

## Measuring Youth Living Conditions in Europe: A Multidimensional Cross-Country Approach

### Authors Names and Affiliation:

Helena Corrales-Herrero. Department of Applied Economics. University of Valladolid. Spain, [helena@eae.uva.es](mailto:helena@eae.uva.es)

Beatriz Rodriguez-Prado. Department of Applied Economics. University of Valladolid. Spain, [bprado@eco.uva.es](mailto:bprado@eco.uva.es), Orcid: 0000-0002-6257-6385

### Postal Address:

Facultad de Ciencias Económicas y Empresariales  
Avda. Valle del Esqueva, s/n  
47011 Valladolid  
Spain

### Corresponding Author contact details:

Beatriz Rodriguez-Prado. [bprado@eco.uva.es](mailto:bprado@eco.uva.es); +34983185858

### Abstract

Since the onset of the Great Recession, it could be argued that it is the young who have been hardest hit in their living conditions. This paper offers a comprehensive description of youth living conditions and how they evolved during the recession period. To do so, we develop a synthetic index combining the indicators proposed by experts in the dimensions of Education and Training, Employment and Entrepreneurship, and Social Inclusion, through a multi-criteria approach based on the double reference point method. This technique enriches the debate by shifting the focus to acceptable and desirable thresholds for each indicator and by overcoming limitations inherent in previous youth indexes that allow for total compensation between the indicators, whilst ignoring potential imbalances. Results show that, in a context of convergence in policy instruments across countries during the Great Recession, there was an improvement in education performance, whereas cross-country divergences in terms of youth labour market prospects and social inclusion increased. This evolution has led to a more complex picture which is characterized by greater polarization in the spatial distribution of youth living conditions, with two noticeable poles: north-central Europe as opposed to the south and east of Europe. Differences in institutional configurations in the fields of education and training, active labour market policies, employment protection legislation and welfare provision together with macroeconomic trends, particularly levels of demand for youth labour and fiscal resources, have played an important role in shaping European youth living conditions.

**Keywords:** youth; living conditions; multi-criteria approach; double reference point method; EU countries

**JEL Codes:** C43, J13

## MEASURING YOUTH LIVING CONDITIONS IN EUROPE: A MULTIDIMENSIONAL CROSS-COUNTRY APPROACH

Since the onset of the Great Recession, it could be argued that it is the young who have been hardest hit in their living conditions. This paper offers a comprehensive description of youth living conditions and how they evolved during the recession period. To do so, we develop a synthetic index combining the indicators proposed by experts in the dimensions of Education and Training, Employment and Entrepreneurship, and Social Inclusion, through a multi-criteria approach based on the double reference point method. This technique enriches the debate by shifting the focus to acceptable and desirable thresholds for each indicator and by overcoming limitations inherent in previous youth indexes that allow for total compensation between the indicators, whilst ignoring potential imbalances. Results show that, in a context of convergence in policy instruments across countries during the Great Recession, there was an improvement in education performance, whereas cross-country divergences in terms of youth labour market prospects and social inclusion increased. This evolution has led to a more complex picture which is characterized by greater polarization in the spatial distribution of youth living conditions, with two noticeable poles: north-central Europe as opposed to the south and east of Europe. Differences in institutional configurations in the fields of education and training, active labour market policies, employment protection legislation and welfare provision together with macroeconomic trends, particularly levels of demand for youth labour and fiscal resources, have played an important role in shaping European youth living conditions.

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### 1. Introduction

Since the onset of the Great Recession, it is the young who might have been hardest hit in their living conditions. In particular, it is the young who have had to face the biggest rise in unemployment coupled with the greatest decline in their working conditions (Bell and Blanchflower, 2011; International Labour Organization, 2013; Eurofound, 2014a). The increase in unemployment for young people aged 15-24 during the crisis was substantial, rising from 15.3% in 2008 to 23.0% in 2013, a jump of some 50% in just five years (according to Eurostat database). Obviously, other key transitions that young people face, such as commencing further education or entering the labour market, establishing an independent household

and starting a family have also been hit by the difficult labour market situation.<sup>1</sup> Related to this, the term “lost generation” has spread to refer to young people facing a highly insecure future and virtual social exclusion (Wolbers, 2016).

In this context, young people’s plight has taken centre stage around the world, with governments and institutions implementing youth-focused policies and actions designed to support them (Chaaban, 2009; Sukarieh and Tannock, 2016). In the European context, the EU Youth Strategy 2010-2018 and the renewed EU Youth Strategy proposed by the European Commission for 2019-2027 set out the framework for cooperation between member states to improve the situation of the young by creating more and equal opportunities for them in education and in the labour market and by promoting their active citizenship, social inclusion and solidarity. In order to achieve these goals, said strategies adopt a transversal approach to youth issues in eight fields of action: Education and Training, Employment and Entrepreneurship, Health and Well-being, Participation, Voluntary activities, Social Inclusion, Youth and the World, and Creativity and Culture.

As part of this cooperation framework, member states agreed to establish a mechanism for regular reporting and assessment of the implementation of the EU Youth Strategy. Stemming from this agreement, a group of experts presented 41 indicators in the eight fields of action to evaluate the national performance and progress made towards achieving the proposed objectives (European Commission, 2011).

At present, those indicators are only used in insolation to monitor EU youth policy, yet there is no global youth index that provides a synthetic multidimensional cross-country comparison of European countries vis-à-vis improving living conditions for the young. In order to fill this gap, this paper seeks to develop a synthetic index of youth living conditions in Europe. Specifically, in order to build the index we combine the indicators from three dimensions included as fields of action in the EU Youth Strategy and that merge the most crucial aspects of young people’s lives: Education and Training, Employment and Entrepreneurship and Social Inclusion. In this sense, the index we propose is geared towards measuring the aspects of youth living conditions which are linked to their professional affirmation.

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<sup>1</sup> Youth is defined as a period of transition between childhood and adulthood. The length of this period varies hugely across socio-economic and political contexts. Any attempt to delimit it proves a difficult task, since a young person may be regarded as an adult in one domain but as a minor in others.

The index is computed for two moments in time: 2007, when the effects of the Great Recession were first felt, and 2016, which corresponds to the latest available data. In this way, a second objective of the paper is to compare both the current relative performance of European countries regarding youth living conditions and to track how they evolved during the economic crisis.

In a more global context, other synthetic indexes that explore the youth situation may also be found. A first experience is the global Youth Development Index (YDI) proposed by the Commonwealth (Commonwealth Secretariat, 2016). This composite index includes 18 indicators spanning five domains (education, health and well-being, employment and opportunity, political participation, and civic participation) to measure multi-dimensional progress in youth development in 183 countries (49 of the 53 Commonwealth countries). In a similar vein, the global Youth Wellbeing Index (YWI) also provides a comparative analysis for 30 countries in terms of overall youth wellbeing covering six domains: education, health, economic opportunity, information and communication technologies (ICT), security and citizen participation (Goldin, Patel and Perry, 2014). Methodologically, both indexes use classical standardisation (the range between maximum and minimum values) and are computed as a weighted arithmetic mean of the indicators, which implies full substitutability (compensation). Therefore, they might lead to misleading conclusions since there may be countries that have excellent results in certain indicators that may offset poor results in others (OECD, 2008). Moreover, these experiences cover a wide and vastly differing number of countries, which significantly conditions the dimensions and indicators used.

In this paper, we propose a multi-objective double reference point method (Wierzbicki, 1980; Wierzbicki, Makowski, and Wessels, 2000; Luque et al., 2009). This method has also been applied to devise synthetic indexes in other areas such as human development (Luque, Perez-Moreno and Rodriguez, 2016), competitiveness (Perez-Moreno, Rodriguez and Luque, 2016), tourism (Navarro et al., 2012; Pulido-Fernandez and Rodriguez-Diaz, 2016) and sustainability (Ruiz, Cabello and Luque, 2011).

This technique contributes to enrich the ongoing debate by shifting the focus towards desirable and acceptable thresholds for each indicator and by going beyond the concepts of maximum and minimum values. It also enables overcome the limitations of previous indexes, which allow full compensation between indicators, while ignoring potential imbalances. In this vein, we believe the indicators that are equally determinant of youth living conditions should not totally compensate for one another, since the capacity to increase the well-being of youth requires all of them, to a large extent. Thus,

we propose two indexes with different degrees of compensability in order to pinpoint not only the aggregate performance of each country (full compensability-weak index) but also their main vulnerability vis-à-vis the youth situation (null compensability-strong index). Thus, we provide a precise and comprehensive assessment of each country's performance as well as its evolution during the recession and we analyse the factors explaining each situation.

Furthermore, our proposal opens up the possibility that the EU panel of experts may provide both the weightings of the different indicators as well as their desirable and acceptable levels, and can therefore be used to monitor youth living conditions in European countries. It thus constitutes an extremely useful tool to provide a clear view for defining appropriate youth policies in each country and for tracking the impact of future interventions. In this sense, we discuss the role played by institutions and policies promoted at the European level and implemented in the different countries over the last decade as drivers of changes in youth living conditions during the recession period.

The structure of the work is as follows. Section 2 is devoted to reviewing youth condition at the present time in Europe and to defining the conceptual framework for youth living conditions. Section 3 describes the dimensions and indicators that make up the synthetic index. The following section explains the double reference point method applied. Section 5 presents the results regarding the current situation as well as the most significant changes to have occurred between 2007 and 2016. Finally, the paper ends with a discussion and the main conclusions to emerge.

## **2. Youth condition at the present time in Europe and conceptual framework**

### **2.1 Youth condition at the present time**

Youth living conditions are a fundamental field of research vis-à-vis understanding the specificities of youth, in particular, their behaviour, needs, dilemmas, and aspirations. The central question for researchers tends to be how social, economic and political contexts frame and shape the lives of young people. Yet what are the socioeconomic and political circumstances that are defining the lives of young people today? Much has been written about the major trends that affect young people's living conditions (Bessant et al., 2017; Green, 2017; Schoon and Bynner, 2017; O'Reilly et al., 2019). Many of these already existed before the crisis (which has amplified the trends) and some may yet impact opportunities well into the future (Schoon and Bynner, 2019). By way of a summary, we pinpoint three relevant changes: (1) a paradigm transformation in the markets caused by increasing competition in a more globalised world. In terms of labour markets, the most visible transformation is the decline of (unskilled)

manual jobs, which is linked to the introduction of new technologies and the gradual shift towards automation. In an effort to address these changes, policy recommendations advocate promoting more flexible types of employment. Labour market reforms geared towards flexibility have had greater implications for young people; (2) a de-standardization of youth transitions with a pluralization of the routes that lead young people to adult life (Blossfeld et al., 2005; Furlong, 2010; Schoon and Bynner, 2017); and (3) a new dynamic present in a society that is characterized by the high-speed at which things are occurring (Green, 2017) related to the use of technologies. This might help to explain possible changes in attitudes and behaviours of young people in several life domains, given that technology influences social practices, patterns of thoughts and styles of interaction with other members of society (Leccardi, 2017).

