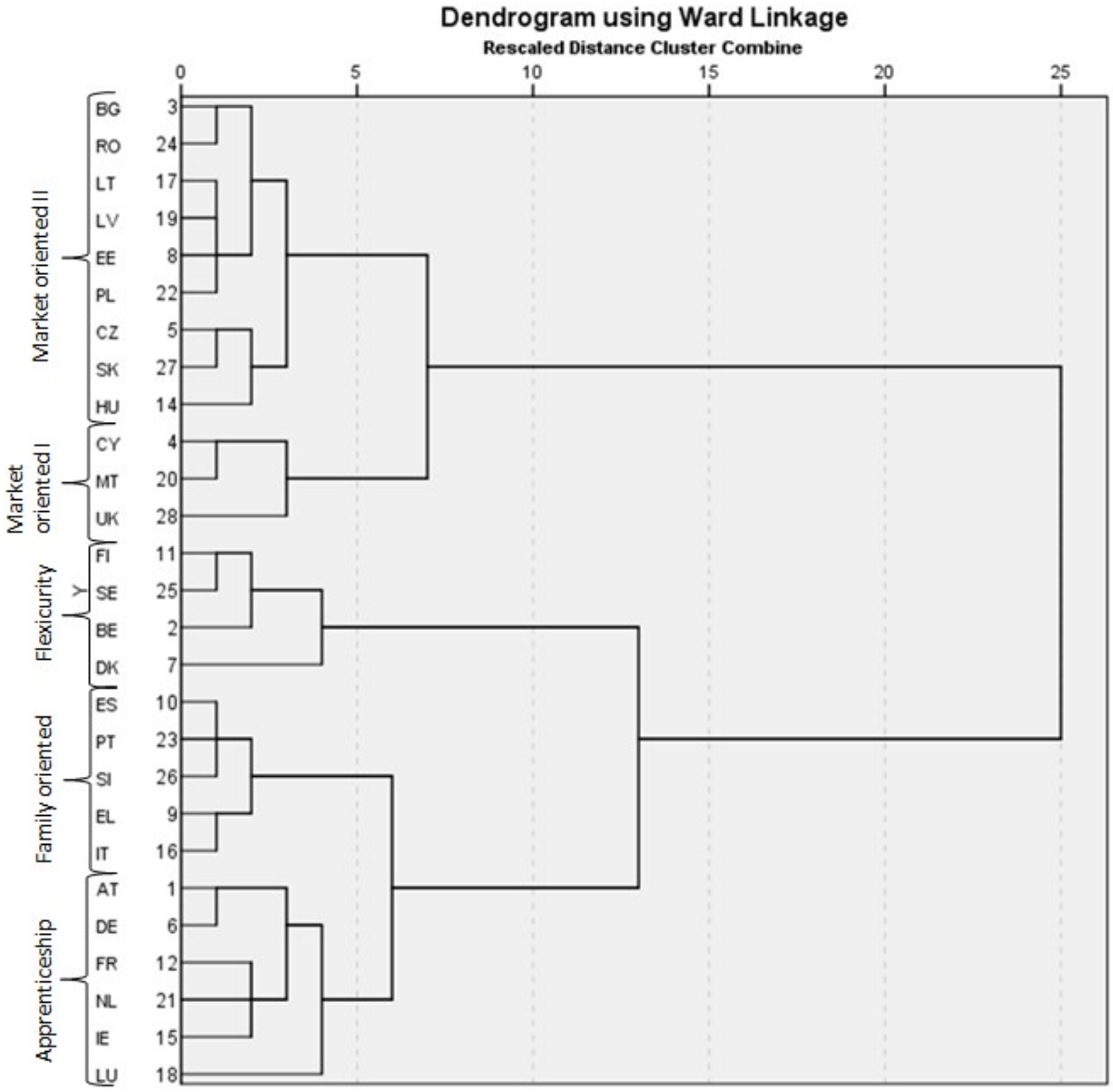
5. Results

5.1. Characteristics of Welfare and Labour market regimes in the EU

As hypothesized, it was possible to identify different welfare and labour market regimes in the European Union which represent similarities and differences among five clusters. The outcome of the cluster analysis is presented in the Dendogram of figure 2.

