

## **Different structures, different results? Continental and Nordic education structures compared.**

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**Abstract:** In policy debates the Continental structures include strong VET and apprenticeship-like “collective skills formation systems”, with good labour market transition, and with low youth unemployment as main indicators that signify success. In contrast, the Nordic countries support equity and equality of opportunity as an important asset, with a weak influence of social background on the results of education.

This paper, as a small N study in comparative research looks in detail for both groups of countries at the main indicators representing the main assets of the different structures, youth unemployment, and social background influence on PISA results. The results show more country group differences concerning equity and more overlap in unemployment; however, the main message points to much variation within the country groups at all indicators, including certain “outstanding” countries, e.g., Finland with equity and Germany with low youth unemployment, and less typical differences between the groups of countries than would be expected by common political beliefs.

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## 1. INTRODUCTION

This paper takes up main political expectations about differences in purpose and results between Continental education structures and Nordic education structures, and explores to which extent these political expectations are met in practice. For this purpose, the main indicators used in the political discourse about the specific advantages of the contrasting structures are analysed in a symmetrical way to both groups of countries.

This analysis is inspired by the observation that the policy discourse is mostly influenced by looking at “evidence” from the “other systems” or groups of countries, or on the large N comparative indicators (e.g., given by the OECD or EUROSTAT data bases). The “own” system is taken as a blind spot. In the Continental countries we often find aggressive disputes between advocates of the own system, and advocates of the comprehensive Nordic system, which cannot be easily resolved by the conventional indicators systems. In the German and Swiss discourse, the support of VET is flanked by a devaluation of higher education, using concepts of delusion or traps of academisation (*Akademisierungswahn*; *Akademisierungsfälle*; Nida-Rümelin, 2014; Strahm, 2014). The Nordic countries have provided deeper analyses of the transition process (e.g., Albæk et al., 2015), the Nord VET project has more recently built on high expectations in the strength of collective skills formation (Jørgensen, 2018). More symmetrical analyses of quantitative indicators that directly compare more deeply the “own” with the

“other” structures are missing or rare to the knowledge of the author, tendencies in research are rather to dig deeper into the “own” structures (e.g., by the Nord VET project: <http://nordvet.dk/>, or by the Swiss Govpet project <https://gce.unisg.ch/en/govpet/research-program>).

The main research question of this paper is, to which extent the politically expected huge structural differences between the Continental and the Nordic countries are corroborated, when the main “success” indicators of either structure are applied to both groups of countries. A small N analysis using robust indicators over a couple of years is applied for this purpose. Thus, the strength of the approach is to compare rather persistent structures than actual development: on the unemployment side ten-years country averages 2006-16, and on the social reproduction side average PISA results from the cycle 2009-15, and from all available waves 2003-15. A more detailed documentation of data is provided at <http://www.equi.at/material/annex-nord.pdf>.

## **2. THEORY AND METHODS**

### **2.1 THEORY**

The theoretical background of this analysis is based on institutionalist ideas of complex interplays between structures and agency leading to the incrementalistic (historical) emergence of idiosyncratic structures, and using rather a concept of structures than one of dense “systems”. The research about collective skills formation has pointed to the marked differences between the typical Continental dual apprenticeship systems (Busemeyer & Trampusch, 2011), and the contingencies included in their dynamic (Emmenegger et al., 2019). The research in the Nordic

region also has often even questioned whether a distinct Nordic “system” would exist (see Vol.50 of the *Scandinavian Journal of Educational Research*, e.g., Frímannsson, 2006), or persist (Imsen et al., 2017). The more current reasoning about typologies, that tries to deal with the complexities of education structures (Pilz, 2016) is also considered.

This approach does of course not deny systemic interrelations between the different parts and sectors within national education structures. For the concrete research question of comparing aggregate results of the Nordic to Continental structures the observation stands out that the classic strong Continental dual apprenticeship systems in Germany, Austria and Switzerland are in fact combined with strongly tracked compulsory education structures, in contrast to comprehensive Nordic compulsory education, on that different VET structures are built. From these structural interrelations the question of causality arises, of whether a systemic tension between strong secondary vocational education (VET) including dual apprenticeship and comprehensive compulsory education might exist.

The purpose of this paper is to step back from this deeper questions, and to look more systematically at the criss-crossing outcomes of the two groups of countries: to which extent do Continental and Nordic countries succeed in reaching the aggregate goals of the other group? In terms of policy these research questions are related to the potential of the different structures to fulfil both goal dimensions, good transition to employment, and equitable results of education. A main political rhetoric proposes a criss-crossing transfer of the main elements of the contrasting structures, i.e. the comprehensive structure to the Continental countries, and dual apprenticeship to the Nordic

countries. The latter has already been undertaken in Denmark and Norway, in somewhat different versions than in the classic Continental apprenticeship countries.

These considerations can also support a more detailed look at the indicators by the individual countries, as compared to the group differences. Thus, the empirical question is, to which extent we find overlaps between countries of the different regions on the one hand, and outliers within the regions on the other.

## 2.2 METHODS

This chapter compares a set of Continental countries to the Nordic countries using conventional comparative indicators in an interpretive way to question how strongly the structural contrast proves at a closer look. The purpose with the empirical work is at the same time twofold, first to interpret the empirical findings, and second also to better understand the indicators from international and European data bases that are widely used by research. The indicators are graphically presented in a systematic way, to analyse the patterns of difference between the groups of selected countries, and the included individual countries also. This comparison is of course superficial; however, the strengths of this perspective lies first with the high attention to the used indicators in policy discourses, and second in the direct confrontation of the two main dimensions of political goals that are mostly analysed separately.

As a method a small N comparative study using the main indicators representing the two contrasting educational purposes is applied. The strength of the Continental systems is conventionally represented by low youth unemployment, and the

strength of the Nordic systems is represented by a low influence of social background of pupils on their educational achievement. Ten countries were selected for comparison, five Continental countries including the classical dual apprenticeship countries (Austria, Germany and Switzerland plus the Netherlands and Belgium), four Nordic countries (Denmark, Finland, Sweden and Norway); the UK was selected as a contrasting case of liberal capitalism. For comparison the averages for the Continental and Nordic countries have been complemented by a mixed group of Apprenticeship countries including Denmark in addition to the classical continental countries (Norway has also developed a kind of apprenticeship system, however, has been established rather recent and differs with its 2 plus 2 structure from the others). The main data are provided in Annex-tables 1-6.

To get a robust measure of youth unemployment, the average of the ten-years period 2006-16 has been calculated, using the EUROSTAT database. Three age groups are observed, the teens (15-19y) and twens (20-24y), and the overall age group of young people (15-24y). The analysis uses not only the conventional unemployment *rate* as the proportion of average numbers of unemployed young people to the *labour force* (as the persons seeking employment and ready to take up employment). This indicator is often confused in the political discourse with the second indicator applied, the unemployment *ratio*, as the percentage of unemployed people to the total *population* of young people. Since the OECD youth transition project (Bowers et al., 2000, Ryan, 1999) the *ratio*-indicator – that is intuitively more understandable – has been detected as better comparable internationally and eventually more valid than the rate, because of different proportions of school participation vs. the size of

the labour force in different countries. More recently the “Neither in Employment nor in Education and Training (NEETs)” rate is used as an additional indicator; however, this indicator is available for a shorter period only (Quintini et al., 2007, EUROSTAT, 2020). To get a valid comparative picture of youth unemployment two aspects must be considered, first the international positioning of countries, and second the relationship between youth and total unemployment. The latter aspect provides a main argument for the international support of the German dual apprenticeship model (OECD, 2012).

As robust measures of the influence of social background on pupils’ achievement average measures across the three domains (literacy, math, and science) in the available PISA waves 2003-2015 are utilised. Two indicators are specifically looked at, first the explaining power of the socio-economic status (SES) background indicator (see Avvisati, 2020, Rutkowski & Rutkowski 2013) for achievement for the period 2009-15, and second the inequality in achievement between pupils with low parents’ educational background (compulsory education or less, ISCED 2) and pupils with high parents’ educational background (higher education, ISCED 5/6) over all available waves and domains 2003-15. The relationship between pupils’ social background and their achievement is conventionally used as measure of equity in the OECD-PISA reporting (see exemplary OECD 2019a, p.59-60)

As a third step, the two dimensions of success are related to each other, to show how the country groups and individual countries are located at both dimensions simultaneously.