The longer-term structural economic changes triggered by globalization are leading to enormous uncertainty and instability in the economy. Government response was to promote flexibility in the labour markets, yet without explicitly taking into account age differences (Green, 2017). The idea was to make the labour market more responsive (flexible) to changes under the assumption that an increase in flexibility would lead to more employment opportunities and thus enable many young people to join the labour market when the economy grew (Smith and Villa, 2017; Leschke and Finn, 2019). Yet this had something of a boomerang effect when the economy shifted downwards. During the recession, labour demand was weak or insufficient and only served to further exacerbate young people's labour market situation, given that they are more vulnerable to economic fluctuations and face more elastic labour demand relative to adult workers (Eurofound 2014b; Eichhorst, Marx, and Wehner 2016). As a result, young people suffered a sharp rise in unemployment and a deterioration in employment quality combined with greater precariousness.

In terms of youth transitions, several demographic facts such as the age at which young people tend to leave the parental home, get married or have children, confirm that the transition to adulthood starts later, takes longer and occurs in a less standardised manner. Postponing these markers is mostly explained as being the consequence of major social changes rather than as a cultural issue (Nico, 2009). Young people are now more interested in securing a stable financial condition before striking out on their own, and decide to postpone their aspirations and life projects. Yet it seems that labour market regulations (e.g., employment protection legislation (EPL) or active labour market policies (ALMPs)) coupled with the generosity of the welfare state (i.e., social assistance and unemployment benefits) affect both the

economic independence of young people as well as their access to affordable accommodation (Mazzotta and Parisi, 2019), and becomes the main reason why they delay moving out of the parental home.

In relation to the third issue, the new dynamics of society means that young people face a rapidly changing environment that is perceptible not only at the technological level, but also in other dimensions such as family composition or social participation, and which entails building a whole new affective and identity world. In this context, creating a life plan appears challenging due to the speed of social changes and the accompanying discontinuities, coupled with high levels of uncertainty (Leccardi, 2017). This could explain some of the changes in attitudes and behaviours which young people undergo, such as their individualism or their orientation towards leisure and consumption (Benedicto, 2008; Hadju and Sik, 2017). In addition, the apparent apathy could reflect their frustration with regard to how the system works, failing as it does to provide them with the answers to their needs. The importance of social context and the new forms of communication are fresh elements that influence youth participation in several spheres of life such as politics. These new forms allow them to be more connected with one another and with the world at large. There is evidence of resilience in the face of adversity and young people seem to be forging new relationships with the future (Schoon and Bynner, 2017).

The trends highlighted have accentuated the change in the way most scientists and researchers now approach the issue of youth (Wyn and Woodman, 2006; Woodman and Wyn, 2014; Côté, 2014) and, by extension, youth living conditions. Researchers have begun to talk about young people as a generation, rather than as a transitional phase in life where the most relevant changes occur in order to acquire the status of adult and to become a fully-fledged member of society. Youth has always been conceived as a time of uncertainties (Bessant et al., 2017; Green, 2017). Yet the increased uncertainty and insecurity which characterizes the generation that is experiencing the transition to adulthood at the turn of the millennium or later, has greatly complicated the formulation of realistic goals over a longer timeframe. This context of insecurity is expected to last throughout their life course and for some researchers will possibly become a social condition in adult life (Furlong, 2010; Côté, 2014), with long-term consequences regarding this generation's deteriorating prospects. As a result, this is thought to be the first generation which, on average, is likely to do worse than its preceding generations across a range of key domains and over the whole life course (Green, 2017).

## **2.2. Conceptual framework for youth living conditions**

For a long time, employment and education have been major issues when comparing the situation of young people with that of their peers from other regions or other age groups. Accordingly, the debate surrounding social policies for young people has been dominated by such issues, which were also addressed in the EU 2020 Strategy. On the one hand, one of the top priorities in life for most young people is finding a job, contingent upon which depends the possibility of realising a number of other aspirations, as recent Eurobarometer data have revealed (European Commission, 2018). The employment situation thus has relevant effects on the course of young people's lives, such that being excluded from the labour market might restrict their chances of living a decent life. In particular, regulating work and the employment relationship has been a key area in which important outcomes related to living standards, social participation and economic efficiency have been achieved (Ayres-Wearne, 2001). In this respect, the current period is characterized by strong labour market deregulation aimed at securing greater flexibility, which has increased labour market segmentation, and has particularly affected young people (O'Reilly et al., 2015).

On the other hand, education has gained greater importance as a precursor to employment in the sense that educational attainment constitutes a prerequisite for and indeed the key to a person's social functioning in today's industrialised high technology society (Ayres-Wearne, 2001). It is interesting to note that employment and education are usually considered to be separate, albeit clearly interconnected objectives (International Labour Organization, 2015). Individuals' capacity to take up labour market opportunities over their life course is increasingly linked to education and training (Hancock et al., 2001).

However, recent socioeconomic transformations have led to changes in the way young people are studied within an integrated youth policy designed to ensure sustainable living conditions in today's risk society. In contrast to their previous generation peers, a growing number of young people face ever-increasing insecurity; that is, young people today have less guarantee of achieving sustainable living conditions over their lifetime (Ayres-Wearne, 2001; Bocuzzo and Gianecchini, 2015; Hadjivassiliou, 2017). It has been argued that there is increasing inequity in employment opportunities among this group and that this inequity is one indicator of the possibility of disadvantage becoming entrenched over the life course (Macdonald and Holm, 2001; Moreno Mínguez and Crespi, 2017). Beyond those who are unemployed, marginalisation and poverty are also affecting substantial numbers of young people due to the increasing prevalence of part-time and casual work. Underemployment, intergenerational poverty and the rise of the working poor are the new phenomena that are exacerbating the precarious nature of today's



labour market which the young are experiencing (Macdonald and Holm, 2001). In this line, employment and education are proving insufficient to secure the resources required to live a decent life. As part of this new youth development approach, youth inclusion is seen as one key to policy, programmes, planning, and practice with young people. In this sense, any analysis of youth should incorporate a new dimension devoted to social exclusion/inclusion. In sum, our study of young people's living conditions takes into account three dimensions: education and training, employment and entrepreneurship, and social inclusion.

### **3. Youth living conditions: indicators**

When constructing a synthetic index, it is essential for the selection of indicators to be comprehensive and to respond to criteria of suitability and consistency (OECD, 2008). Our starting point are the indicators identified to monitor youth policy by a group of experts appointed by the European Commission (European Commission, 2011). After revising them one by one, the index is finally composed of 18 indicators, grouped into three dimensions (Education and Training, Employment and Entrepreneurship, and Social Inclusion). The final indicators, together with the statistical source used to calculate them and the reference year are listed in full in Table 1<sup>2</sup>.

Table 1: List of indicators by dimensions

Before moving on to some relevant issues related to the indicators incorporated in each dimension, two clarifications need to be made. First, the indicators finally included are taken from traditional European statistical sources, with a long track record and experience within the European framework, such as the European Labour Force Survey (EU-LFS) and the European Survey on Income and Living Conditions (EU-SILC). Apart from these sources, indicators related to educational performance are taken from the Program for International Student Assessment (PISA), developed by the OECD.<sup>3</sup>

Second, policies and programmes aimed at young people require selected data to be age-disaggregated. In this vein, the age group set to identify young people in the context of the EU comprise ages between 15-29 years, although some indicators are not strictly defined according to this age group,

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<sup>2</sup> We would like to remind that the aim of the group of experts was to provide a dashboard of indicators to monitor young people living conditions. The aim of the dashboard is not therefore to build a composite indicator.

<sup>3</sup> In very few cases, the indicator for a specific country in a particular year was not available. As usual in these circumstances, an imputation method is applied. When there is information for another different year, the gap was filled using the most recent prior value for the indicator (cold deck imputation).

following expert recommendations and considering certain theoretical and practical issues (European Commission, 2011; Ecorys, 2011).

Education undoubtedly plays a key role in the development of young people, as it is closely linked to employment and standards of living (International Labour Organization, 2015). The dimension of *Education and Training* includes such relevant aspects as educational performance, dropout rates or the level of qualifications achieved. In particular, the list of indicators includes the rate of early school leaving from education and training, educational performance in reading, mathematics and science, young people who complete at least upper secondary education, and the population aged 30-34 years who have completed tertiary education.

As regards the basic indicators included in the *Employment and Entrepreneurship* dimension, they aim to reflect both the difficulties in accessing employment as well as issues related to working conditions. The final list includes the youth unemployment rate, the long-term youth unemployment rate, the youth unemployment ratio, the youth self-employment rate, the youth temporary employment rate and the youth involuntary part-time employment rate. Youth unemployment is an essential and common indicator to identify employment opportunities and, therefore, to measure the degree of under-utilization of the youth workforce. However, youth unemployment rates do not always faithfully reflect the difficulties that young people face when seeking employment, particularly when most are studying and not actually seeking employment.<sup>4</sup> This is why, together with the unemployment rate, the ratio of youth unemployment, which includes young people who study in its denominator, is considered (O'Reilly et al., 2015; Hadjivassiliou et al., 2015). The rate of long-term youth unemployment adds a further dimension so as to allow for recognition of the nature of unemployment. Any increase in this indicator is a clear symptom of serious problems when entering the labour market. Although long-term unemployment is usually a problem that affects the adult population more, in the case of young people a prolonged period of unemployment may lead to social exclusion problems.

Within the EU's political agenda, entrepreneurship currently holds a prominent place as a tool to combat youth unemployment and social exclusion (Serrano Pascual and Martin Martin, 2017; Dvoulety et al., 2018), and to promote innovation among young people (Youth Employment and Entrepreneurship Strategy). This emphasis on promoting the entrepreneurial spirit of young people has led experts to

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<sup>4</sup> This means that two countries with a difference in the share of young people in education will display different youth unemployment rates if they have equal numbers of unemployed youth. To solve this problem, Hill (2012) suggested the use of ratios, as they provide a more accurate measure because those not looking for full-time work, in other words full-time students, are included in the denominator.

propose indicators in this dimension that measure entrepreneurial spirit among the young. The indicator used is the youth self-employment rate rather than results from the Eurobarometer concerning their intention to start up their own business.<sup>5</sup> Some authors are sceptical with regard to the idea of including this measure and show great concern about this new form of employment for young people due to the phenomenon of bogus or false self-employment; in other words, workers who would normally fit the legal definition of an employee but who are instead registered as self-employed (Ortlieb et al., 2019).

Finally, this dimension also includes basic indicators to indicate job characteristics reflecting the degree of precariousness of youth employment. Temporary employment can be the key to accessing stable employment, yet can also lead to permanent job instability when it becomes prolonged. In the same line, involuntary part-time employment also becomes another indicator of precariousness and job instability, and emerges when young people decide to accept a part-time job given the difficulties of finding a full-time one (Hadjivassiliou et al., 2015).

Before moving on to the next dimension, it is worth noting the close relationship between the two dimensions considered for young people, who are often at the halfway stage between education and the labour market. Indeed, the decision to continue in education largely depends on the opportunities offered by the labour market. In short, a bad decision may put young people at a disadvantage when compared to their peers, particularly in an unfavourable economic climate (Kahn, 2010).