The first cluster might be labelled as “apprenticeship” and combines six countries, namely, Luxembourg, Ireland, the Netherlands, France, Germany, and Austria. If we look to the mean values of the institutional indicators of this cluster, especially the importance of the dual apprenticeship system becomes apparent. All these countries have dual apprenticeship systems in practice whereby it is most pronounced in Germany and Austria and least developed in Ireland. It is graphically also obvious that Germany and Austria have the most similarities. This cluster is further characterized by high government expenditure above the average for social protection, for sickness/healthcare and for family or children. A high expenditure for active and passive Labour Market Policy is remarkable in this cluster which indicates that Labour market policy is well developed and widely used. Concerning labour relations, an interesting picture emerges. On the one hand, this cluster has a union density below average. On the other hand, the degree of coordination of wage-setting is above average, which shows that the strength of the union is more institutionalized in this cluster. Although the dual apprenticeship system is one main characteristic of this cluster, the cluster should not only be reduced on the apprenticeship system because the success of this system depends on the general institutional setting and on the quality of cooperation between these institutions (see on this Biavaschi 2012; Busemeyer 2013; Cahuc et al. 2013 and Tamesberger 2015). Similar to the conservative regime by Esping-Andersen (1990) and later by Saint-Arnaud and Bernard (2003), the countries of Austria, Germany, France and the Netherlands are grouped here in one cluster. A surprising finding was that Luxembourg and Ireland belong as well to this cluster. But if we have a closer look at the institutional framework we see similarities to the other countries in this cluster regarding public spending, labour market policies, labour relations and family variables.

Figure 2: Hierarchical cluster analysis



Source: Author's calculations.

The second cluster includes the countries Greece, Spain, Italy, Portugal and Slovenia, which will be referred to as the "family supported" regime. Here we see a less active role of the welfare state compared to apprenticeship cluster. The labour market policy seems to have a main focus on passive labour market policy with relative high net replacement rates. The investment in active labour policies remains, though well below those of cluster one. The labour relations are similar to cluster one. Striking in this cluster is the highest percentage of young adults living at the place of their parents (around 60 percent of adults aged 18-34). This circumstance can be interpreted as a result of

the bad labour market situation; thus young people have to stay at home and require support of the family. Also the relatively high enrolment rate can be interpreted in this context. Because of the hopeless situation in the labour market, young people stay longer in the education system and try to improve their job perspectives with further education. The family supported cluster is overlapping with the latin regime by Saint-Arnaud and Bernard (2003) or with the low flexibility cluster by Eichhorst, Feil and Marx (2010). The circumstance that also Slovenia has similarities to this welfare and labour market regime is a new finding.

In cluster three the countries Finland, Sweden, Belgium and Denmark are included. This cluster distinguishes itself from the other clusters in that it exhibits the highest expenditure for social protection, labour market policy, family and children, and education. This illustrates the well-developed and far reaching welfare state activities in these countries. Further remarkable is that this cluster has the highest proportion of young children less than three years of age in formal childcare, and the most students (ISCED 1_6) aged 15-24 years. At the same time this cluster has the lowest share of young adults living with their parents, which indicates the high advanced intergenerational-autonomy. Further, it seems that these countries follow a flexicurity approach, meaning they provide intensive active labour market policies and high net replacement rates in the case of unemployment but with low government intervention concerning minimum wages. Therefore, this cluster might be labelled as "flexicurity"[9]. To group the Scandinavian countries into one cluster is consistent to the comparative literature on welfare state but the similarities with Belgium seem to represent more current developments of the welfare and labour market regimes in Europe.

Cluster four shows very different characteristics in comparison to the already presented clusters. Cluster four can be labelled as "marked-oriented I" because of low state interventions. The countries Cyprus, Malta and the United Kingdom can be assigned to this cluster. One main characteristic of cluster four (market-oriented I) is the very low public support in the case of unemployment. This cluster has, with the mean value of 39.8, the lowest net replacement rate, meaning that an unemployed individual receives only around 40 percent of his or her previous income. The union density rate is relatively high in this cluster; the strength of the union is not represented in the degree of coordination of wage setting. The government and judges or expert committees play a more central role in the setting of minimum wages.

[9] Concerning flexicurity, the arrangement of Employment Protection Legislation (EPL) is also relevant. Data for EPL is only provided for the OECD countries (OECD 2013) and hence it was not possible to integrate this indicator in the cluster analysis. But if look at EPL data for this cluster alone, we see at least in Finland, Denmark and Sweden a relatively low Employment Protection Legislation, which refers to flexicurity approach as well.