### 3. ANALYSIS

The analysis follows three steps, first the indicators of youth unemployment are presented, second the social background indicators, based on PISA, and third these dimensions are confronted to each other. To make the utilised statistics more tangible, the main empirical relationships are illustrated by figures.

#### 3.1 YOUTH UNEMPLOYMENT

The pattern of the two versions of youth unemployment is shown in figure 1 by age groups. As widely known, the Continental and Apprenticeship country groups show lower unemployment at both indicators, than the Nordic group; however, the Nordic countries show much more variation, with high youth unemployment in Sweden and Finland, similar to the UK and EU28, and lower youth unemployment similar to the Continental group in Denmark and Norway. The correlation between the unemployment rate and ratio is high in the 20-24-years age group, indicating similar proportions of the labour force in the selected countries. Belgium is an outlier in this pattern with a higher youth unemployment rate than continental countries, and a markedly higher unemployment ratio in the older age group, compared to the younger. Cockx (2013) has pointed to the tracked education structure and a strict barrier between school and work as main factors increasing youth unemployment.

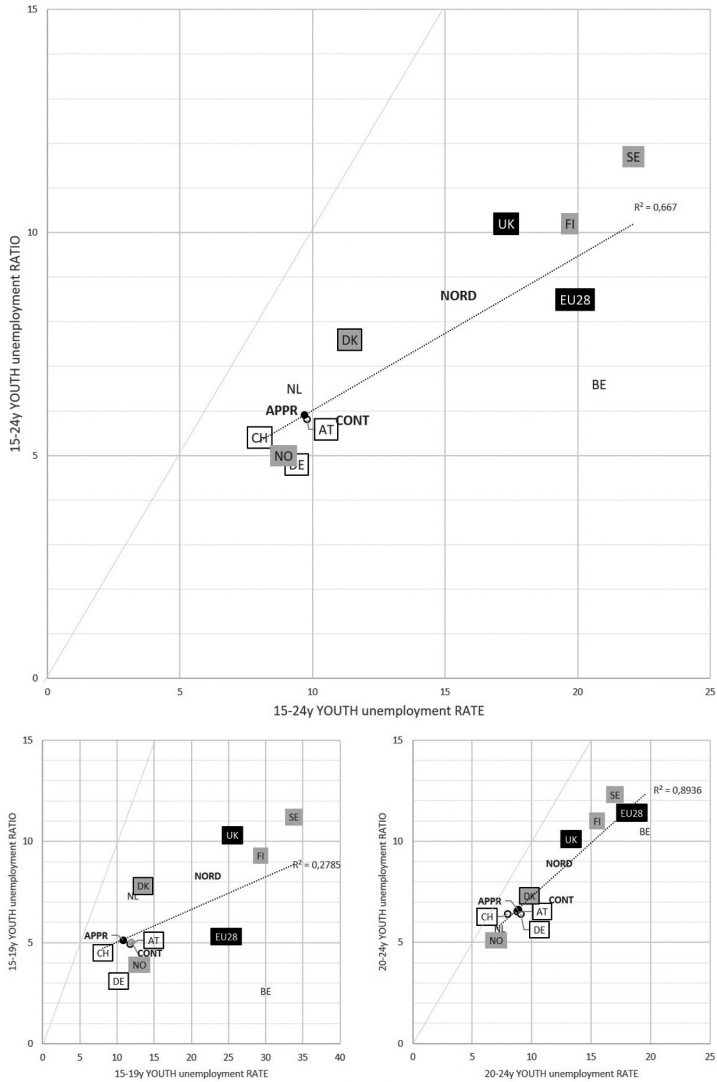
The comparison between the two youth unemployment indicators illustrates that the proportion of unemployed youth to the population is much lower than the unemployment rate (which



is mainly an economic indicator), this difference is much bigger among the teens age group (EU28 ca. 25% to 5%), than among twens (EU28 ca. 20% to 10%). The correlation of unemployment by countries between the age groups (no figure shown) is high with the rate indicator ( $R^2=0,84$ ), and lower with the ratio indicator ( $R^2=0,25$ ). In Sweden, Belgium, Finland, and UK the unemployment rate of teens is very high (around 30%); however, among twens the rate is about half of that (around 15%). On the contrary the second indicator of the youth unemployment ratio is much higher in the older group in EU28 (ca. 12% vs. 6% among teens), whereas in the selected country groups this indicator is rather similar in both age groups.

During the observed period a tendency is visible that the rate indicator shows a decline in the older age group when unemployment is high among teens (e.g., Sweden, Finland, UK), whereas the ratio indicator rather increases in the older age group when it is low among teens (e.g., Germany, or the Continental and Apprenticeship country groups). The Nordic average is higher at all measures compared to the Continental and the Apprenticeship countries, and it is also higher than EU28 with the ratio among teens (8% vs. 5%).

Figure 1. Youth unemployment rate and ratio by age groups



Legend: Position of labels represents data point, except in cases of overlaps, NORD = Nordic country group average, CONT = Continental, APPR = Apprenticeship. Source: Annex-table 1.

Comparing the ratio to the rate, it must be clear that the difference refers to the same numbers of unemployed, but to a different size of the labour force related to the population, the more the rate exceeds the ratio, the smaller is – relatively speaking – the labour force (and vice versa). At first sight, and in conventional interpretation, participation in education is a distinct state from employment and unemployment, thus increasing participation in education would reduce the size of the labour force, and relatively increase the unemployment rate compared to the ratio. However, as far as apprentices count as employed, and therefore as part of the labour force, school education would increase and apprenticeship education would reduce the unemployment rate relative to the ratio.

The empirical picture only partly fits to these expectations. First, among the overall youth age group 15-to-25-years the relationship between the rate and the ratio is quite similar in all regions in the twens group (between 1.3 and 1.4 index points, with only Belgium being an outlier), however in the teens group it varies strongly. Second, the difference between the two measures is much higher in the teens group (EU28: 4.6 index points), in which the index is lowest in the apprenticeship countries group (2.2), and higher in the Nordic region (2.7), with Denmark (1.7) showing a lower difference than the other Nordic countries (between 2.4-and-3.1 index points difference). Third, the Continental and Apprenticeship countries do not fit empirically to the expectations of a striking lowering of the rate in relation to the ratio because of an employment status of apprentices; a reason might be that the apprentices are differently distributed to the age groups in different countries (mainly among teens in Austria, about half and half to teens

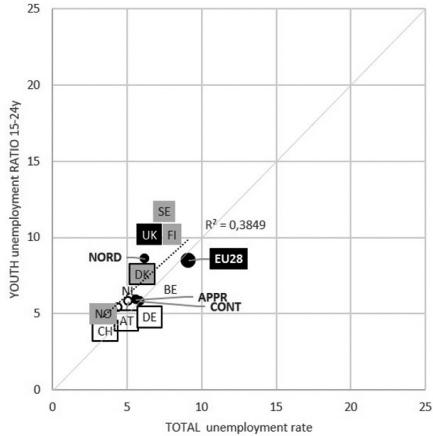
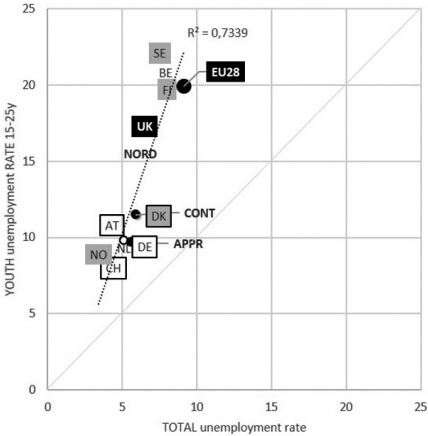
and twens in Germany, and in Switzerland in between more to the Austrian pattern).