The last dimension is devoted to issues related to *Social Inclusion*. The European platform against poverty and social exclusion is one of the seven flagship initiatives within the Europe 2020 Strategy whose main goal is to help EU countries to rescue 20 million people from poverty and social exclusion (Atkinson et al., 2004). The economic crisis has also increased poverty and social exclusion among young people in Europe, possibly more acutely than for the population as a whole. In this line, several indicators have been established to reflect multiple facets of poverty in a similar way to Giambona and Vassallo (2014), and which correspond to the main dimensions of social inclusion measured by Eurostat (2011): rate of youth population at risk of poverty, rate of young people with severe material deprivation, rate of youth population living in households with very low work intensity, rate of youth population not having unmet medical needs. In relation to these indicators, the debate has focused on the age range, since in countries where the young are independent at an earlier age, they will show higher levels of risk of poverty compared to countries in which young people delay their economic independence

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<sup>5</sup> As already mentioned, data from the Eurobarometer are only available for 2011.

and live with their parents longer. As pointed out by Chevalier (2016), European countries vary enormously with regard to young people's accessibility to financial independence. Apart from these indicators, the percentage of young people who are neither studying nor working (the so-called NEET generation) is also included in this dimension. In some cases, (Commonwealth Secretariat, 2016), it is used as an indicator of the labour market situation, although for the group of experts it is a measure of the degree of social exclusion among young people.

In order to assess the internal consistency and reliability of the dimensions, we compute Cronbach's  $\alpha$ . In none of the three dimensions is the value above 0.95, which may suggest that some indicators are redundant as they are measuring very similar concepts. In contrast, the values meet Nunnally's statistical threshold of 0.7 used in exploratory analysis (more precisely, 0.82, 0.84 and 0.73, respectively) which leads us to the conclusion that the selection of the indicators is appropriate.

#### **4. Methodology**

Although there are several methods to build synthetic indexes<sup>6</sup>, we propose multi-criteria decision methods. This approach allows different alternatives to be evaluated based on several criteria.<sup>7</sup> In this setting, countries are considered as different alternatives and indicators are the criteria used. Specifically, we applied a multicriteria double reference point method (Wierzbicki, Makowski, and Wessels, 2000; Luque et al., 2009). In short, this method consists of establishing two reference points for each indicator: a reservation level, below which the values of the indicator are not regarded as acceptable, and an aspiration level, which is a desirable value for the indicator. Once these values are established, a piecewise linear achievement function, which measures the deviation between the values of the indicators and the reference levels, is used to build two synthetic indexes for each country: a weak and a strong index. The weak index measures the aggregate youth living conditions since it allows for compensations (trade-offs) among different indicators, whereas the strong index measures the state of the worst indicator and allows no compensation.

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<sup>6</sup> Classical manuals on methods used to build synthetic indicators are Nardo et al. (2005) and OECD (2008). A more recent review of the methods can be found in Greco et al. (2019).

<sup>7</sup> The approach relies on the assumptions of optimising behaviour (Luque et al., 2012).

More precisely, let  $T$  denote the number of countries considered in the study,  $k$  the number of dimensions, and  $p_k$  the number of indicators assigned to dimension  $k$ . Let  $q_{ki}^j$  be the value of indicator  $i$  for country  $j$  in dimension  $k$  ( $k=1,2,3; i=1, \dots, p_k; j=1, \dots, T$ ).<sup>8</sup>

For each indicator, the value of each country is normalised in the range  $[-1,2]$  by means of the two reference values (aspiration and reservation values) using an achievement scalarizing function which is piecewise linear. The aspiration level is the desirable level to be achieved for this indicator, and a reservation level is the value below which all values are considered unsuitable. In particular, for each indicator  $i$  ( $i=1, \dots, p_k$ ) the following country achievement function ( $S_{ki}^j$ ) is computed:

$$S_{ki}^j = \begin{cases} 1 + \frac{q_{ki}^j - q_{ki}^a}{q_{ki}^{max} - q_{ki}^a} & \text{if } q_{ki}^a \leq q_{ki}^j \leq q_{ki}^{max} \\ \frac{q_{ki}^j - q_{ki}^r}{q_{ki}^a - q_{ki}^r} & \text{if } q_{ki}^r \leq q_{ki}^j \leq q_{ki}^a \\ \frac{q_{ki}^j - q_{ki}^r}{q_{ki}^r - q_{ki}^{min}} & \text{if } q_{ki}^{min} \leq q_{ki}^j \leq q_{ki}^r \end{cases}$$

where  $q_{ki}^{min}$  and  $q_{ki}^{max}$  are the lower and higher values of the indicator, and  $q_{ki}^a$  and  $q_{ki}^r$  are their aspiration and reservation levels, respectively.

$S_{ki}^j$  takes -1 if the indicator for that country ( $q_{ki}^j$ ) equals the minimum, 0 if it equals the reservation level, 1 if it equals the aspiration level and 2 if it equals the maximum. Thus, normalised values above 1 mean that the country is above the aspiration level for that indicator, whereas values below 0 indicate that the country is below the reservation value. Values between 0 and 1 mean that the country is between the reservation and the aspiration level.

There are several ways to define aspiration and reservation levels for each indicator. Basically, these values can be set statistically or according to the opinion of a group of experts. As far as we are concerned, these values should be defined objectively in an absolute manner. However, at present there are no values widely accepted by the international community that can be used as desirable and reservation thresholds for each indicator. Thus, in this paper, statistical reference values have been considered for each indicator, taking into account the real situation at a particular moment in time of the group of countries analysed. These statistical criteria give us the relative position of a country with regard to the others for each indicator. Specifically, reservation values are taken from the first quartile of the total number of countries for each indicator (the value below which 25% of countries appear for each indicator, Q1); and aspiration values are

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<sup>8</sup> It will be assumed that all indicators are of the ‘the more, the better’ type. Thus, we have transformed indicators of the type ‘the less, the better’ to the ‘the more, the better’ by computing 100 minus the indicator.

taken from the third quartile (the value below which 75% of countries appear for each indicator, Q3). The values for each indicator appear in Table 2.

From these achievement functions, we propose the construction of two synthetic indexes, depending on the degree of compensation of the indicators included in each dimension: first, the weak index ( $I_k^{jw}$ ), which allows the trade-off between different indicators and takes the form of a weighted mean of the country achievement functions included in that dimension.

$$I_k^{jw} = \sum_{i=1}^{pk} (w_{ki} * S_{ki}^j)$$

where  $w_{ki}$  is the weight given to each indicator. In this sense, weights can be determined statistically or according to the opinion of a group of experts. In this paper, we have calculated them statistically by means of principal component analysis with data corresponding to 2016. The advantage of principal component analysis is that it solves the double counting problem associated with the use of indicators in the same dimension with a high degree of correlation. In this regard, for some schools of thought, the existence of highly collinear indicators within a dimension might prove problematic, since it could over-influence the dimension construction and reduce the contribution of the other variables (Castellano and Rocca, 2015). However, in multi-criteria decision analysis the existence of correlations is considered to be a feature of the problem and is not to be corrected, as correlated indicators may indeed reflect different non-compensable aspects of the problem (Saisana et al., 2005). In our context, the low achievement PISA indicators in reading, science and maths may be considered as the outcome of the same phenomenon; that is, an inadequate education system. As a result, the weight given to each PISA indicator is much lower than the weight given to the other indicators in the Education and Training dimension.

Second, the strong index does not allow any type of compensation between indicators and shows the state of the worst indicator. It is computed as<sup>9</sup>

$$I_k^{js} = c_k + \min_{i \in k} \bar{w}_{ki} * \bar{S}_{ki}^j$$

where  $\bar{w}_{ki} = \frac{w_{ki}}{\max_{i \in k} w_{ki}}$  is the weight normalised by its maximum value, and  $\bar{S}_{ki}^j$  is the corrected value of the achievement function given by

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<sup>9</sup> It must be borne in mind that the effect of the weights is the opposite for positive and negative values of the achievement functions. For negative achievement values, a greater weight produces a worse strong indicator value, and for positive achievement values, a greater weight produces a better value of the strong indicator. Thus, in order to avoid this bias we need to correct weights and the values of the achievements function.

$$\bar{S}_{ki}^j = S_{ki}^j - c_k$$

where  $c_k = [\min_{i \in k} S_{ki}^j] + 1$ , denoting  $[ \ ]$  the integer part of a real number (Luque, et al. 2009).

As do the achievement functions, both synthetic indexes take values between  $[-1, 2]$  and show better performance for higher values. As regards the strong index, a negative value indicates that the country performs below the reservation level for at least one individual indicator, and a value over 1 means that all the individual indicators of the country have values better than their corresponding aspiration levels. In addition, as a compensatory measure, the weak index shows the overall performance of the country, taking into account all the indicators<sup>10</sup>.

Once the weak and strong indexes have been calculated for each country and each dimension, the final aggregation is performed to obtain a single pair of indexes (weak/strong) for each country. If different weights are assumed for each domain ( $w_k$ ), the synthetic indexes are defined as follows:

$$I^{jw} = \sum_{k=1}^3 w_k * I_k^{jw}$$

$$I^{js} = c_k + \min_{k=1..3} \{I_k^{js}\}$$

At this level, we attach the same importance to the three dimensions analysed, i.e. equal weights.

## 5. Results

In this section, we first describe the most relevant results in terms of the two indexes, and then explain in greater detail youth living conditions regarding each dimension separately<sup>11</sup>. The analysis is also divided into two parts. First, it focuses on the most recent situation of young people. Two years are then compared to underline the major changes that young people faced between the 2007 and 2016.

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<sup>10</sup> A weighted geometric mean, as an aggregation method, is a partial solution for compensability. While linear aggregation offers constant compensation, geometric aggregation offers inferior compensability for indicators with lower values (diminishing returns). In both linear and geometric aggregation, weights express trade-offs between indicators, with the idea being that deficits in one indicator or dimension can be offset by surplus in another. However, when different goals are legitimate and important, non-compensatory logic is necessary (Nardo, et al. 2005).

<sup>11</sup> We have also carried out all the calculations applying the min-max approach as a standardization criterion. The country's ranking obtained from both criteria are not very different, thus confirming the robustness of our results (the Spearman rank correlation is 0.96). In the same vein, we have also carried out all the calculations using the geometric mean as an aggregation method. As expected, the Spearman rank correlation between the weak index and that obtained with the geometric mean is only 0.41, whereas the rank correlation with the strong index is close to 0 (-0.04). Table A1 of the Appendix show the country final ranks. The results reinforce the favourability of non-compensatory aggregation techniques derived from the multi-criteria approach (Castellano and Rocca, 2014 and 2015). Detailed results are available from the authors upon request.

### 5.1. *European youth living conditions in 2016*

For a better understanding of the living conditions of young people, we combine several types of information. Table 2 shows the normalised values (achievement function) for each indicator and country. Each column of the table shows the relative position of that country in all the indicators and each row shows the relative position of all countries with regard to that indicator. In an effort to illustrate the analysis, we use a greyscale to identify the meaning of the values, in other words, to recognize each country's strengths and vulnerabilities. Cells are shaded dark grey when the achievement function is below zero, i.e. when the indicator for this country is below the reservation level (vulnerabilities), whereas cells are shaded white when the achievement function is greater than one, i.e. when the indicator is above the satisfaction level (strengths). Values between 0 and 1 appear in light grey and mean that the country is between the reservation and aspiration level.