The last identified cluster includes the countries from Eastern Europe and the Baltic states, namely, Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania and Slovakia. The institutional arrangements of this cluster point out low state interventions or, in other words, a strong market orientation (market-oriented II). The market orientation as an unifying characteristic of the east European countries was also proved by Eichhorst, Feil and Marx (2010). We see relatively low total government expenditure, low expenditure for social protection, for health, for family and labour market policy. Even compared to cluster four the government expenditure for health and for education is here lower. Also trade union representation is relatively low. In contrast, the high value in the indicator for the setting of minimum wages shows that the government sets a national minimum wage after (non-binding) tripartite. It becomes obvious that there is an inverse relation between the strength of the trade union and the government intervention for setting minimum wages. The less influence the trade unions have the more the state is required to set minimum wages. In this market-oriented cluster, the dependence of young adults from their families is similar to cluster two. Around 58 percent of young adults aged 18-34 are living at the place of their parents. Additionally, noticeable is the relatively high enrolment rate for young people in the education system.

Table 2: Characteristics of five welfare and labour market regimes

Cluster/mean values	*1 (AT, DE, FR, IE, LU, NL)*	*2 (EL, ES, IT, PT, SI)*	*3 (BE, DK, FI, SE)*	*4 (CY, MT, UK)*	*5 (BG, CZ, EE, HU, LT, LV,PL, RO, SK)*	*Total*
			Welfare indicators			
GOV_exp	47,65	48,74	53,10	43,20	40,96	45,94
SOC_exp	28,57	26,22	30,48	22,37	17,75	24,12
HEALTH_exp	8,66	7,10	7,42	6,27	4,71	6,60
			Unemployment indicators			
ALMPexp	0,10	0,04	0,13	0,02	0,02	0,06
Replac_rate	65,36	68,46	73,32	39,81	64,06	63,84
PLMPexp	0,26	0,12	0,29	0,12	0,06	0,16
			Labour relation indicators			
ud	23,74	24,00	64,52	43,14	16,20	29,47
coord	3,20	3,24	4,10	1,67	1,66	2,66
mws	5,37	4,80	1,50	6,67	5,77	4,97
			Family indicators			
adults_home	41,75	60,22	25,81	52,67	57,81	49,38
childcare_total	30,31	28,61	48,00	23,48	9,13	24,80
fam_exp	2,81	1,55	3,17	1,67	1,71	2,13
			Education indicators			
edu_exp	5,18	4,81	7,04	6,57	4,66	5,37
apprent_rate	21,13	0,46	15,38	5,73	9,77	10,95
enrolment_rate	59,22	61,75	68,08	46,56	62,45	60,67

Source: Eurostat (2015), Eurodice (2015), OECD (2009-2014), Visser (2013), Author's calculations.

5.2. Influencing youth unemployment

As hypothesized, the regression results (table 3) show that cross-country- differences in the long-term unemployment of young people are influenced by welfare and labour market regimes. In the random intercept model, the flexicurity cluster has a significant, negative influence on the long-term unemployment of young people compared to the apprenticeship cluster. This means that the countries Finland, Sweden, Belgium and Denmark provide an institutional setting that is more able to

protect young people from long-term unemployment compared to the apprenticeship cluster. This result stresses - at least partly - the neoclassic view (see chapter 2) that welfare payments, unemployment insurance, and trade unions cause long-term unemployment. This cluster is namely characterized (chapter 5.1.) by very high government expenditure, very high investments in education and active labour market policy, the highest net replacement rates in the case of unemployment in the EU, and strong trade unions. But it is also characterized by low government intervention concerning minimum wages which corresponds to the neoclassic view. On the contrary, the market-orientated II and family supported clusters have a significant influence but with a positive sign. This means that in comparison to the apprenticeship cluster, the market-oriented II and family supported clusters are less able to avoid long-term unemployment. The market-oriented I cluster has no significant influence, meaning that it has – despite a very different institutional arrangement – a similar influence on long-term unemployment as the apprenticeship cluster. These results remain stable also after controlling for GDP growth (see model 2). It is a surprising finding that GDP growth has a positive influence on a low level of significance on the long-term unemployment of young people in this model. One possible explanation is that those who have been unemployed long-term do not benefit from economic growth because of hysteresis effects (see on this e.g. Ball 2009). Through the increase and extension of long-term unemployment during an economic recession, more people lose qualifications and motivation, and their curriculum vitae are also stigmatized by long-term unemployment. Then, in a period of economic growth, companies primarily hire young people without a history of unemployment or with only short periods of unemployment.