The next step concerns the relationship between youth unemployment and total unemployment (figure 2). A strong relationship between these dimensions indicates the influence of the general economic conditions on youth unemployment rather than major impacts from different VET structures. Indeed, the correlation between total unemployment and the youth unemployment rate is high, with a steep trendline. In the EU28 and the UK as well as in Sweden and Finland the youth unemployment rate shows a high increase compared to general unemployment. In Denmark and Norway, as well as in the Continental group (except Belgium), the low youth unemployment rate corresponds to low total unemployment. The unemployment ratio shows a similar pattern with a much lower correlation (figure 2a).

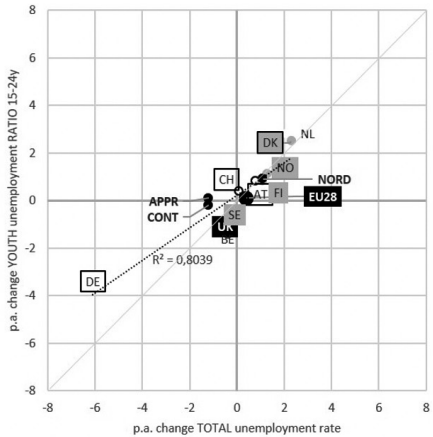
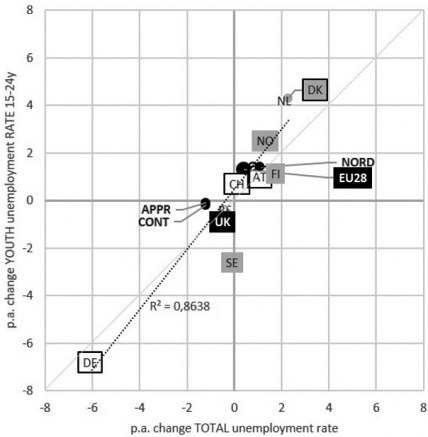
The annual change of unemployment (figure 2b) shows an even stronger correlation between total unemployment and both youth unemployment measures. Here, Germany is a clear outlier with a marked decline of total and youth unemployment; this constellation creates difficulties to attribute youth unemployment to the dual apprenticeship system, and generalisation is also difficult from this case. At the other extreme unemployment has increased most in Denmark and the Netherlands during the observed period. The pattern of annual change is to some extent inverted compared to the level of unemployment. Unemployment has declined in some countries with the highest rates (Sweden, Belgium, UK).

Figure 2. Youth unemployment rate and ratio, and total unemployment

2a) percentage



2b) annual change



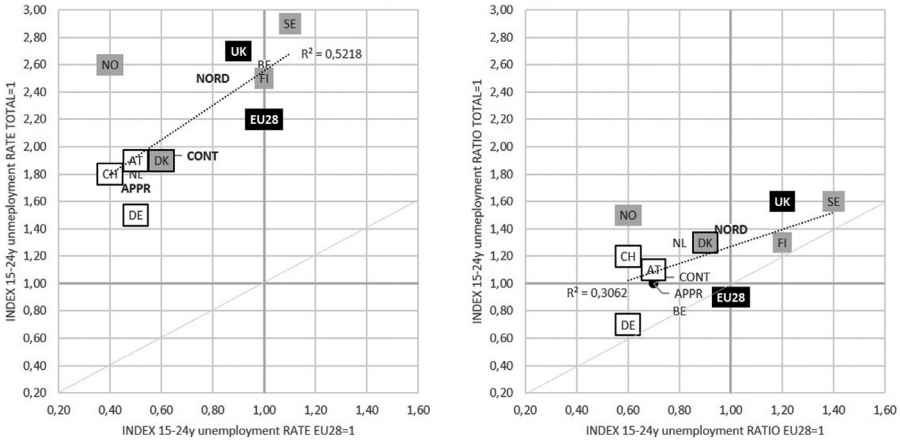
Legend: Position of labels represents data point, except in cases of overlaps, NORD = Nordic country group average, CONT = Continental, APPR = Apprenticeship. Source: Annex-table 1 and 2.

In figure 3 two more abstract indices of youth unemployment are related to each other, the *relative position of countries in EU28* and the level of *youth unemployment to total unemployment* within selected countries and country groups. Both relations might be seen as indications of successful structures and/or policies. This figure represents in this sense a summary picture of appraisal of the unemployment dimension.

Among selected countries only the youth unemployment rate of Sweden is above EU28, Belgium, Finland and the UK are near this level, the Nordic average is slightly below these countries because of the lower rates in Denmark and Norway. The latter are situated within the range of the Continental and Apprenticeship country groups (at a level of 0,4-to-0,6 of the EU28 index). If the ratio is considered the better measure, the ordering of the countries is similar; however, the differences between the countries are smaller.

The other dimension, youth unemployment in relation to total unemployment also shows a more blurred picture with the ratio indicator than with the rate. The relative level of youth unemployment is lowest in Germany (the youth unemployment ratio lies even below the total unemployment rate at an index value of 0,7, the rate at 1,5), the Nordic average amounts to 1,4 compared to 1,0 of Continental or Apprenticeship countries with the ratio, and to 2,5 compared to ca. 1,8 with the rate. Norway is an outlier, with a comparatively low youth unemployment level compared to EU28, but a comparatively high level in relation to total unemployment.

Figure 3. Youth unemployment rate and ratio in selected countries related to EU28 and to total unemployment.



Legend: Position of labels represents data point, except in cases of overlaps, NORD = Nordic country group average, CONT = Continental, APPR = Apprenticeship. Source: Annex-tables 3 and 4.

### 3.2 SOCIAL BACKGROUND EFFECTS ON ACHIEVEMENT

The longer-term observation of PISA *achievement scores* shows an overlap of the countries' and country groups' averages. Finland is a slight outlier at the upper edge, the other Nordic countries are situated at the lower edge, the Continental and Apprenticeship countries range in between. The two indicators representing the social background effects on achievement show different relationships to the levels of achievement. The proportion of *achievement explained by the SES* is unrelated to the level of achievement, whereas the *inequality of achievement due to parents' education* is negatively related to the level of achievement: the larger the inequality of PISA-scores between parents'

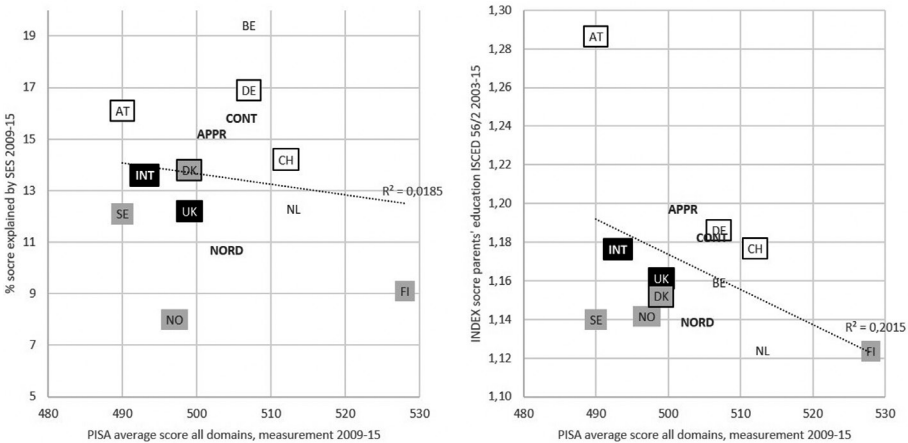
higher education (ISCED 5/6) and compulsory education or less (ISCED 2), the lower the aggregate PISA score in a country. Finland is an outlier at the one extreme, with the highest average achievement and (in common with the Netherlands) the lowest inequality of parents' education impact, and Austria at the other extreme, with lowest achievement and by far the highest inequality (figure 4).