Secondly, Table 3 reports the country value of the weak and strong index for each dimension as well as for the combination thereof (global index). In order to make joint analysis of both indexes easier they are also displayed in several graphs (Figure 1). In each graph included in this figure, the X-axis represents the values of the weak index and the Y-axis the values of the strong index. The (0, 0) lines break the space into four quadrants/sections, which reflect three possible situations.<sup>12</sup> The best scenario occurs when both the weak and strong indexes are positive (upper-right quadrant). This implies that the country analysed has no indicator with a value below the reservation level. The worst situation occurs when both indicators are negative (lower-left quadrant). In this case, the country fails to compensate its negative indicators and has at least one indicator with a value below its reservation level. Between both cases, there is an intermediate situation that occurs when both indexes are of the opposite sign, which can happen when, despite having a strong negative index, favourable indicators in a country offset the unfavourable ones and the weak index displays positive results (lower-right quadrant).

Within the same quadrant, it is also interesting to observe the position occupied by countries. For example, in the intermediate situation (lower-right quadrant), countries are in a better position the further to the right and the closer to the X axis they are in the graph.

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<sup>12</sup> By definition, it is not possible to have a positive value in the strong index and a negative value in the weak index. Thus, there cannot be countries in the upper-left quadrant.



Finally, Table 4 presents the main vulnerability for each country and dimension, which corresponds to the individual indicator associated to the strong index. This helps to highlight the biggest challenge facing each country. Letters in bold indicate a negative strong index, i.e. a clear vulnerability.

Table 2: Achievement scalarizing function in 2016

Table 3: Country values and rankings of weak and strong indexes by dimensions and global in 2016

Figure 1: Country weak and strong indexes by dimensions and global in 2016

Table 4: Country indicator associated to strong index (main vulnerability) by dimensions in 2016

### *Weak and Strong Index*

Figure 1 shows jointly the values of the weak and strong indexes for each dimension as well as for the combination thereof (global index) in 2016. First of all, the importance of combining the information from the two indexes should be highlighted. Focusing merely on the weak index, youth living conditions are relatively good for most countries, with the exception of Spain, Greece, Romania, and Italy, which display a negative value. However, when considering both indexes, Austria is the only country with a totally satisfactory performance in the sense that both weak and strong indexes are positive, which means that the youth population in Austria shows no vulnerability (upper-right quadrant). Other countries such as the Czech Republic, Germany, Estonia, Lithuania, Luxemburg or the Netherlands have a positive value in the weak index, although young people in these countries face one or several vulnerabilities (strong negative index), basically related to the labour market or to social inclusion (lower-right quadrant).

Among the countries occupying an intermediate position (weak index between 0.5 and 1, lower-right quadrant) two large groups can be distinguished. On the one side are the United Kingdom, Finland, Latvia, Belgium, Slovakia, and Hungary with moderate negative values in the strong indicator, while on the other, Denmark, Sweden, Ireland, and Poland show a value closer to -1. In all cases, the latter group evidence vulnerabilities in the last dimension (Social Inclusion), with Sweden reaching the minimum value (-1). Finally, within this quadrant, there are two countries with a positive value in the weak index but very close to 0, Bulgaria and Portugal. For these countries, the good performance in one dimension barely makes up for the poorer results in the other two dimensions.

A final group comprises Spain, Greece, Romania, and Italy, with negative values both in the strong and weak indexes (lower-left quadrant). All of them have at least one indicator below the

reservation value in all dimensions (i.e. a strong negative index for the three dimensions) and a negative value in the weak index in at least two dimensions.

Of course, the reasons why countries perform differently are complex, and there may be diverse explanations for different dimensions within the index. Therefore, the next step is to examine the results separately for each dimension.

### *Education and Training*

Four countries, Romania, Spain, Italy, and Bulgaria, are situated in the lower-left quadrant, where both the weak and strong indexes take negative values. For these countries, the positive indicators are unable to make up for their vulnerabilities. Table 2 and Table 4 reveal that whereas Romania and Bulgaria evidence major disadvantages in most of the education indicators, Spain concentrates them in two basic education indicators: the early school-leaving rate and the percentage of young people with at least secondary education. As for Italy, it is located at the bottom of European countries in the percentage of young people with tertiary education. In a not much better situation are countries such as Hungary and Portugal with large vulnerabilities in certain indicators that are slightly offset by other indicators (a weak index positive). In this respect, Hungary shares the same vulnerability as Romania but to a much lesser extent, while the youth situation in Portugal is more similar to Spain, with problems in only two indicators, but to a far more moderate extent.

A large number of countries occupy the middle ground, but are clearly better as they have a higher value in the weak and strong indexes: Denmark, Slovakia, Greece, Luxemburg, the Czech Republic, and Germany. Most of them are in this position because they have at least one indicator (or several) below the reservation value but not very far from it (Table 2).

Looking at the countries that are in the best position in this dimension, we find Ireland, followed by Slovenia, Poland and Finland.

### *Employment and Entrepreneurship*

It is the young living in Greece, Spain, Italy or Portugal who face the greatest problems in the labour market. In all cases, the strong and weak indexes take negative values due to the fact that all the indicators, except one, are below the reservation value (Table 2 and 5). In Greece, the most relevant vulnerabilities are related to the rate and the ratio of youth unemployment and to long-term youth unemployment. For Spain,

the biggest weakness is determined by the youth unemployment ratio, whilst the percentage of young self-employed performs better. Italy is at the bottom in the percentage of young people with an involuntary part-time job. Finally, the situation of Portugal is slightly better in comparison to these other countries.

With positive values in the weak indicator, but with at least one clear vulnerability are Poland, Romania and Slovenia. The biggest challenges facing these countries are related to indicators measuring job insecurity. Whereas for Poland and Slovenia the vulnerability stems from the high proportion of young people with a temporary contract, in Romania it is the proportion of youth involuntary part-time employment rate. In contrast, countries such as Estonia, Lithuania, Denmark, Germany or Austria are characterised by positive values in both indexes, with most of them keeping all of their indicators close to or above the aspiration level.

### *Social Inclusion*

As for the Social Inclusion dimension, the countries occupying the worst positions are Greece, Bulgaria, Romania, and Italy. It should be noted that Italy is the only country that also appears in this position when analysing the other dimensions. Greece, Romania and Bulgaria show strong vulnerabilities in at least two indicators, whereas Italy's major weakness is the percentage of young people who are neither studying nor working.

Among the countries that are in an intermediate situation, Spain, Denmark, Ireland, Estonia, and Sweden evidence one or two notable vulnerabilities (Table 2). Spain and Ireland are known for exhibiting a high percentage of households with low work intensity, Denmark by the proportion of young people reporting no unmet medical needs, and Estonia and Sweden by the percentage of young people who have difficulty meeting their medical needs.

Austria is the country that presents virtually all its indicators above the aspiration value in this dimension, followed by Slovenia, Germany, and Luxemburg. Also worthy of note is the position of Luxemburg, which has the highest value in the weak indicator but an intermediate value in the percentage of young people at risk of poverty.

In this context, it should be remembered that the difference in the age at which young people emancipate and become independent citizens in social and financial terms in the various countries partly explains the relative position that some countries occupy, especially in relation to the percentage of young people at risk of poverty and the percentage of young people in homes with low labour intensity.

Finally, in an effort to illustrate and facilitate the analysis, some cartograms were obtained representing the geographical distribution of youth living conditions in Europe (Figure 2). Maps were drawn based on the global weak index and on each dimension, including in brackets the number of indicators below the reservation value, i.e. the number of vulnerabilities each country faces. Despite the differences by dimensions already commented on, the maps clearly show two poles in the distribution of youth living conditions: the north-centre as opposed to the south and east of Europe.

Figure 2: Classification of EU countries according to the weak index by dimensions and global and number of vulnerabilities in 2016.

## 5.2. Evolution of youth living conditions over the period 2007-2016

In this section, we analyse the evolution of youth living conditions in European countries over the period 2007–2016, in other words, from the time the effects of the Great Recession were first felt until the moment the present research was carried out using the latest available data. To do so, rather than computing the indexes at the two moments, we performed the following simulation analysis. We compared the situation of each country in 2007 with the situation it would have reached in 2016 if aspiration and reservation values had been those obtained in 2007. In this way, by maintaining the parameters fixed at the 2007 level we can isolate the evolution of youth living conditions in each country and pinpoint any real change in the situation and prospects of youth.<sup>13</sup>

To analyse the evolution of youth living conditions during the period, Tables 5 to 7 include the results obtained for each dimension in 2007, in the simulated situation in 2016, as well as the difference between the two (the achievement functions are presented in Table A2 of the Appendix). To highlight the main results, we used bold lettering for positive differences and italics for negative ones. Slight differences, in the range of  $\pm 0.09$ , are shaded in light grey. In addition, in order to illustrate and facilitate the analysis, we also included maps based on 2007 weak indexes, and which include, in brackets, the sign of the change experienced by each country between 2007 and the simulated 2016 (Figure 3). By combining both pieces of information in the maps, we can detect whether changes have occurred in countries with better or worse youth living conditions in 2007. This is important when analysing the result because the same change may

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<sup>13</sup>A simple comparison of the index computed in 2007 and 2016 does not necessarily indicate any real change in the situation of youth, but only reflects changes in the place each country occupies within an international ranking. A country might improve its position in the ranking merely because other countries do worse in terms of youth living condition indicators.

be perceived differently, in relative terms, depending on the country's initial situation in 2007.

Table 5 shows that most countries show a slight change in the global weak index value, which could be interpreted as reflecting stable youth living conditions during the period analysed. In fact, only five countries showed a notable improvement in the general situation of their youth (Germany, Poland, Portugal, Bulgaria, and the UK) whereas another four experienced a substantial decline (Spain, Finland, Slovenia, and the Netherlands). The improvement in Portugal and Bulgaria is worth noting since they were at the bottom of the ranking in 2007, whereas Slovenia and the Netherlands were at the top.

The comprehensive analysis of the differences at a dimension level provides insights into which factors lie behind the variations at a global level. In this regard, the analysis by dimensions shows a very different picture, with three clear outcomes emerging.

The first is the upgrading in the Education index in almost all countries. The biggest increases are apparent in Portugal (0.95), Greece (0.73), Ireland (0.68), Latvia (0.56), and Luxemburg (0.53). Only Hungary and Finland evidenced a reduction, although Finland continues to feature among the leading countries in this dimension.

The second result is a clear deterioration in the value of the Labour Market index in almost all countries, with the notable exception of Germany (with an increase of 1.07), followed some way behind by Poland (0.42), Hungary (0.35), Sweden (0.26), and Belgium (0.12). In this regard, worth noting is the case of Poland, which was at the bottom of the scale in 2007. In this dimension, the greatest decline in the youth labour market prospect was suffered by countries situated in middle or higher positions in 2007 such as Ireland (-0.86), Latvia (-0.80), the Netherlands (-0.79), Spain (-0.70), and Slovenia (-0.57). Portugal, Italy, and Greece suffer a further decline in their already negative index, which adds even more difficulties to the vulnerable situation of young people in these countries.