Concerning the unemployment ratio of young people, we see quite a different picture, which confirms the hypothesis that the influence of the welfare and labour market regimes is different for the youth unemployment ratio and the permanence of unemployment. The regression results in table 4 show a significant, positive influence for the flexicurity and family supported regimes in comparison to the apprenticeship cluster. This result means that the apprenticeship cluster, with well-established dual apprenticeship systems, high expenditure for social protection and labour market policy, and with institutionalized forms of social partnership, is more able to protect young people from unemployment than these two clusters. The last characteristic of the apprenticeship cluster – the institutionalized social partnership – seems to be an institutional framework capable of balancing class power in the sense of Esping-Andersen (1990, see chapter 3), and therefore, produces good labour market outcomes. As already mentioned, the institutional setting of this cluster is primarily able to avoid or to reduce the presence of unemployment among young people during economic turmoil but for avoiding long-term unemployment the flexicurity approach seems to

be superior (see table 3). The market oriented regimes have no significant influence, meaning that they are not better or worse than the apprenticeship countries. Against the background of the significant, negative influence of GDP growth on the youth unemployment ratio (table 3), the explanation related to hysteresis effects seems to be even more plausible. A good economic development – measured by GDP growth – reduces the presence of unemployment among young people but if a recession persists for too long and a lot of young people slip into long-term unemployment, then it will not be possible by GDP growth alone to reintegrate young people who have been unemployed long-term.

Table 3: Mixed-effects REML regression of the long-term unemployment of young people by welfare and labour market regimes (cluster 1 apprenticeship as baseline)

Independent variables	*1 = Random intercept model*	*2 = Random intercept model with GDP growth*
	Fixed effects	
Constant	-1.081629***	-1.087437***
Flexicurity	-.9878745***	-.990521***
Market oriented I	.0817189	.0851945
Market oriented II	.5939971**	.5650106**
Family supported	.5756175*	.5812533*
GDP growth		.0137019*
Time (year-dummies for 2006-2012; 2013 omitted because of collinearity)	YES	YES
	Random effects	
Country	.2768927	.2763266
Residuals	.0700321	.0691052
Level 1 Intraclass correlation (ICC) rho1	0.79813	0.79995
Wald chi2	109.23	110.60
Prob > chi2	0.0000	0.0000
AIC	163.8968	170.3226
BIC	205.4052	214.946
Number of observations	180	179

*=p<0.10; **=p<0.05; ***=p<0.01.

Source: Author's calculations.

Table 4: Mixed-effects REML regression of youth unemployment ratio by welfare and labour market regimes (Cluster 1 Apprenticeship as baseline)

Independent variables	*1 = Random intercept model*	*2 = Random intercept model with GDP growth*
	Fixed effects	
Constant	-2.565841***	-2.587247***
Flexicurity	.4015414**	.4015093**
Market oriented I	.3152313	.3100837
Market oriented II	.1413499	.1990889
Family supported	.4712075**	.4277872**
GDP growth		-.0270249***
Time (year-dummies for 2006-2012; 2013 omitted because of collinearity)	YES	YES
	Random effects	
Country	.0876612	.0888058
Residuals	.0462502	.0405794
Level 1 Intraclass correlation (ICC) rho1	0.65462	0.68637
Wald chi2	161.88	198.25
Prob > chi2	0.0000	0.0000
AIC	78.14305	67.36219
BIC	120.2858	112.6724
Number of observations	189	188

*=p<0.10; **=p<0.05; ***=p<0.01.

Source: Author's calculations.

6. Concluding remarks

The article was motivated by the research question of how cross-country differences in youth unemployment and in particular in long term unemployment can be explained. The main aim was to analyse whether or not welfare and labour market regimes contributed to cross-country differences in youth unemployment during the crisis that took place in the period 2007-2013. First, a hierarchical cluster analysis on the basis of 15 youth relevant institutional factors was applied. It was possible to identify five different clusters which represent similarities and differences among institutional frameworks in the European Union, namely, the apprenticeship cluster (AT, DE, FR, IE, LU, NL), the flexicurity cluster (BE, DK, FI, SE), the market-oriented I cluster (CY, MT, UK), the market-oriented II cluster (BG, CZ, EE, HU, LT, LV, PL, RO, SK) and the family supported cluster (EL, ES, IT, PT, SI) (see chapter 5.1.).