Parents' educational background is related to big differences of their children's achievement (figure 5). The range of the scale for children with low educated parents ends at 500 score points, where it begins for children of highly educated parents. The average difference by country groups is a bit higher than the equivalent of one proficiency level in Continental and Apprenticeship countries (ca. 85-to-90 points), and a bit less in Nordic countries (ca. 65 points; see OECD 2019b). The crosstabulation of the achievement results according to parents' educational background (annex-table 6) shows rather similar results in the majority of selected countries and country group averages when parents' background is low education (the range of these main bulk of countries is ca. 20 score points between Norway and Switzerland). Only Austria on the negative end (20 points less), and Finland (30 points more), and less marked the Netherlands (20 points above the range), at the positive end are outliers in this picture; the overall range including the outliers amounts to ca. 70 points for this group of pupils. The average scores of children of highly educated parents are distributed within a range of ca. 50 points between Finland and Norway; in this group the Continental and Apprenticeship countries (except Denmark) score high slightly behind Finland, and the Nordic countries score at the medium-to-lower end. Thus, a tendency might exist



in the Nordic countries except Finland that the higher social equity of achievement is related to lower achievement scores in the better-off strata of society; Ammermüller (2004) has already shown such tendencies among complex and interesting differences in a contrasting analysis of the two extreme cases of Finland and Germany based on PISA 2000.

Figure 4. PISA achievement scores related to percentage of explanation by SES and inequality by parents' education.



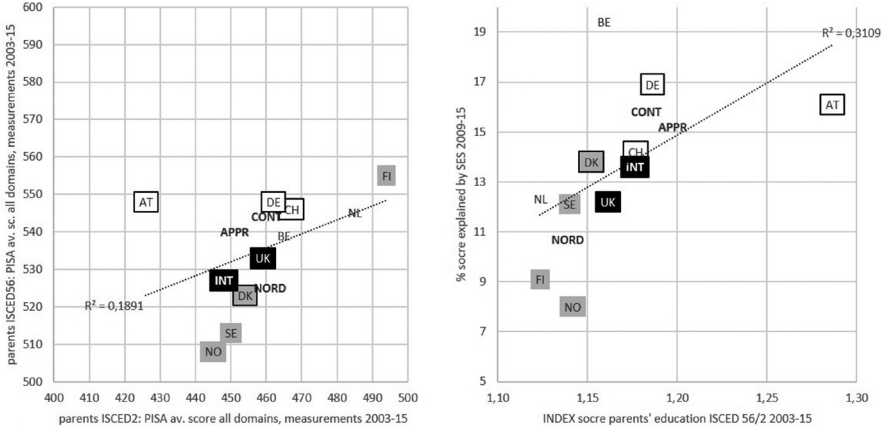
Legend: Position of labels represents data point, NORD = Nordic country group average, CONT = Continental, APPR = Apprenticeship.  
Source: Annex-tables 5 and 6.

The cross-classification of the social background indicators (figure 5) gives a picture grossly according to the political expectations. The Nordic countries as a group show comparatively small inequality based on parents' educational background, and a comparatively small proportion of achievement is explained by the SES. However, looking at the country distribution, this

performance is all but exceptional. Only two countries, Norway and Finland, show at both indicators smaller values of social background influence. Sweden and Denmark are positioned near the UK, the Netherlands, Switzerland and the international average. The Continental and Apprenticeship countries show a higher degree of social reproduction, with Austria as an outlier with particular strong social influence on achievement at both indicators, and the Netherlands at the opposite end being situated near Sweden. Belgium is (again) another outlier scoring high with the explanation of achievement by SES, and low inequality effects of parents' education. Denmark as a Nordic apprenticeship country (but not Norway) is situated nearer to the Continental and Apprenticeship countries than the other Nordic countries at both indicators.

In sum, there is less overlap among country groups with the social background indicators than with youth unemployment, but still, there is substantial overlap.

Figure 5. PISA achievement scores by parents' educational background related to percentage of explanation by SES and inequality by parents' education.



Source: Annex-tables 5 and 6.

### 3.3 CONFRONTING THE TWO DIMENSIONS OF YOUTH UNEMPLOYMENT AND SOCIAL BACKGROUND INFLUENCE

The final step of the analysis combines the two dimensions of success by selecting four indicators, and confronting them to each other. Figure 6 shows the results of this procedure.

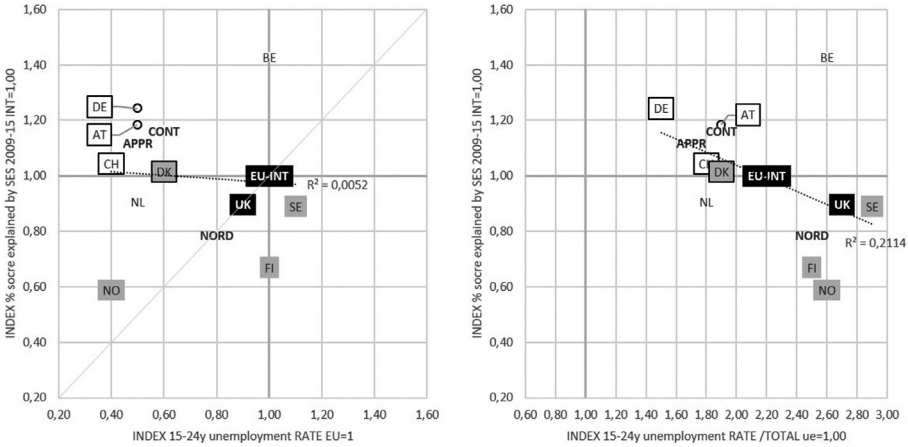
At the success dimension of *reducing unemployment* first the positioning of the selected countries and country groups in relation to the European average (index EU28=1,00), and second the relationship of youth unemployment to total unemployment (index total unemployment=1,00) were selected, and both

aspects are presented in terms of the unemployment *rate* and the unemployment *ratio* measurement versions (the youth-to-total unemployment relationship could have also been shown by the more abstract measure of the index in relation to EU28; then the distribution at this variable would be more compressed and intuitively more difficult to grasp).

At the success dimension of *reducing the impact of social background on PISA achievement*, the first indicator of the percentage of explanation of the PISA score by the socio-economic status has been recalculated in relative terms as an index (international average=1,00), and the second indicator is the relative degree of inequality of PISA achievement between children of formally high and low educated parents (index of PISA score of pupils with ISCED 5/6 parents to ISCED 2 parents).

Figure 6. Relative youth unemployment indicators and PISA social background indicators compared

a) youth unemployment rate and % PISA achievement explained by SES



b) youth unemployment ratio and % PISA achievement explained by SES

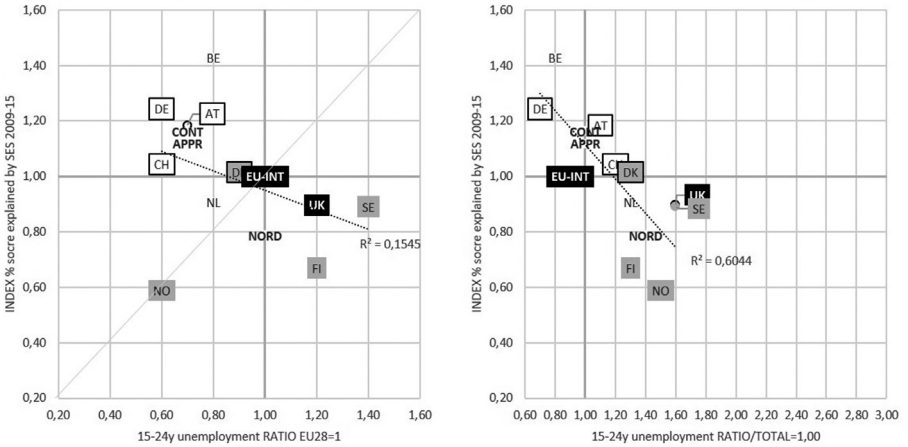
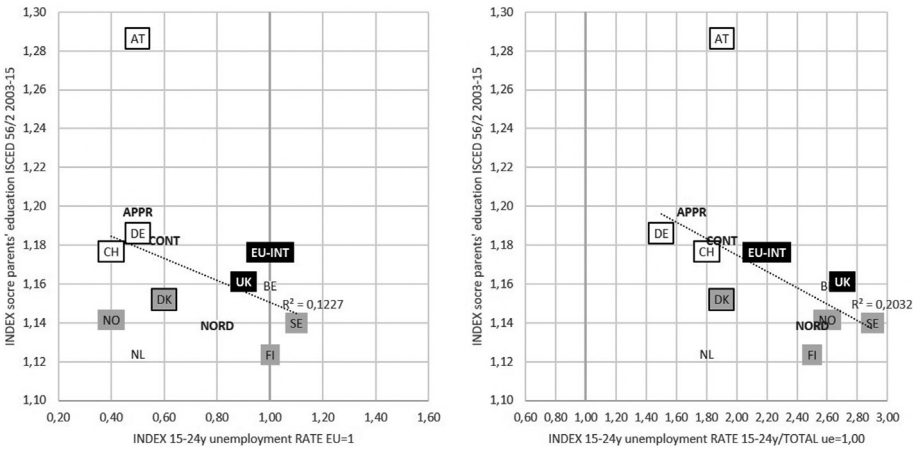
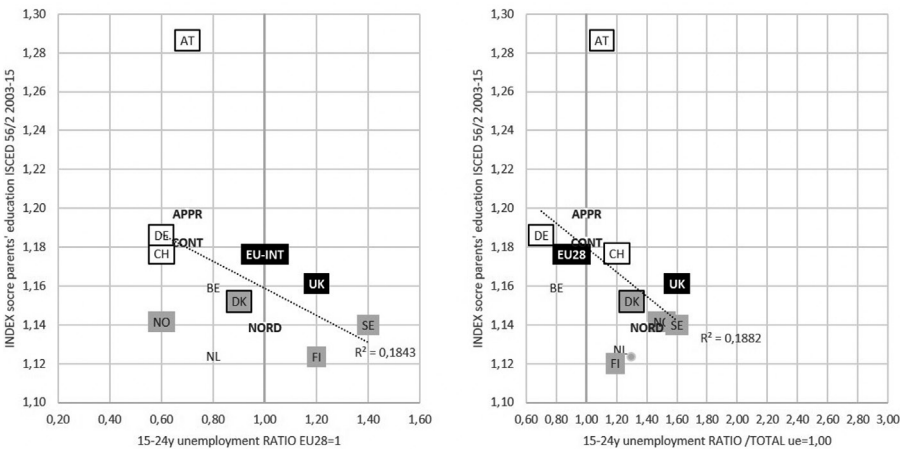