The third result is also a clear deterioration in the Social Inclusion index in almost all countries; the exceptions in this dimension being Bulgaria (0.64), Germany (0.58), and Poland (0.43). The greatest declines are shown in countries which lay in a middle position in 2007; specifically, Greece (-0.86), Spain (-0.56), Finland (-0.53), and France (-0.40).

In sum, these results show that during the Great Recession the educational policies promoted by the EU, and implemented by governments, yielded their fruits and that the educational conditions of young people in Europe have improved. In contrast, the labour situation of Europe's youth has deteriorated over this period in almost all countries. The increase in youth unemployment and the policies applied in an

effort to reduce it by introducing or extending precarious contracts in almost every country have worsened the labour prospects of Europe's youth. As a result of the worsening youth labour prospects, there has also been a decline in the level of youth social inclusion. In this general situation, two countries which show an improvement in the three dimensions stand out: Germany and Poland. Also noteworthy is the behaviour of the Czech Republic, the UK, Portugal, and Hungary with only a slight reduction in one dimension.

Another important aspect is the variation in the strong index during the period, i.e., in the state of the worst indicator by dimension, and globally, since it allows us to analyse individual progress in the main vulnerability facing each country's youth (Table 6). In this sense, the main movers in the global index were the Czech Republic and Estonia, with the two countries displaying a shift in totally opposite directions, the former being notably positive, and the latter markedly negative. The following countries that underwent significant changes are also two contrasting cases: Slovakia, Portugal and Latvia, which showed positive progress, and five countries which headed in a more negative direction: Finland, Italy, Spain, Netherlands, and Austria.

By dimensions, not all the countries that would have improved the value of the Education and Training weak index in the simulated situation in 2016 would also have improved their main vulnerability. In fact, the deterioration of the main youth vulnerability occurs primarily in Sweden, Greece, Spain, and France. In contrast, the Czech Republic and Ireland show the best results vis-à-vis improving their main vulnerability.

When focusing on the labour market dimension, Ireland, Latvia, and Luxemburg stand out for being the countries with the biggest drop in the strong index whereas the Czech Republic, Slovakia, and Sweden lie at the other end of the scale. Finally, the countries which experienced the biggest decline in the Social Inclusion strong index are Estonia, Spain, and Luxemburg. In this dimension, the positive figures are substantially lower and are led by Germany and Latvia.

The variation in the number of indicators at risk of vulnerability i.e. below the reservation level with an achievement function below -0.1, also provides us with important information concerning the progression of youth living conditions in each country during the period (Table 7). In this respect, the balance is not positive since during the crisis twelve countries experienced an increase in the number of said indicators, with Spain, Lithuania, Greece, France, Hungary, and the Netherlands heading the list, whereas ten countries underwent a drop in said number, with Poland, Portugal, and Latvia topping the list followed by the Czech Republic, Germany, and Romania.

To sum up, the overall evolution of youth living conditions during the period is reported in Table 5 and 6 by means of two commonly used descriptive measures calculated at the two moments considered: the mean and the coefficient of variation. The results show that the mean value of the global weak index remained constant and the relative dispersion around the mean, i.e. the heterogeneity among EU countries, increased slightly. Nevertheless, the analysis by dimensions shows greater variations with opposite signs. Specifically, whereas there was an improvement in the mean value of the weak Education index together with a reduction in the disparities among countries, the evolution of Labour Market and Social Inclusion indexes was negative showing a reduction in the mean value and a rise in the relative dispersion of the EU countries. Attending to the strong index, the results are slightly different because the worst evolution, in terms of the mean value, is for the Social Inclusion index, followed by the Labour Market. Also in terms of dispersion, the reduction in the variation coefficient, reflect a convergence among countries during the period.

Table 5: Weak index by dimensions and global in 2007 and simulated 2016

Table 6: Strong index by dimensions and global in 2007 and simulated 2016

Table 7: Number of indicators below the reservation level (vulnerabilities) by country and dimension in 2007 and simulated 2016

Figure 3: Classification of EU countries according to the weak index by dimensions and global in 2017.

## **6. Discussion and conclusions**

Although youth living conditions lie at the heart of the EU agenda, there is virtually no current index that allows it to be examined from a cross-country perspective. This paper proposes a synthetic index of youth living conditions in Europe in order to reflect the current position of each country and how it evolved during the recession period and to pinpoint directions for improvement. To do so, we introduce a multi-criteria approach based on the double reference point method. This double reference point method goes beyond the concepts of maximum and minimum values of the indicators and introduces a new perspective based on desirable and acceptable thresholds (called aspiration and reservation levels) to be achieved by each indicator. Progress in measuring youth living conditions depends on whether the value of the indicator is below the reservation level, between the reservation and aspiration levels, or above the aspiration level. In addition, rather than building a single synthetic index, for each dimension and country we build a pair of indexes that correspond to the paradigm of full substitutability among indicators (weak index) and null substitutability (strong index). The contribution of this method is that the comprehensive

analysis of the weak and strong indexes enables a more precise assessment of each country and the analysis of the factors that explain each situation, given that the results offer not only the country's ranking and how it has evolved over the period but also include the major vulnerabilities facing each country. In this way, we provide a more comprehensive analysis of youth from a cross-country perspective, which may prove useful for defining and evaluating youth policies at a country and European level.

Results show the existence of major imbalances between dimensions and within dimensions in many countries. As regards global aggregate performance, the countries showing the worst positions are Greece, Spain, Romania and Italy. At the other end of the scale are Austria, Germany, the Netherlands, Luxemburg, Baltic countries, the Czech Republic and Slovenia. Nonetheless, all countries, except Austria, show one or more vulnerability in at least one dimension, i.e. one aspect in which youth needs to be the focus of special attention.

The research also analyses the latest trends in youth living conditions over the period 2007-2016. In this respect, not all countries have enjoyed the same success in enhancing young people's living conditions. Results show that over the period there has been an improvement in Education and Training whereas cross-country divergences in terms of Labour Market and Social Inclusion have increased.

Behind this evolution lie variations in policy and institutional structures that play a key role in shaping opportunities for young people, particularly when there is a severe and widespread economic downturn. In this regard, countries' institutional configurations in the areas of education and training, active labour market policies (ALMPs), employment protection legislation (EPL) and welfare provision matter considerably in mediating the impact of the Great Recession on youth living conditions. Tables A3 to A5 of the Appendix give an idea of the country differences in terms institutional structures in these areas.

In line with existing evidence, well-integrated vocational educational and training systems (VET) with strong employer involvement and clear labour market connections together with supportive ALMPs have emerged as key institutional characteristics that have traditionally made possible the comparatively better performance in the school to work transition in Central Europe (particularly in Germany and the Netherlands) as well as in Scandinavian countries (Pohl and Walther, 2007; Schoon and Bynner, 2019). It is therefore no surprise that recent policy intervention on the part of European countries during the austerity period, including the Youth Guarantee initiative (YG), has focused on strengthening these two areas. In VET, the focus has primarily been on expanding apprenticeships as a transition route



and on increasing linkages between training systems and the labour market by enhancing employer involvement (European Commission, 2015; Green and Pensiero, 2017). This concurs with the need to fill the gap caused by the decline in manual (unskilled) jobs, which has been observed as a result of ever-increasing competition in the more globalised world which young people face today. In ALMP, policy intervention has centred on improving public employment service (PES) capacity and diversifying existing activation measures so as to provide more personalized support to unemployed youth, including NEETs (European Commission, 2016; Eichhorst and Rinne, 2014).

These areas of policy change could be viewed as a sign of convergence across countries in terms of their underlying logic of school to work transition. However, the extent to which such policy changes can become entrenched in other contexts depends to a great extent on existing institutional and coordination capacity, as well as the availability of resources. Indeed, introducing VET reforms at the policy design level is not sufficient to bring about deep-seated institutional change. This requires a change of mindset amongst training providers and employers, as well as increased partnership working between the two, which is by no means easy to achieve in countries that lack this tradition of cooperation, such as France, Eastern countries, Mediterranean countries, and English-speaking countries (European Commission 2016; International Labour Organization 2015b; O'Reilly et al., 2017). VET reforms also require strong and decided employer support in terms of offering an adequate supply of quality placements and related training as well as a shift in the attitude of young people and their families, whereby VET is not viewed as a second-best option (Eichhorst, 2015). As regards this latter issue, VET still suffers from a rather poor image in Mediterranean and Eastern countries and, to some extent, in the UK and Ireland (O'Reilly et al., 2017). In the same line, the lack of pre-existing institutional coordination infrastructures in many countries jeopardizes the success of efforts made to improve PES capacity and to establish effective partnership working between different agencies to engage difficult-to-reach youth (Eichhorst and Rinne, 2017).

Resource limitations, both fiscal and in terms of actors' capacity, have also proven to be a barrier to more deep-seated institutional change, possibly making the transfer of good practices across countries inherently difficult. In spite of EU funding, in most cases, although particularly in Greece, Portugal, Italy, Spain and some Eastern countries, reforms are being introduced against a backdrop of tight public finances and spending cuts, which undermines the effective implementation of policies such as the expansion of ALMPs and PES capacity (Smith at al., 2019).

Employment protection legislation has also emerged as a key factor which impacts youth living conditions. Differential levels of EPL between temporary and permanent employment have led many countries, particularly Mediterranean and central European countries, to entrenched labour market segmentation, with young people being increasingly confined to the labour market's temporary segment. Since 2010, many countries have sought to tackle segmentation by deregulating permanent contracts (Eichhorst, Marx, and Wehner, 2016). Despite being more evident in the most segmented countries, such as France and Spain, this has also occurred in better-performing countries like the Netherlands or Germany. While reducing segmentation, excessive flexibility can lead to low employment quality and high precariousness, as evidenced by the experience of Eastern countries and those with traditionally low EPL (the UK and Ireland). In this regard, existing evidence suggests that attempts to loosen EPL for permanent contracts in highly dualised labour markets (such as France and Spain) are likely to result in poorer working conditions and more unstable employment for all workers (Eichhorst and Rinne, 2014). Even countries which traditionally perform better in terms of youth transition, such as Germany, the Netherlands, and Scandinavian countries, seem to be coming under the microscope, with temporary, precarious employment rates increasing among young people, thus pointing to a potential convergence towards lower quality transition across the board (Hadjivassiliou et al. 2019). In this sense, balancing flexibility and security in youth labour markets represents a key challenge that is yet to be fully tackled in all countries.

Another crucial element which shapes youth living conditions is their access to the welfare system; in other words, the role played by the state in providing income support to young people while they are studying or are unemployed. This has to do with another of the trends affecting the living conditions of young people at the present time and which is commented on in section 2; namely, the moment when young people leave the parental home. In this regard, differences appear because in some countries, young people are considered to be individualized social citizens; that is, fully-fledged members of the welfare regime with access to social benefits (the UK, Ireland and Scandinavian countries) whereas in other countries young people are seen as being dependent on their parents (familiarized social citizens) and can only access benefits indirectly as dependants (Mediterranean and central Europe) (Chevalier, 2016). Evidence shows that when families have sufficient resources they can cushion the effects of economic crises on their young adult children. Somewhat surprisingly, during the Great Recession, youth in Scandinavian countries were at greater risk of poverty than those in southern Europe (Mont' alva,

Mortimer and Jonhson, 2017). Although southern European countries have weaker welfare states, the high number of young people still living with their parents meant less chance of them entering poverty. In the same line, Groh-Samberg and Voges (2014) argue that German youth's chances of becoming poor are diminished by intergenerational assistance, whether in times of economic recession or not. They find that leaving the parental household and becoming unemployed increases the risk of poverty, but that the standard measurement of poverty exaggerates its impact among the young who have left the parental home. When potential help, in the form of cash transfers, from parents is accounted for, youth's risk of poverty diminishes significantly.