In a second step, the influence of the identified welfare and labour market regimes on youth unemployment was analysed. The results (chapter 5.2.) show, on the one hand, that the institutional framework of the apprenticeship regime is more able to prevent young people from unemployment during economic and financial crisis than the family supported and flexicurity clusters. On the other hand, the flexicurity regime performs better in avoiding the long-term unemployment of young people. These results provide implications both for the understanding of welfare and labour market institutions and for the contemporary debate on European youth unemployment. Beginning with the former, it was illustrated that the institutions of welfare and labour market regimes do matter concerning labour market outcomes, and contribute to explaining cross-country differences in youth unemployment. But it has also been shown that there are different institutional frameworks in the member states of the European Union which provide positive conditions for young people. Against this background, the neoclassic view seems to be too narrow for understanding the mechanisms of welfare and labour market institutions. It cannot be generalized that certain labour market institutions, like the net replacement rate in the case of unemployment or strong trade unions, will harm young people on the labour market. The findings in this article are contrary to this view and emphasize that it is worth analysing the influence of institutional frameworks on unemployment rather than focusing only on a single institution. The focus on a single institution can also be misleading because the effectiveness of institutions is often closely interlinked and interdependent, as e.g. Tamesberger (2015) indicated concerning the dual apprenticeship system and active labour

market policy. It would have been beyond the scope of this article to compare the explanation power of analysis regarding single institutions with the explanation power of analysis regarding institutional regimes concerning unemployment. Certainly, such topics would be interesting for further investigation.

For the political aim of reducing youth unemployment, the article provides two implications. First, to avoid youth unemployment – both the presence of unemployment and long-term unemployment – a combination of the apprenticeship regime and the flexicurity regime would be effective. That would mean an institutional setting which consists of both a strong dual apprenticeship system embedded in a corporatist labour market regime (see e.g. Sturn 2013) as well as a very well developed welfare state which provides high social security, uses active labour market policy excessively and has high government spending for education and childcare. Second, this article shows that to reduce unemployment, sufficient financial resources are necessary, as the "successful" countries exemplify. Therefore, the current European objective to reduce deficits according to the "Fiscal Compact" constrains the fight against youth unemployment because the necessary budgetary room will not exist for the concerned EU-member states.

7. References

Atkinson, John (1985): Flexibility, Uncertainty and Manpower Management: *IMS Report* 89, Brighton, Institute of Manpower Studies.

Arulampalam, Wiji; Gregg, Paul; Gregory, Mary (2001): Unemployment Scarring. *The Economic Journal* 111 (475), 577–584.

Baccaro, Lucio; Rei, Diego (2007): Institutional Determinants of Unemployment in OECD Countries: Does the Deregulatory View Hold Water? *International Organization* 61 (3), 527–569.

Bacher, Johann; Pöge, Andreas and Wenzig Knut (2010): Clusteranalyse. Anwendungsorientierte Einführung in Klassifikationsverfahren. 3. Aufl. München: Oldenbourg.

Bambra, Clare (2006): Research Note: Decommodification and the worlds of welfare revisited. *Journal of European Social Policy* 16 (1), 73–80.

Bassanini, A.; Duval, R. (2009): Unemployment, institutions, and reform complementarities: re-assessing the aggregate evidence for OECD countries. *Oxford Review of Economic Policy* 25 (1), 40–59.

Beelmann, Gert; Kieselbach, Thomas; Traiser, Ute (2001): Jugendarbeitslosigkeit und soziale Ausgrenzung: Ergebnisse einer qualitativen Analyse in Ost- und Westdeutschland. In: Jeannette Zempel, Johann Bacher und Klaus Moser (ed.): Erwerbslosigkeit. Ursachen, Auswirkungen und Interventionen. Opladen: Leske+Budrich, 133–148.

Bell, David N. F.; Blanchflower, David G. (2011): Young people and the Great Recession. *Oxford Review of Economic Policy* 27 (2), 241–267.

Bernal-Verdugo, Lorenzo E.; Furceri, Davide; Guillaume, Dominique (2012): Crises, Labor Market Policy, and Unemployment. *IMF Working paper* 12/65.

Bertola, Giuseppe; Blau, Francine D.; Kahn, Lawrence M. (2007): Labor market institutions and demographic employment patterns. *Journal of Population Economics* 20 (4), 833–867.

Blanchard, Olivier (2006): European unemployment: the evolution of facts and ideas. *Economic Policy* 21 (45), 5–59.

Blanchard, Olivier; Wolfers, Justin (2000): The Role of Shocks and Institutions in the Rise of European Unemployment: the Aggregate Evidence. *The Economic Journal* 110 (462), 1–33.