Figure 6. continued

c) youth unemployment rate and inequality of PISA achievement  
by parents' educational background



c) youth unemployment ratio and inequality of PISA achievement  
by parents' educational background



Legend: Position of labels represents data point, except in cases of overlaps, NORD = Nordic country group average, CONT = Continental, APPR = Apprenticeship. Source: Annex-table 3-to-6.

Figure 6a and b show the two versions of youth unemployment related to the degree of *explanation of PISA scores by the socio-economic status* (SES). The correlation between the two success dimensions is low in three versions ( $R^2 = 0,01$ -to- $0,21$ ), and amounts to  $R^2=0,60$  in the cross-tabulation of the SES-explanation and the young/total unemployment ratio. In all four versions the Apprenticeship and Continental group averages are showing comparatively low unemployment and a high social background effect, whereas the Nordic group average shows the opposite. Looking at the averages alone, the policy expectations would be reinforced straightforwardly by the analysis.

However, looking at the individual countries also, the Continental and Apprenticeship countries group fairly together, with the exception of Belgium that shows a higher unemployment rate rather in the range of the Nordic countries, but not at the ratio indicator (this is one reason of the high correlation). The Nordic countries group together at the social background dimension, but not on the unemployment dimension. Two Nordic countries stand out: Denmark as an apprenticeship country groups commonly together with the Continental countries at both dimensions, lower unemployment and higher impact of social background. Norway, in contrast shows the best success on both dimensions if youth unemployment is compared to the European average, but youth unemployment is not low in this country compared to total unemployment.

The comparison of the youth unemployment rate and ratio shows generally a much less favourable pattern with the ratio than the rate. Compared to the *European average of youth unemployment* the Apprenticeship and Continental countries – with the exception of Belgium – have a much lower relative rate than

ratio, and from only one country with a rate above the EU28 (Sweden) this number increases to three selected countries (plus Finland and UK) with the ratio. In the comparison of *youth and total unemployment* the youth rate is between 1.5 (Germany) and almost 3 times (Sweden) higher than the total rate (ca. 2 times on the EU28 average), whereas the youth ratio varies between 0,6 (Germany) and only 1,6 (Sweden and UK). With the youth unemployment ratio compared to total national unemployment Germany shows a much more successful performance than the other Apprenticeship countries, and at this level of comparison the Nordic group moves together, so the groups segregate structurally also at the unemployment dimension. But at the same time the distance between groups becomes smaller, as Denmark moves into the Nordic group near Finland and Norway, but Switzerland and Austria also move near to Denmark. The big polemical contrast often made in the Austrian political discourse towards Finland, that the good PISA performance was contrasted by bad youth unemployment is not corroborated if the youth unemployment ratio is observed. Overall, the question of which measure is more valid, makes a difference in the assessment of success measures, as only Germany remains as an outstanding case of reducing youth unemployment if the ratio is used as the main valid measure.

In these comparisons Belgium is a complete exception as the only country with a substantially different position when using the ratio measure instead of the rate. As the number of unemployed is the same in both measures, the different position can only come from a relatively small measure of the labour force – this might have institutional reasons.

In figure 6c and d the other PISA success indicator of *inequality of competence level based on parents' educational background*



is displayed. Here the correlations are low ( $R^2$  between 0,12 and 0,20), partly due to Austria as an outlier on the inequality measure.

The pattern with the unemployment measures is the same as above. The PISA inequality measure that is more direct than the SES explanation, shows a clearer separation of the Apprenticeship countries from the Nordic countries. Denmark is positioned nearest to the Apprenticeship countries, but with some distance, and the UK lying in between the groups. The Netherlands are in some sense the consistently best performing country in this classification.

#### 4. DISCUSSION

The analysis has taken a closer look at youth unemployment in relation to educational structures. In most political discourses the unemployment *rate* is interpreted as the proportion of unemployed young people in the youth population. However, this is misleading, because the rate measures the proportion in relation to the *youth labour force*, which is only that part of the youth population, that formally seeks employment. Because of the spread of universal education, and because of institutional and behavioural reasons, a substantial part of the young population might not (formally) seek employment. Therefore, a second indicator has been established called unemployment *ratio* that indeed measures the proportion of young unemployed to the young population (this ratio is a part of the NEETs rate that also includes the inactive and excludes young people in education). The difference of the ratio to the rate is substantial, in EU28 the average rate is at 20%, the ratio at 9% in the observed

period. The two measures are both based on the same number of unemployed people, only the denominator differs by the difference between the population (ratio) and the labour force (rate).

In the political discourses, apprenticeship is presented as an instrument for fighting youth unemployment. Indeed, at first sight, a clear correlation between youth unemployment and provision of VET through apprenticeship seems to appear as the classical apprenticeship countries display lowest unemployment in European indicators. A closer look already shows a much more differentiated picture that is also emphasized by research. Asking how low youth unemployment can be caused through apprenticeship institutions compared to schools, two different mechanisms can be at work:

- one simply through the *existence of an (temporarily) established contact* (through formal employment or other institutional forms) of young people with enterprises that must be deliberately separated after completion (at schools such an institutionalized contact does not exist, and must only be established afterwards; this simple contact can be assumed to automatically reduce the probability of unemployment for apprentices as ‘insiders’ in the enterprises compared to ‘outsiders’ from school);
- the other mechanism works through the much more complex channels related to aspects of *the quality of training or education* (be it selecting the right people or learning the right things).

This distinction is important, as the two mechanisms are mostly confused in the discourse, and advocates of apprentice-

ship mostly point to the second one only and neglect the first one. However, if we assume two young people of identical quality, one through school and one through apprenticeship, the apprentice will have a higher probability of employment simply because of the previous contact with the firm. The magnitude of the (relative) difference in unemployment between youth and adults might give an indication for the quality mechanism: *relative lower youth unemployment compared to adults* might indicate incidence of the quality mechanism, similar unemployment levels would indicate that the youth labour market simply reflects the mainly economic factors that cause unemployment in general (however, this comparison is difficult because of the generally higher levels of youth than adult unemployment).