Finally, we wish to highlight that although institutional configurations are very important in shaping youth living conditions, countries' performance is also shaped to a major degree by macroeconomic trends, particularly by levels of demand for youth labour. In this vein, divergence between countries in economic performance accounts for many of the differences observed regarding the performance of youth labour markets (European Central Bank, 2014). For example, the comparatively positive performance of the Polish youth labour market is largely explained by the fact that Poland did not fall into recession. Likewise, Germany, Austria, Luxemburg, the Netherlands, and Scandinavian countries as well as certain Eastern countries started to pull out of the recession relatively sooner compared to the remaining countries. Thus, in countries in which youth labour demand remains low, policy interventions that focus solely on the supply side or that encourage flexibility will remain limited in their effectiveness.

In sum, although there is evidence of convergence in policy instruments across countries, differential performance persists due to a combination of institutional and macroeconomic factors, together with a worrying common trend of progressive deterioration in the quality of youth transitions across the board. Moreover, the recent economic crisis has led to a more complex picture that makes it more difficult to group countries, given the increasing hybridization of the well-established youth transition regimes (Pohl and Walther 2007; Chevalier 2016; Hadjivassiliou et al. 2019). The overall picture to emerge is thus one in which policy changes aimed at strengthening supportive policy instruments—such as expanding ALMP and PES capacity and strengthening VET systems—are currently limited in their scope and potential effectiveness. At the same time, the trend towards the liberalization and deregulation of protective institutions, such as EPL, are making young people's transitions potentially more unstable. Based on this complex picture of uncertainty, there is a need to reintegrate the concept of

quality into policies that address young people's careers and to develop multi-focused strategies that will ensure successful lives for young people.

By way of a final word, we would like to point out that our study is subject to several limitations which, in turn, also offer opportunities for future research. First, although our results, which stem from aggregate macro-level data, highlight differences and similarities between countries and provide pointers as to how the recession was experienced and what policies were implemented to mitigate adverse changes, individual data at a national level would enable an assessment of how the inequalities observed at a macro level are distributed across social class, sex and origin. Second, we have restricted the analysis to the main dimensions which shape youth living conditions in terms of their professional affirmation. Further research into other aspects which are of increasing importance in the lifestyle of youth, such as social and political participation or physical and psychological health, would undoubtedly provide insights into new forms of youth inequalities in Europe.

## References

- Ayres-Wearne, Valerie. 2001. A national youth policy: Achieving sustainable living conditions for all young people. *Growth*, No. 49, 7-15. In Hancock et al. *Future directions in Australian social policy: New ways of preventing risk*, CEDA.
- Bell, David N.F. and David G. Blanchflower. 2011. Young people and the Great Recession. *Oxford Review of Economic Policy* 27 (2): 241-267. doi:10.1093/oxrep/grr011
- Benedicto, Jorge. 2008. Young people and politics: disconnected, sceptical, alternative or all of it at the same time? *Revista de Estudios de Juventud* [online], 81: 13-27.
- Bessant, Judith, Rys Farthing, and Rob Watts. 2017. *The precarious generation. A political economy of young people*. Routledge, Taylor & Francis Group.
- Blossfeld, Hans-Peter, Erik Klijzing, Melinda Mills, and Karin Kurz. (eds). 2005. *Globalization, uncertainty and youth in society*, London: Routledge.
- Boccuzzo, Giovanna, and Martina Gianecchini. 2015. Measuring young graduates' job quality through a composite indicator. *Social Indicators Research* 122: 453-478.
- Castellano, Rosalia, and Rocca, Antonella. 2014. Gender gap and labour market participation. A composite indicator for the ranking of European countries. *International Journal of Manpower* 35 (3): 345-367.
- Castellano, Rosalia, and Rocca, Antonella. 2015. Assessing the gender gap in labour market index:

- volatility of results and reliability, *International Journal of Social Economics* 42 (8):749-772.
- Chaaban, Jad M. 2009. Measuring youth development: A nonparametric cross-country Youth Welfare Index. *Social Indicators Research* 93:351-358.
- Chevalier, Tom. 2016. Varieties of youth welfare citizenship: Towards a two-dimension typology. *Journal of European Social Policy* 1-17.
- Commonwealth Secretariat. 2016. *Global youth development index and report*. London: Commonwealth Secretariat.
- Côté, J. 2014. Towards a new political economy of youth. *Journal of Youth Studies* 17: 527-543.
- Council of Europe. 2003. Experts on Youth Policy Indicators. Strasbourg: Council of Europe.
- Dvouletý, Ondrej, Monika Mühlböck, Julia Warmuth, and Bernhard Kittel. 2018. 'Scarred' young entrepreneurs. Exploring young adults' transition from former unemployment to self-employment. *Journal of Youth Studies* 21: 1159-1181.
- Ecorys. 2011. *Assessing practices for using indicators in fields related to youth*. Final Report for the European Commission. DG Education and Culture. Birmingham: Ecorys.
- Eichhorst, Werner. 2015. Does Vocational Training Help Young People Find a (Good) Job? *IZA World of Labor*. <https://wol.iza.org/articles/does-vocational-training-help-young-people-find-good-job/long>
- Eichhorst, Werner, Paul Marx, and Caroline Wehner. 2016. Labor market reforms in Europe: Towards more flexicure labor markets? IZA Discussion Paper 9863. Bonn: Institute for the Study of Labor.
- Eichhorst, Werner, and Ulf Rinne. 2014. Promoting Youth Employment Through Activation Strategies. *ILO Employment Working Paper* 163. Geneva: International Labour Office.
- Eichhorst, Werner, and Ulf Rinne. 2017. The European Youth Guarantee: A Preliminary Assessment and Broader Conceptual Implications." *IZA Policy Paper* 128. Bonn: Institute for the Study of Labor.
- Eurofound. 2014. *Social situation of young people in Europe*. Luxembourg: Publications Office of the European Union.
- Eurofound. 2014. *Mapping Youth Transitions in Europe*. Luxembourg: Publications Office of the European Union.
- European Central Bank. 2014. The Impact of the Economic Crisis on Euro Area Labour Markets. *ECB Monthly Bulletin* 2014 (October).

- European Commission. 2011. *Commission Staff Working Document: On EU indicators in the field of youth*. Brussels, 25.03.2011, SEC(2011) 401 final. Available online at: [http://ec.europa.eu/youth/library/publications/indicatordashboard\\_en.pdf](http://ec.europa.eu/youth/library/publications/indicatordashboard_en.pdf)
- European Commission. 2015. *Education and Training Monitor*. Luxembourg: European Union.
- European Commission. 2016. *The Youth Guarantee Country by Country*. Brussels: European Commission. Available online at: <http://ec.europa.eu/social/main.jsp?catId=1161>
- European Commission. 2018. *European Youth Report*. Flash Eurobarometer 455. Retrieved February 15, 2018 from <http://ec.europa.eu/commfrontoffice/publicopinion>
- Furlong, Andy. 2010. Transitions from education to work: New perspectives from Europe and beyond, *British Journal of Sociology of Education*, 31(4): 515–18. doi: 10.1080/01425692.2010.484926
- Giambona, Francesca, and Erasmo Vassallo. 2014. Composite indicator for social inclusion for European countries. *Social Indicators Research* 116: 269-293.
- Goldin, Nicole, Payal Patel, and Katherine Perry. 2014. *The Global Youth Wellbeing Index*. Washington, DC: Center for Strategic and International Studies.
- Greco, Salvatore, Ishizaka, Alessio, Tasiou, Menelaos, and Torris, G Gianpiero. 2019. On the methodological framework of composite indices: A review of the issues of weighting, aggregation, and robustness. *Social Indicators Research* 141: 61-94
- Green, Andy. 2017. *The crisis for young people. Generational inequalities in education, work, housing and welfare*. Palgrave.
- Green, Andy and Nicola Pensiero. 2017. Comparative Perspectives: Education and Training System Effects on Youth Transitions and Opportunities In: Schoon, Ingrid and John Bynner. (eds). 2017. *Young people's development and the Great Recession: Uncertain transitions and precarious futures*, Cambridge: Cambridge University Press: 75-100.
- Groh-Samberg, Olaf, and Wolfgang Voges. 2014. Precursors and consequences of youth poverty in Germany. *Longitudinal and Life Course Studies* 5: 151–172.
- Hadjivassiliou, Kari, Laura Kirchner Sala, and Stefan Speckesser. 2015. *Key indicators and drivers of youth unemployment*, STYLE Working Papers, WP3.1. CROME, University of Brighton, Brighton. Available at <http://www.style-research.eu/publications/working-papers>
- Hadjivassiliou, Kari, Arianna Tassinari, Werner Eichhorst, and Florian Wozny. 2019. How does the performance of school-to-work transition regimes vary in the European Union? In O'Reilly et al.

- (eds) *Youth labor in transition. Inequalities, mobility, and policies in Europe*. New York: Oxford University Press: 71-103.
- Hadju, Gábor and Endre Sik. 2017. Are young people's work values changing? in O'Reilly et al. (eds) *Youth employment STYLE handbook*, Bristol. UK.
- Hancock, Linda, Brian Howe, Marion Frere, and Anthony O'Donnell. 2001. *Future directions in Australian social policy: New ways of preventing risk*. CEDA.
- International Labour Organization. 2013. *Global trends for youth 2013: A generation at risk*. Geneva: ILO.
- International Labour Organization. 2015a. *Global employment trends for youth 2015: Scaling up investments in decent jobs for youth*. Geneva: ILO.
- International Labour Organization. 2015b. The Youth Guarantee Program in Europe: Features, Implementation and Challenges. *Working Paper 4*. Geneva: ILO Research Department.
- Khan, Lisa B. 2010. The long-term labour market consequences of graduating from college in a bad economy. *Labour Economics* 17 (2): 303-316.
- Leccardi, Carmen. 2017. The recession, young people, and their relationship with the future in Schoon and Bynner (eds). *Young people's development and the Great Recession: Uncertain transitions and precarious futures*, Cambridge: Cambridge University Press: 348-371
- Leschke, Janine and Mairéad Finn. 2019. Labour market flexibility and income security: changes for European youth during the Great Recession in O'Reilly et al. (eds) *Youth labor in transition. Inequalities, mobility and policies in Europe*, New York: Oxford University Press: 132-162.
- Luque, Mariano, Kaisa Miettinen, Petri Eskelinen, and Francisco Ruiz. 2009. Incorporating preference information in interactive reference point methods for multiobjective optimization. *Omega International Journal of Management Science* 37 (2): 450-462.
- Luque, Mariano, Kaisa Miettinen, Ana Belen Ruiz, and Francisco Ruiz. 2012. A two-slope achievement scalarizing function for interactive multiobjective optimization. *Computers & Operations Research* 39: 1673-1681
- Luque, Mariano, Salvador Pérez-Moreno, and Beatriz Rodríguez. 2016. Measurement human development: A multi-criteria approach. *Social Indicators Research* 125: 713-733.
- Macdonald, Fiona and Sonya Holm. 2001. Employment for 25- to 34- year-olds in the flexible labour market: A generation excluded? *Growth*, No. 49, 16-24.