Blossfeld, H.-P. (2006): Globalisierung, wachsende Unsicherheit und die Veränderung der Chancen der jungen Generation in modernen Gesellschaften. Ausgewählte Ergebnisse des GLOBALIFE-Projekts. *Arbeit* 15 (1), 151–166.

Biavaschi, Costanza; et al. (2012): Youth unemployment and vocational training. *Discussion Paper* 6890. Bonn: IZA.

Boeri, Tito (2011): Reducing Youth Unemployment and Dualism. Thematic Review Seminar on "The reduction of labour market segmentation: addressing the needs of young people". http://www.mutual-learning-employment.net/uploads/ModuleXtender/Trscontent/52/Tito_Boeri_Discussion_paper.pdf (accessed on 31.08.2012).

Bonoli, Giuliano (1997): Classifying Welfare States: a Two-dimension Approach. *Journal of Social Policy* 26 (3), 351–372.

Breen, Richard (2005): Explaining Cross-national Variation in Youth Unemployment. Market and Institutional Factors. *European Sociological Review* 21 (2), 125–134.

Busemeyer, Marius R. (2013): Die politische Ökonomie kollektiver Ausbildungssysteme im internationalen Vergleich. In: Michaela Stock, Agnes Dietzen, Lorenz Lassnigg, Jörg Markowitsch und Daniela Moser (ed.): *Neue Lernwelten als Chance für alle.* Beitrag zur Berufsbildungsforschung. Innsbruck: Studienverlag, 23–37.

Cahuc, Pierre; Carcillo, Stéphane; Rinne, Ulf; Zimmermann, Klaus F. (2013): Youth unemployment in old Europe: the polar cases of France and Germany. *IZA Journal of European Labor Studies* 2 (18), 1–23.

Card, David; Kluve, Jochen; Weber, Andrea (2009): Active Labor Market Policy Evaluations: A Meta-analysis. *Working Paper* 0902. The Austrian Center for Labor Economics and the Analysis of the Welfare State.

Choudhry, Misbah Tanveer; Marelli, Enrico; Signorelli, Marcello (2012): Youth unemployment rate and impact of financial crises. *International Journal of Manpower* 33 (1), 76–95.

Cinalli, Manlio; Giugni, Marco (2013): New challenges for the welfare state: The emergence of youth unemployment regimes in Europe? *International Journal of Social Welfare* 22 (3), 290–299.

Cinalli, Manlio; Giugni, Marco; Graziano, Paolo Roberto (2013): The policies of unemployment protection in Europe. In: *International Journal of Social Welfare* 22 (3), 287–289.

Danforth, Benjamin (2014): Worlds of welfare in time: A historical reassessment of the three-world typology. *Journal of European Social Policy* 24 (2), 164–182.

Diamond, Patrick; Lodge, Guy (2014): Dynamic Social Security after the crisis: Towards a new welfare state? *International Social Security Review* 67 (3-4), 37–59.

Dietrich, Hans (2013): Youth unemployment in the period 2001–2010 and the European crisis – looking at the empirical evidence. *Transfer: European Review of Labour and Research* 19 (3), 305-324.

Ebralidze, Ellen (2011): Labour Market Regulation and Perceived Job Insecurities in the Early Career - Do Danish Employees Worry Less? In: Hans-Peter Blossfeld, Dirk Hofsäcker and Sonia Bertolini (ed.): *Youth on Globalised Labour Markets. Rising Uncertainty and its Effects on Early Employment and Family Lives in Europe.* Leverkusen Obladen: Barbara Budrich, 93–120.

Eichhorst, Werner; Feil, Michael; Marx, Paul (2010): Crisis, What Crisis? Patterns of Adaptation in European Labor Markets. *IZA Discussion Paper* 2582, 5045. Bonn: IZA.

Ervasti, H.; Venetoklis, T. (2010): Unemployment and Subjective Well-being: An Empirical Test of Deprivation Theory, Incentive Paradigm and Financial Strain Approach. *Acta Sociologica* 53 (2), 119–139.

Esping-Andersen, Gøsta (1990): *The three worlds of welfare capitalism.* Cambridge: Polity Press.

Everitt, Brian S.; Landau, Sabine and Leese, Morven (2001): Cluster Analysis. 4th edition. London: Arnold Publishers.

Eurodice (2015): Eurypedia - The European Encyclopedia on National Education System. http://eacea.ec.europa.eu/education/eurydice/eurypedia_de.php (assessed on 10.04.2015).

Eurofound (2011): Young people and NEETs in Europe: First findings. http://www.eurofound.europa.eu/pubdocs/2011/72/en/1/EF1172EN.pdf (accessed on 14.02.2014).