In the observed period the relationship of the general employment conditions to youth unemployment is difficult to assess, as the average level of unemployment is similar among the country groups during the observed decade, however, the change of unemployment has pointed to different directions: it decreased on average in the Continental and the Apprenticeship countries, whereas it increased in the Nordic region (with substantial individual country differences within regions; Germany and Sweden decrease, Netherlands and Denmark increase; in EU28 total unemployment slightly increased). Youth unemployment reflects the overall pattern in the twens' group, however, increases in the teens group in all regions at all measures; in the Nordic region the increase in this group is above the overall increase of unemployment. These different constellations of overall increase or decrease of unemployment, in relation to changes in youth unemployment pose questions about underlying mechanisms on the labour market and the corresponding

power of (educational) institutions and interventions for buffering against the labour market changes. Countervailing forces can be expected here:

- first, if the youth labour market is the most sensitive sector, increases and decreases of overall unemployment imply lags and multipliers;
- second, school education can work as anticyclical mechanism of increasing and decreasing participation;
- third, apprenticeship-based enterprise education implies rather a pro-cyclical pattern, implying different tendencies for school and apprenticeship;
- fourth, a closer relationship between apprenticeship and labour market policy interventions because of an implied employment relationship and corresponding political attention might again alleviate the pro-cyclical tendency;
- fifth, school participation might be differently linked to labour market policy interventions, potentially reinforcing the anticyclical mechanism (and possibly influencing the labour force by separating education and employment).

The weights of each of these forces might be difficult to obtain, more in-depth studies of the Austrian policies have shown that the low youth unemployment in this country must be rather attributed to labour market policy interventions than to the existence of apprenticeship (Lassnigg, 2016).

The empirical comparisons show that youth unemployment in the teens group is exceptionally high in the Nordic countries, indicating that youth unemployment appears as a specific issue compared to total unemployment in the Nordic region.

Another result is a systematic difference between the ratio measures and the rate measures, as unemployment is only positively influenced in the apprenticeship countries group if the unemployment rate is considered being the valid measure; the ratio indicates a more favourable picture than in the Nordic region, however, does not indicate a better relative situation in youth unemployment compared to total unemployment.

Comparing the two age groups of teens and twens, they are differently related to the educational structures and to transition into employment. We know that the transition process is under a long-term tendency to becoming more diverse and extended in time, meaning that the age pattern becomes more diversified. For the teens more or less a standard of universal education has emerged, that is recently transformed into the forms of youth guarantee. This group is related to upper secondary education, and thus to the school structure. The twens group is related to what is traditionally known as higher education, and more recently re-conceptualised as more differentiated tertiary education; in Denmark, Finland, and Norway higher education overlaps with VET, as the average age of completion of VET is even beyond the twens' group at 27-28 years (see Lassnigg and Vogtenhuber, 2017 for a deeper analysis of these structural patterns). Expectations about participation in education vs. employment in this group differ, and are also severely disputed in research and politics, at least in the Continental countries as indicated above by the rhetoric of academic delusion and academisation traps.

An aspect that deserves further discussion are overlaps between education, employment and unemployment. Apprenticeship means an institutional structure that combines employ-

ment and education or training in sophisticated and often complex ways. The purpose of the institution is to give some predictability and security for both components – employment and education – for the involved parties. However, the concepts about the minimal requirements and the shape of these institutions vary widely, from providing simply some (more or less loose) contact for learners with enterprises to the strong institutional frameworks established in the paradigmatic apprenticeship countries (see Lassnigg, 2015).

However, there has always been *another form of combination of education and employment* through any kinds of (informal) students work beside education, which is mostly neglected in the discourse about education and employment, and which has very often characteristics that are currently classified as precarious work. This work can be practiced in formal employment relations or not, and seeking for this kind of work can be registered at employment services or not. If more flexible and permeable education careers are considered, then a distinction between a full employment relation and a more transient student's work can be unclear. Albæk et al. (2015) have already shown the high amount of delayed studies for a post-compulsory qualification in the Nordic countries in the twens group and beyond. Thus, education can overlap with employment and with unemployment, and this overlap is invisible in indicators that document only one unilateral status.

Since some years the OECD Education at a Glance statistical compendium includes tables that document the overlaps of the different statuses (OECD 2020, Table A2.1., 64). This table gives the information needed for the NEETs classification, but does also expand the information about overlaps between edu-

cation and employment, and gives an additional picture about unemployment based on the ratio measure. On the employment side this table indicates different structures of the classical apprenticeship countries, and adds information about overlaps that are not classified as formal apprenticeship in the OECD data basis, which are particularly high in the Netherlands and in Denmark (showing similar or higher proportions compared to the most marked apprenticeship countries of Switzerland and Germany). On the unemployment side the information is even more instructive. It shows that the major part of unemployment in the Nordic countries is overlapping with education. This overlap is stronger in the teen's age group, and does almost not occur in the Continental region except the Netherlands, and neither in the classical apprenticeship countries. The remaining part of unemployment (including the out-of-labour-force status) is similar in the three types of regions. Belgium, that stood out with the relationship between the unemployment rate and ratio also stands out in this table as the only case without overlaps at both sides, and the highest unemployment among the twens.

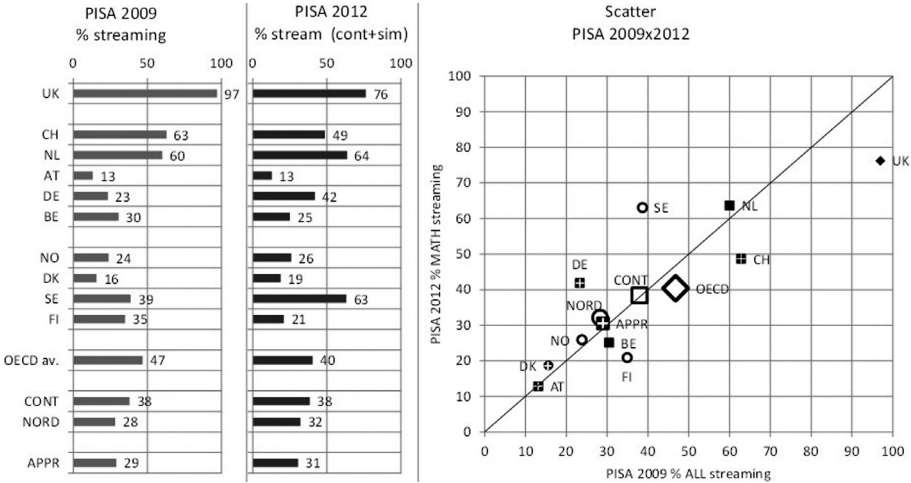
The second goal dimension analysed of the social background effects on achievement related to the structures of educational tracking is causing fierce political fights since decades. More recently some converging discourses have arisen, potentially levelling the abstract opposition between comprehensive and tracked structures. In the Nordic structures societal changes and neoliberal policies might undermine the impact of comprehensive education more than expected (Blossing et al., 2014), and the basically divisive tracked structures in VET countries might provide mechanisms and practices for alleviating inequality (Brunello and Checchi, 2007). In addition, contradictory rela-

tionships between structures and practices might arise, as e.g., Schrodt (2014, pp.94-104) shows that Austrian teachers give their marks partly on social purposes rather than achievement resulting in substantial differences between marks and competence testing in this country. Still the political discourses around social justice, equality, or equity in the continental countries are very much influenced by the polarity between a tracked and comprehensive structure in terms of different institutions. However, they do often abstract from the more tricky questions of tracking by ability within comprehensive structures.

The PISA assessment has provided comparative empirical information on these various kinds of groupings prevalent at the grade of 15-years old pupils in the participating countries. This information shows that the simple polarity between openly tracked and organizationally comprehensive structures is misleading, and that comprehensive structures de facto include various versions of grouping to quite substantial degrees (figure 7 gives a stylised account of the amount of tracking indicated by streaming between classes within school, and these issues were more intensely analysed in Lassnigg & Vogtenhuber, 2014).



Figure 7. Streaming at age 15 indicated by PISA survey of principals (2009 and 2012)



Legend: 2009 % pupils in streaming by all subjects; 2012 % pupils in MATH ability grouping between classes with different content plus classes with similar content (cont+sim) Source: own compilation and figure based on OECD-PISA 2009 and 2012.