- Mazzotta, Fernanda and Lavinia Parisi. 2019. Stuck in the parental nest? The effect of the economic crisis on young Europeans' living arrangements, in O'Reilly et al. (eds) *Youth labor in transition. Inequalities, mobility and policies in Europe*, Oxford University Press: 334-357.
- Mitchell, Richard, Jill Murray and Anthony O'Donnell. 2001. Labour law and a new social settlement, *Growth*, No. 49, 66-74.
- Mont'alvao, Arnaldo, Jeyland T. Mortimer and Monica Kirkpatrick Johnson. 2017. The Great Recession and Youth Labor Market Outcomes in International Perspective. In: Schoon, Ingrid and John Bynner. (eds). *Young people's development and the Great Recession: Uncertain transitions and precarious futures*, Cambridge: Cambridge University Press: 52-75.
- Moreno Mínguez, Almudena and Isabella Crespi. 2017. Future perspectives on work and family dynamics in Southern Europe: the importance of culture and regional contexts, *International Review of Sociology*, 27:3, 389-393.
- Nardo, Michela, Saisana, Michaela, Saltelli, Andrea, and Tarantola, Stefano. 2005. Tools for Composite Indicators Building, Institute for the Protection and Security of the Citizen, European Commission. EUR 21682 EN, European Communities
- Navarro Jurado, E., M. Tejada Tejada, F. Almeida García, J. Cabello González, R. Cortés Macías, J. Delgado Peña et al. 2012. Carrying capacity assessment for tourist destinations. Methodology for the creation of synthetic indicators applied in a coastal area. *Tourism Management* 33 (6): 1337-1346.
- Nico, Magda. 2009. Youth lifestyles and living conditions policy framework, youth policy topics, European Knowledge Centre for Youth Policy EKCYP of the partnership programme between the Council and the European Commission in the field of youth.
- OECD. 2008. *Handbook on constructing composite indicators. Methodology and user guide*. Paris: OECD.
- O'Reilly, Jacqueline, Werner Eichhorst, Andrés Gábos, Kari Hadjivassiliou, David Lain, Janine Leschke, Seamus McGuinness, et al. 2015. Five characteristics of youth unemployment in Europe: Flexibility, education, migration, family legacies, and EU policy. *SAGE Open* 5 (1). doi:10.1177/2158244015574962.
- O'Reilly, Jacqueline, Clémentine Moyart, Tiziana Nazio, and Mark Smith. 2017. *Youth employment: STYLE handbook*. Bristol, UK: STYLE.



- O'Reilly, Jacqueline, Janine Leschke, Renate Ortlieb, Martin Seeleib-Kaiser, and Paola Villa. (eds) (2019) *Youth labor in transition. Inequalities, mobility and policies in Europe*, New York: Oxford University Press.
- Ortlieb, Renate, Maura Sheehan, and Jaan Masso. 2019. Do business start-ups create high-quality jobs for young people? In O'Reilly et al. (eds). *Youth labor in transition: Inequalities, mobility and policies in Europe*, New York: Oxford University Press: 597-625.
- Pérez-Moreno, Salvador, Beatriz Rodríguez, and Mariano Luque. 2016. Assessing global competitiveness under multi-criteria perspective. *Economic Modelling* 53: 398-408.
- Pohl, Axel, and Andreas Walther. 2007. Activating the Disadvantaged. Variations in Addressing Youth Transitions Across Europe. *International Journal of Lifelong Education* 26 (5): 533-53.
- Pulido-Fernández, Juan Ignacio, and Beatriz Rodríguez-Díaz. 2016. Reinterpreting the World Economic Forum's global competitiveness index. *Tourism Management Perspectives* 20: 131-140.
- Ruiz, Francisco, Cabello, Jose M., and Luque, Mariano 2011. "An application of reference point techniques to the calculation of synthetic sustainability indicators." *Journal of the Operational Research Society*, 62, 189-197.
- Saisana, Michaela, Tarantola, Stefano, and Saltelli, Andrea. 2005. Uncertainty and sensitivity techniques as tools for the analysis and validation of composite indicators, *Journal of the Royal Statistical Society A*, 168(2), 1-17.
- Schoon, Ingrid and John Bynner. (eds). 2017. *Young people's development and the Great Recession: Uncertain transitions and precarious futures*, Cambridge: Cambridge University Press. doi: 10.1017/9781316779507
- Schoon, Ingrid and John Bynner. 2019. Young people and the Great Recession: Variations in the school-to-work transition in Europe and the United States, *Longitudinal and Life Course Studies*, 10 (2): 153-173.
- Serrano Pascual, Amparo, and Paz Martín Martín. 2017. From 'employability' to 'entrepreneuriality' in Spain: youth in the spotlight in times of crisis. *Journal of Youth Studies* 20: 798-821.
- Smith, Mark and Paola Villa. 2017. Flexicurity policies to integrate youth before and after the crisis in O'Reilly et al. (eds) *Youth employment STYLE handbook*, Bristol. UK.
- Smith, Mark, Janine Leschke, Helen Russell, and Paola Villa. 2019. Stressed economies, distressed policies, and distraught young people: European policies and outcomes from a youth perspective.

- in: O'Reilly et al. (eds.) *Youth labor in transition. Inequalities, mobility, and policies in Europe*.  
New York: Oxford University Press: 104-131.
- Sukarieh, Mayssoun and Stuart Tannock. 2016. On the political economy of youth: a comment.  
*Journal of Youth Studies* 19: 1281-1289.
- Wierzbicki, Andrzej P. 1980. The use of reference objectives in multiobjective optimization. In  
*Multiple Criteria Decision Making Theory and Application*, 468-486. Berlin: Springer.
- Wierzbicki, Andrzej P., Marek Makowski, and Jaap Wessels, eds. 2000. *Model-based decision support  
methodology with environmental applications*. Dordrecht: Kluwer Academic Publishers.
- Wolbers, Maarten H.J. 2016. A generation lost?: Prolonged effects of labour market entry in times of  
high unemployment in the Netherlands. *Research in Social Stratification and Mobility* 46, Part A:  
51-59.
- Woodman, Dan and Johanna Wyn. 2014. *Youth and generation: rethinking change and inequality in the  
lives of young people*. London: Sage.
- Wyn, Johanna and Dan Woodman. 2006. Generation, youth and social change in Australia, *Journal of  
Youth Studies* 9(5): 495-514.

## Appendix

Table A1: Robustness Check. Final country ranks in 2016

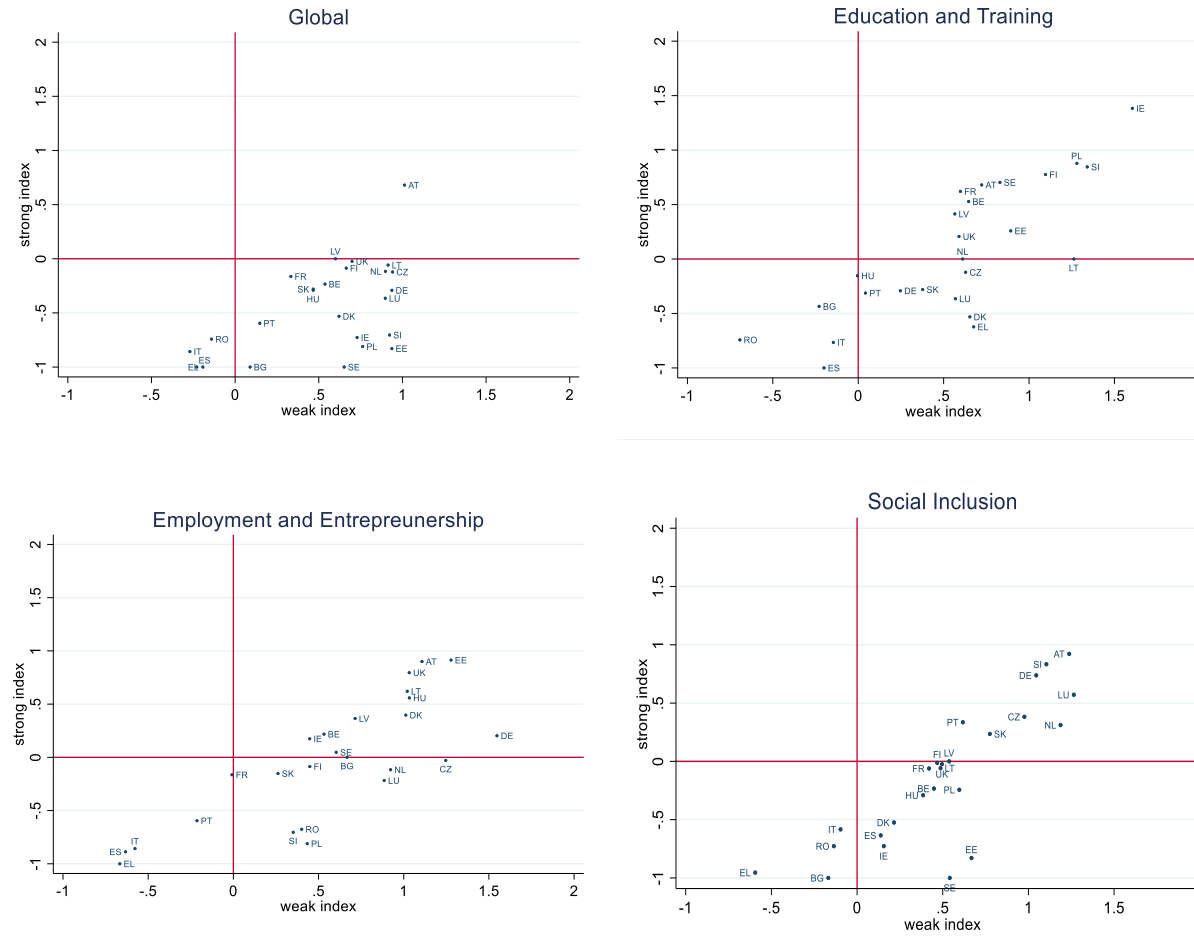
Table A2: Achievement scalarizing function in 2007 and simulated 2016

Table A3: Labour Market Policies Expenditures by type of action (Million euro at constant 2010 prices)

Table A4: Expenditure on vocational education and training (VET) and total educational expenditure  
(Million constant prices (2015) and constant PPP)