Eurofound (2012): Neets, young people not in employment, education or training: Characteristics, costs and policy responses in Europe. Dublin: European Foundation for the Improvement of Living and Working Conditions.

Eurostat (2015): Eurostat Database. http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database (accessed on 12.04.2015).

Ervasti, Heikki; Venetoklis, Takis (2010): Unemployment and Subjective Well-being: An Empirical Test of Deprivation Theory, Incentive Paradigm and Financial Strain Approach. *Acta Sociologica* 53 (2), 119–139.

Fenger, Menno H. J. (2007): Welfare regimes in Central and Eastern Europe. Incorporting post communist countries in a welfare regime typology. *Contemporary Issues and Ideas in Social Sciences* 3 (2), 1-30.

Ferrera, Maurizio (1996): The "Sourthern" Model of Welfare in Europe'. *Journal of European Social Policy* 6 (1), 17–37.

Friedman, Milton (1968): THE ROLE OF MONETARY POLICY. *American Economic Review* 58 (1), 1-17.

Freeman, Richard B.; Wise, David A. (1982): The Youth Labor Market Problem: Its Nature, Causes, and Consequences. In: Richard B. Freeman und David A. Wise (ed.): *The Youth Labor Market Problem: Its Nature, Causes, and Consequences.* Chicago/London: University of Chicago Press, 1–16.

Gallie, Duncan; Paugam, Serge (2000): The Experience of Unemployment in Europe: The Debate. In: Duncan Gallie and Serge Paugam (ed.): *Welfare Regimes and the Experience of Unemployment in Europe.* Oxford: Oxford University Press, 1–24.

Gregg, Paul (2001): The Impact of Youth Unemployment on Adult Unemployment in the NCDS. *The Economic Journal* 111 (475), 626–653.

Gregg, Paul; Tominey, Emma (2005): The wage scar from male youth unemployment. *Labour Economics* 12 (4), 487–509.

Guerrero, Diego (2000): Neoclassical, Keynesian, and Heterodox Employment Policies. *International Journal of Political Economy* 30 (2), 35–55.

Halleröd, Björn; Westberg, Annika (2006): Youth Problem: What's the Problem?: A Longitudinal Study of Incomes and Economic Hardship Among Swedish Youth. *Acta Sociologica* 49 (1), 83–102.

Hofäcker, Dirk; Blossfeld, Hans-Peter (2011): Globalization, Uncertainty and its Effects on Early Family and Employment Lifes - An Introduction. In: Hans-Peter Blossfeld, Dirk Hofsäcker and Sonia Bertolini (Hg.): *Youth on Globalised Labour Markets. Rising Uncertainty and its Effects on Early Employment and Family Lives in Europe.* Leverkusen Obladen: Barbara Budrich, 9–38.

Howell, David R. (2005): Introduction. In: David R. Howell (Hg.): *Fighting Unemployment. The Limits of Free Market Orthodoxy.* New York: Oxford University Press, 3–34.

Hox, Joop (2010): Multilevel Analysis. Techniques and Application. New York: Routledge.

Isengard, Bettina (2003): Youth unemployment: Individual risk and institutional determinants; a case study of Germany and the United Kingdom. *Journal of Youth Studies* 6 (4), 358–376.

Kieselbach, Thomas (2003): Long-Term Unemployment Among Young People: The Risk of Social Exclusion. *American Journal of Community Psychology* 32 (1/2), 69–76.

Lange, Marloes de; Gesthuizen, Maurice; Wolbers, Maarten H. J. (2014): Youth Labour Market Integration Across Europe. *European Societies* 16 (2), 194–212.

Leibfried, Stephan (1992): Towards a European Welfare State? On Integrating Poverty Regimes into the European Community. In: Zsuzsa Ferge und Jon-Eivind Kolberg (ed.): Social Policy in a Changing Europe. Frankfurt am Main: Campus Verlag, 245–280.

Mills, Melinda; Blossfeld, Hans-Peter (2003): Globalization, uncertainty and changes in early life courses. *ZfE* 6 (2), 188-218.

Mroz, Thomas A.; Savage, Timothy H. (2006): The Long-Term Effects of Youth Unemployment. *Journal of Human Resources* 41 (2), 259–293.

Müller, Walter (2005): Education and Youth Integration into European Labour Markets. *International Journal of Comparative Sociology* 46 (5-6), 461–485.