A big surprise to the conservative position in the early waves of PISA was the coincidence that Finland with its high competence score also showed a high degree of equality in its results; this was perceived as proof that the two dimensions must be reconcilable. The positioning of the Continental countries in these assessments also contradicts the expectations of the supporters of tracking as well as those of opponents: in view of the supporters the score should be higher because tracking should drive up results, and in view of opponents, the increase inequality by tracking should be even higher.

The analysis of the social background indicators has shown a clearer distinction between the Nordic and the Apprentice-

ship countries than with the unemployment indicators. However, a look on the variation by individual countries and by the domains/years shows quite much differences and overlaps. Within the Nordic region Finland has higher scores than the others, and inequality is lower in Norway and Finland than in Sweden and Denmark; the latter overlap with the Netherlands and Switzerland from the Continental group. The scores in Continental countries except Austria are higher than in the majority of Nordic countries, and inequality is higher in Austria, Germany, and Belgium than in any Nordic country.

The comparison of the pupils groups by parents' low and high education shows an interesting pattern, as in Continental countries both pupils' groups score above the international averages to a similar degree (with only Austria as an exception of this pattern with highest inequality and pupils from ISCED 2 parents scoring 5 per cent below the international average), whereas in Nordic countries (again except Finland) the pupils from higher education parents' background score below the international average of this group, whereas the pupils from compulsory education background score at the average of this group. Thus, the higher equality might result from relatively lower scores of pupils from more advanced educational background of parents and the pupils from less advanced background also score on average less than this group in Continental countries. Finland also shows such a difference, however, both groups score above average; this pattern also occurs in the Netherlands. On the other end of the spectrum Austria shows the by far worst pattern with highest inequality and the relatively lowest performance of pupils from parents' compulsory education background.

In sum these simple but robust explorations show some advantage in Nordic countries in terms of equality, however, there is

also much overlap with Continental countries, and efficiency seems not to go so much hand in hand with equality as hoped for. The Apprenticeship countries show a similar picture with the continental ones, with some sign of slightly more inequality. The complex mechanisms in place need to be corroborated by more elaborate modelling and case studies.

## **5. CONCLUSIONS AND SUGGESTIONS FOR FURTHER RESEARCH**

The analysis brought some key results about widely shared political beliefs that the different educational structures in the Nordic and the Apprenticeship countries would serve different goals, the former to provide equity, and the latter to provide good transitions from school to work.

One result is that only looking at the averages of the country groups would straightforwardly reinforce the political beliefs, however, considering the specific positioning of the individual countries shows much overlap and blurring across the different structures. Countries that are widely seen as typical successes for their structure come rather out as outliers in their groups, namely Finland with the high degree of equity and high achievement on one side, and Germany with its success at the youth labour market on the other.

Another result is that the overlap between structures is more pronounced at the dimension of reducing unemployment than at reducing social inequality. The Nordic countries show different success with respect to the unemployment indicators, with Denmark and partly Norway being more similar to the Continental and Apprenticeship countries. Denmark as an appren-

ticeship country lies in the range of the Continental countries with lower unemployment, but interestingly shows also consistently more social reproduction than the other Nordic countries, but less than the Continental and other Apprenticeship countries also.

Still another result is that the success of the Apprenticeship countries looks much better with the conventionally used – and often misinterpreted – unemployment rate than with the unemployment ratio (that resembles more to the more current NEETs rate but leaves out the inactive people). This result guides further questions about the use of those indicators in research and policy making. Does it make sense to ask which one is more valid, and should therefore be mainly used in political discourses? The unemployment rate is clearly part of economic reasoning and economic policy. How does this fit into broader research and political understandings?

Some concrete further questions concern what the changes in transition and educational participation imply for the shapes and expectations about unemployment, employment and labour force participation in the two age groups. How should the difference between the rate and the ratio be interpreted, in particular the high unemployment rates among the teens group? Which measure is more valid, 25% or 5% at the European level, respective 22% or 8% in the Nordic region, resp. 10% vs. 5% in Apprenticeship countries? What does it mean that the ratio increases with age, and the rate goes down? What does it mean that the two measures are mostly confused at the political level? To which extent is employment or education a remedy for youth unemployment, and how far can the two be combined in formal or informal ways? Should a difference be made between the two age groups in terms of remedies?

The information included in the OECD-EAG table about the overlaps of education, employment, and unemployment suggests taking a closer look in particular at the overlap of education and unemployment in the Nordic countries. In what kind of education do these young people participate, is this participation sustainable or only some short or occasional courses? And what kinds of employment do the young people seek, is it students' work or a full employment perspective? Depending on the answer, the substantially better position of apprenticeship countries could become seriously questioned. Maybe there is not so much to learn from continental countries in terms of reducing unemployment and improving transition as expected. The informal overlaps of education with employment or unemployment also might indicate tensions between the increasing tendency of educational participation and increasing qualification demands on the one hand, and an increasing demand and interest for productive work among young people on the other.

With respect to VET research and policy making further questions concern the degree of systemic coherence within the different structures. How much does the survival of strong dual apprenticeship structures depend on the tracked structures of compulsory education, on which they still build? Or, vice versa, does a comprehensive structure of compulsory education support equity but undermine an apprenticeship type structure at the post-compulsory level? And bringing these questions together, how are the prospects of a blurring of those different structures which has been to some degree proposed and charged politically already through decades, but has not succeeded so far?

The explorative analysis of the data can only give some hints about the comparative questions followed, and clearly needs to be extended by additional qualitative research.

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## ANNEX-TABLES

Annex-table 1: Youth and total unemployment rate and ratio, by age groups 2006-16

	Youth ue RATE			Youth ue RATIO			TOTAL unemployment
	15-24	15-19	20-24	15-24	15-19	20-24	15-74
UK United Kingdom	17,3	25,5	13,3	10,2	10,3	10,1	6,5
AT Austria	9,8	11,8	8,8	5,8	4,9	6,5	5,1
CH Switzerland	8,0	8,1	8,0	5,4	4,5	6,4	4,4
DE Germany	9,4	10,2	9,1	4,8	3,1	6,4	6,5
BE Belgium	20,8	30,0	19,5	6,6	2,6	10,5	7,9
NL Netherlands	9,3	12,1	7,3	6,5	7,3	5,7	5,1
DK Denmark	11,4	13,5	9,8	7,6	7,8	7,3	6,0
FI Finland	19,7	29,3	15,5	10,2	9,3	11,0	8,0
SE Sweden	22,1	33,8	17,0	11,7	11,2	12,3	7,5
NO Norway	8,9	12,0	7,0	5,0	5,0	5,1	3,4
EU28	19,9	24,7	18,4	8,5	5,3	11,4	9,1



CONTINENTAL	11,5	14,4	10,5	5,8	4,5	7,1	5,9
NORDIC	15,5	22,2	12,3	8,6	8,3	8,9	6,2
APPRENTICE-SHIP	9,7	10,9	8,9	5,9	5,1	6,6	5,6
STATISTICS							
Std dev CONT	4,712	7,922	4,515	0,672	1,674	1,737	1,242
Std dev NORD	5,513	9,535	4,084	2,551	2,263	2,872	1,798
Std dev APPR	1,212	2,020	0,639	1,038	1,724	0,388	0,791
Variation co-efficient CONT	0,410	0,548	0,429	0,115	0,374	0,245	0,210
Variation co-efficient NORD	0,355	0,430	0,331	0,296	0,271	0,323	0,289
Variation co-efficient APPR	0,125	0,185	0,072	0,176	0,340	0,059	0,140
APPRENTICE-SHIP group summary							
Std dev APPR	1,212	2,020	0,639	1,038	1,724	0,388	0,791
Variation co-efficient APPR	0,125	0,185	0,072	0,176	0,340	0,059	0,140
Average APPR	9,675	10,914	8,930	5,898	5,075	6,634	5,634

Source: Own calculations based on EUROSTAT data base

Annex-table 2: Change p.a. of youth and total unemployment rate and ratio 2006-16