Neumark, David; Wascher, William (2004): Minimum wages, Labor Market Institutions, and Youth unemployment: A Cross-national analyses. *Industrial and Labor Relations Review* 57 (2), 223–248.

Nickell, Stephen (1997): Unemployment and Labor Market Rigidities: Europe versus North America. *Journal of Economic Perspectives* 11 (3), 55–74.

Noelke, Clemens (2011): The Consequences of Employment Protection Legislation for the Youth Labour Market. *MZES working paper* 144. Mannheim. Mannheimer Zentrum für Europäische Sozialforschung.

OECD (2009-2014): *Education at a glance*: OECD indicators. Paris, Organisation for Economic Co-operation and Development.

OECD (2013): *Strictness of employment protection – Individual and collective dismissals in* OECD.StatExtracts.

OECD (2015): *Benefits and Wages: Statistics.* http://www.oecd.org/els/benefitsandwagesstatistics.htm (assessed on 10.04.2015).

O'Higgins, Niall (2010): *The impact of the economic and financial crisis on youth employment:* Measures for labour market recovery in the European Union, Canada and the United States. Genua: ILO.

O'Higgins, Niall (2012): This Time It‘s Different? Youth Labour Markets During ‘The Great Recession’. *IZA-Discussion paper* (6434).

O'Higgins, Niall (2015): *Institutions and youth labour markets in Europe during the crisis.* Paper presented at the 26th Annual EAEPE Conference in Nicosia.

Rovny, Allison E. (2011): Welfare state policy determinants of fertility level: A comparative analysis. *Journal of European Social Policy* 21 (4), 335–347.

Russell, Helen; O'Connell, Philip J. (2001): Getting a Job in Europe: The Transition from Unemployment to Work among Young People in Nine European Countries. *Work, Employment & Society* 15 (1), 1–24.

Saint-Arnaud, Sébastien; Bernhard, Paul (2003): Convergence or Resilience? A Hierarchical Cluster Analysis of the Welfare Regimes in Advanced Countries. *Current Sociology* 51 (5), 499–527.

Scarpetta, Stefano; Sonnet, Anne; Manfredi, Thomas (2010): Rising Youth Unemployment During The Crisis: How to Prevent Negative Long-term Consequences on a Generation? *OECD Social, Employment and Migration Working Papers*, 106.

Scruggs, Lyle; Allan, James (2006): Welfare-state decommodification in 18 OECD countries: a replication and revision. *Journal of European Social Policy* 16 (1), 55–72.

Shavit, Yossi; Müller, Walter (2000): VOCATIONAL SECONDARY EDUCATION. Where diversion and where safety net? *European Societies* 2 (1), 29–50.

Siebert, Horst (1997): Labor Market Rigidities: At the Root of Unemployment in Europe. *Journal of Economic Perspectives* 11 (3), 37–54.

Stockhammer, Engelbert (2004): Explaining European Unemployment: Testing the NAIRU Hypothesis and a Keynesian Approach. *International Review of Applied Economics* 18 (1), 3–23.

Stockhammer, Engelbert; Klär, Erik (2011): Capital accumulation, labour market institutions and unemployment in the medium run. *Cambridge Journal of Economics* 35 (2), 437–457.

Sturn, Simon (2013): Are corporatist labour markets different? Labour market regimes and unemployment in OECD countries. *International Labour Review* 152 (2), 237–254.

Summers, Lawrence H.; Kim, Clark B. (1979): Labor Market Dynamics and Unemployment: A Reconsideration. *Brookings Papers on Economic Activity* (1), 13–60.

Tamesberger, D. (2015): A multifactorial explanation of youth unemployment and the special case of Austria. *International Social Security Review* 68 (1), 23–45.

Visser, J. (2013): ICTWSS database on institutional characteristics of trade unions, wage setting, state intervention and social pacts between 1960 and 2011 (Version 4). Amsterdam, University of Amsterdam – Amsterdam Institute for Advanced Labour Studies

West, B.T.; Welch, K.B. and Galecki, A.T. (2015): Linear Mixed Models: A Practical Guide Using Statistical Software (Second Edition). http://www-personal.umich.edu/~bwest/almmussp.html

Wetzelhütter, Daniela (2013): *Youth Unemployment in Finland. Youth Unemployment and Workshops as a Labour Market Programme for Integration.* Saarbrücken: Akademiker Verlag.

Wolbers, Maarten H. J. (2007): Patterns of Labour Market Entry: A Comparative Perspective on School-to-Work Transition in 11 European Countries. *Acta Sociologica* 50, 189–208.