	Youth ue RATE			Youth ue RATIO			TOTAL unemployment
	15-24	15-19	20-24	15-24	15-19	20-24	15-74
UK United Kingdom	-0,9	0,4	-0,6	-1,1	-1,7	-0,6	-0,5
AT Austria	1,4	1,4	1,8	0,8	0,0	1,4	0,8
CH Switzerland	0,7	1,5	0,1	0,4	1,0	-0,2	0,1
DE Germany	-6,8	-6,5	-6,8	-3,4	-2,1	-5,0	-6,1
BE Belgium	-0,4	-1,1	-0,1	-1,4	-0,7	-2,3	-0,4
NL Netherlands	4,2	5,0	3,7	2,8	3,1	2,4	2,1
DK Denmark	4,3	5,2	4,0	2,5	2,6	2,6	2,3
FI Finland	1,4	2,8	1,0	0,8	1,1	0,5	1,1
SE Sweden	-2,6	1,5	-2,6	-0,6	0,4	-1,7	-0,1
NO Norway	2,5	4,6	1,5	1,1	1,3	0,8	1,3
EU28	1,3	1,3	1,5	0,1	-0,5	0,5	0,4
CONTINENTAL	-0,2	0,1	-0,3	-0,2	0,3	-0,7	-1,2
NORDIC	1,4	3,5	1,0	0,9	1,4	0,5	1,1
APPRENTICE-SHIP	-0,1	0,4	-0,2	0,1	0,4	-0,3	-1,2
STATISTICS							
Std dev CONT	3,642	3,812	3,545	2,099	1,742	2,658	2,841
Std dev NORD	2,531	1,465	2,356	1,101	0,795	1,527	0,838
Std dev APPR	4,097	4,268	4,040	2,156	1,703	2,890	3,214

Variation co-efficient CONT		63,531	13,636		6,700	3,591	
Variation co-efficient NORD	1,808	0,416	2,417	1,159	0,589	2,777	0,732
Variation co-efficient APPR		10,670	17,956	28,742	4,543		
APPRENTICE-SHIP group summary							
Std dev APPR	4,097	4,268	4,040	2,156	1,703	2,890	3,214
Variation co-efficient APPR		10,670		28,742	4,543		-
Average APPR	-0,100	0,400	-0,225	0,075	0,375	-0,300	-1,234

Source: Own calculations based on EUROSTAT data base

Annex-table 3: Youth unemployment in relation to total unemployment, and youth unemployment rate in relation to ratio (indices, total unemployment=1,00, ratio=1,00)

	Youth ue rate/ TOTAL ue			Youth ue ratio/ TOTAL ue			Youth ue RATE/ Youth ue RATIO		
	15-24	15-19	20-24	15-24	15-19	20-24	15-24	15-19	20-24
UK United Kingdom	2,67	3,93	2,05	1,58	1,6	1,56	1,70	2,40	1,35
AT Austria	1,91	2,3	1,71	1,12	0,96	1,27	1,69	2,46	1,32
CH Switzerland	1,82	1,83	1,82	1,23	1,01	1,44	1,48	1,81	1,26
DE Germany	1,45	1,58	1,41	0,74	0,48	0,98	1,96	3,3	1,43
BE Belgium	2,64	3,8	2,47	0,84	0,32	1,33	3,15	11,75	1,85
NL Netherlands	1,83	2,37	1,43	1,27	1,44	1,11	1,44	1,64	1,29
DK Denmark	1,92	2,27	1,64	1,27	1,31	1,22	1,51	1,73	1,34
FI Finland	2,46	3,66	1,94	1,27	1,17	1,37	1,94	3,14	1,41
SE Sweden	2,94	4,5	2,26	1,56	1,49	1,63	1,88	3,02	1,38
NO Norway	2,61	3,55	2,06	1,48	1,48	1,49	1,76	2,41	1,38
EU28	2,2	2,73	2,03	0,94	0,59	1,26	2,34	4,64	1,61
CONTINENTAL	1,94	2,44	1,78	0,98	0,76	1,19	1,97	3,23	1,49
NORDIC	2,5	3,57	1,98	1,39	1,34	1,43	1,80	2,66	1,39
APPRENTICE-SHIP	1,72	1,94	1,58	1,05	0,9	1,18	1,64	2,15	1,35

Source: Own calculations based on EUROSTAT data base

Annex table 4: Youth and total unemployment in relation to EU28  
(index EU28=1,00)

	Youth ue rate			Youth ue ratio			Total unemployment
	15-24	15-19	20-24	15-24	15-19	20-24	15-74
UK United Kingdom	0,87	1,03	0,72	1,2	1,94	0,88	0,72
AT Austria	0,49	0,48	0,48	0,68	0,92	0,57	0,57
CH Switzerland	0,40	0,33	0,44	0,64	0,84	0,56	0,49
DE Germany	0,47	0,42	0,5	0,56	0,58	0,56	0,72
BE Belgium	1,05	1,22	1,06	0,78	0,48	0,92	0,87
NL Netherlands	0,47	0,49	0,4	0,76	1,38	0,49	0,56
DK Denmark	0,57	0,55	0,53	0,89	1,47	0,64	0,66
FI Finland	0,99	1,19	0,84	1,20	1,76	0,96	0,88
SE Sweden	1,11	1,37	0,92	1,38	2,1	1,07	0,83
NO Norway	0,44	0,49	0,38	0,59	0,94	0,44	0,37
EU28	1,00	1,00	1,00	1,00	1,00	1,00	1,00
CONTINENTAL	0,58	0,59	0,57	0,68	0,84	0,62	0,65
NORDIC	0,78	0,90	0,67	1,02	1,57	0,78	0,69
APPRENTICE-SHIP	0,49	0,44	0,49	0,69	0,95	0,58	0,62

Source: Own calculations based on EUROSTAT data base

Annex-table 5: PISA scores, average 2005-15 and per cent of score explained by SES, per domains and average across domains

	PISA scores 2009-15				% PISA scores explained by SES			
	READ '09	MATH '12	SCI' 15	AVERAGE	READ '09	MATH '12	SCI '15	AVERAGE
UK United Kingdom	494	494	509	499	13,7	12,5	10,5	12,2
AT Austria	470	506	495	490	16,6	15,8	15,9	16,1
CH Switzerland	501	531	506	512	14,1	12,8	15,6	14,2
DE Germany	497	514	509	507	17,9	16,9	15,8	16,9
BE Belgium	506	515	502	507	19,3	19,6	19,3	19,4
NL Netherlands	508	523	509	513	12,8	11,5	12,5	12,3
DK Denmark	495	500	502	499	14,5	16,5	10,4	13,8
FI Finland	536	519	531	528	7,8	9,4	10	9,1
SE Sweden	497	478	493	490	13,4	10,6	12,2	12,1
NO Norway	503	489	498	497	8,6	7,4	8,2	8,0
INTERNATIONAL	493	493	493	493	14,0	13,8	12,9	13,6
CONTINENTAL	496	517	504	506	16,1	15,3	15,8	15,8
NORDIC	508	497	506	504	11,1	11	10,2	10,7
APPRENTICE-SHIP	491	513	503	502	15,8	15,5	14,4	15,2

Source: Own calculations based on OECD PISA data base

Annex-table 6: PISA scores, average over all available waves 2003-15  
and all domains, by parents low and high formal education

	PISA scores average 2003-15		INDEX PISA scores (INT=1,00)		INDEX scores
	ISCED 2	ISCED 56	ISCED 2	ISCED 56	ISCED 56/2
UK United Kingdom	459	533	1,02	1,01	1,16
AT Austria	426	548	0,95	1,04	1,29
CH Switzerland	464	546	1,04	1,04	1,18
DE Germany	462	548	1,03	1,04	1,19
BE Belgium	465	539	1,04	1,02	1,16
NL Netherlands	485	545	1,08	1,03	1,12
DK Denmark	454	523	1,01	0,99	1,15
FI Finland	494	555	1,10	1,05	1,12
SE Sweden	450	513	1,00	0,97	1,14
NO Norway	445	508	0,99	0,96	1,14
INTERNATIONAL	448	527	1,00	1,00	1,18
CONTINENTAL	460	544	1,03	1,03	1,18
NORDIC	461	525	1,03	1,00	1,14
APPRENTICE-SHIP	451	540	1,01	1,02	1,20

Source: Own calculations based on OECD PISA data base