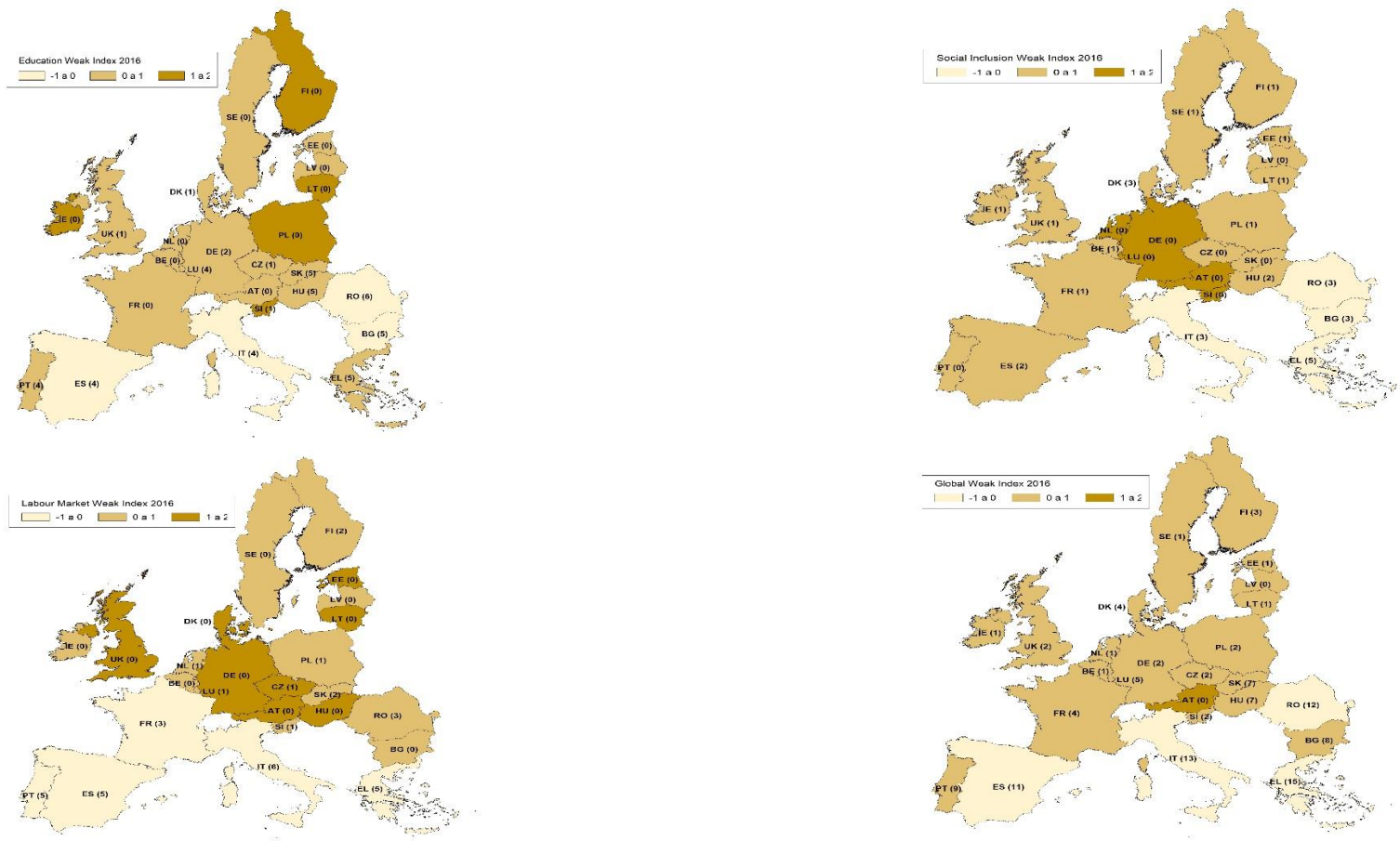
Table A5: Strictness of Employment Protection Index

Figure 1: County weak and strong indexes by dimensions and global in 2016



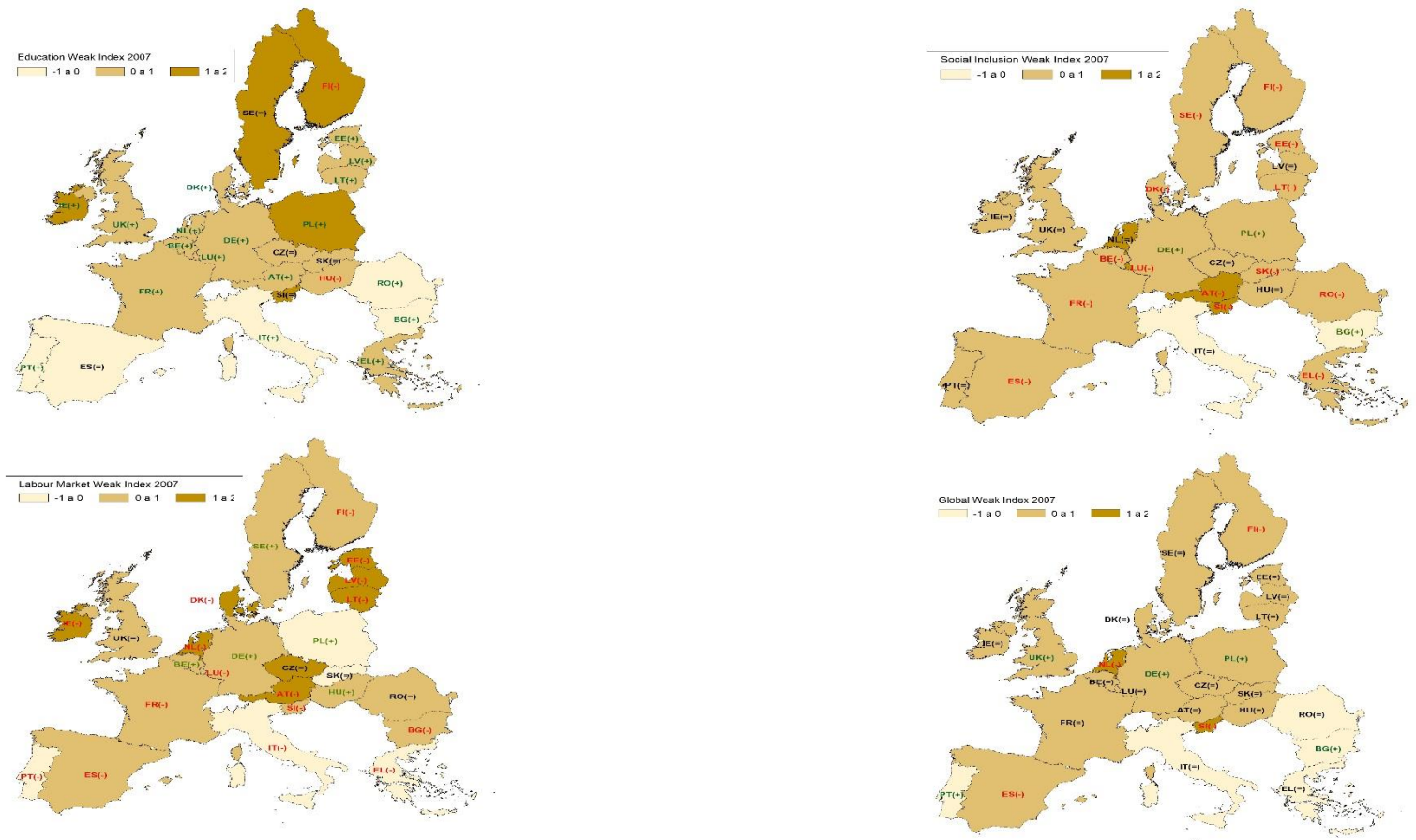
See Table 3 for country name abbreviations.  
Source: Own elaboration

Figure 2. Classification of EU countries according to the weak index by dimensions and global and number of vulnerabilities (in brackets) in 2016



In brackets number of vulnerabilities  
 Source: Own elaboration

Figure 3. Classification of EU countries according to the weak index by dimensions and global in 2007



In brackets the sign of the change between 2007 and simulated 2016  
Source: Own elaboration

Table 1: List of indicators by dimensions

Dimension	Indicator	Definition	Source	Year	Type*
Education and Training	Early leavers from education and training	Share of the population aged 18-24 with at most lower secondary education and who is no longer in education or training	Eurostat, EU-LFS	2007, 2016	-
	Low achievers in reading	Share of 15-year olds who are below proficiency level 2 on the PISA scales for reading	OECD – PISA	2006, 2015	-
	Low achievers in science	Share of 15-year olds who are below proficiency level 2 on the PISA scales for science	OECD – PISA	2006, 2015	-
	Low achievers in maths	Share of 15-year olds who are below proficiency level 2 on the PISA scales for maths	OECD – PISA	2006, 2015	-
	Tertiary education attainment	Share of population aged 30-34 with tertiary education attainment	Eurostat, EU-LFS	2007, 2016	+
	Upper secondary education completed	Percentage of the population 20-24 having completed at least upper secondary education (ISCED level 3c long)	Eurostat, EU-LFS	2007, 2016	+
Labor Market and Entrepreneurship	Youth unemployment rate	Share of unemployed among active population (employed and unemployed) aged 15-29	Eurostat, EU-LFS	2007, 2016	-
	Long-term youth unemployment rate	Share of unemployed youth 15-24 without a job for the last 12 months or more among all unemployed in this age-group.	Eurostat, EU-LFS	2007, 2016	-
	Youth unemployment ratio	Share of unemployed among the total population (employed, unemployed and inactive), aged 15-29	Eurostat, EU-LFS	2007, 2016	-
	Youth self-employment rate	Percentage of self-employed among all employed aged 20-24 and 25-29	Eurostat, EU-LFS	2007, 2016	+
	Youth temporary employment rate	The share of young employees (age 20-29) who are on a contract of limited duration	Eurostat, EU-LFS	2007, 2016	-
	Youth involuntary part-time employment rate	The share of young employees (age 20-29) who are on involuntary part time contracts	Eurostat, EU-LFS	2007, 2016	-
Social Inclusion	At risk of poverty rate	The share of young people (15-29) living in families with an equivalised disposable income below 60 % of the national median equivalised disposable income (after social transfers). Percentage of the population (15-29) that cannot afford at least four of the following nine items: 1) to pay their rent, mortgage or utility bills; 2) to keep their home adequately warm; 3) to face unexpected expenses; 4) to eat meat or proteins regularly; 5) to go on holiday; or cannot afford to buy a: 6) TV 7) Refrigerator. 8) Car. 9) Telephone.	Eurostat, EU-SILC	2007, 2016	-
	Severe material deprivation rate	People (18-24) living in households with very low work intensity are people aged 0-59 living in households where adults worked less than 20 % of their total work potential during the	Eurostat, EU-SILC	2007, 2016	-
	Young people living in households with low work intensity	Self-reporting unmet need for medical care for the following 3 reasons: financial barriers + too far to travel + waiting times.	Eurostat, EU-SILC	2007, 2016	+
	Young people with no unmet medical needs	Young people (age group (15-24) not in employment, nor in any education or training.	Eurostat, EU-LFS	2007, 2016	-
	Young people not in employment, education or training (NEET)				

\* (-) indicates “the less, the better”; (+) “the more, the better”.

Source: Own elaboration

Table 2: Achievement scalarizing function in 2016

2016		BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	LV	LT	LU	HU	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	Q1 <sup>(a)</sup>	Q3 <sup>(b)</sup>	weights
Education and Training	Early leavers from education and training	0.52	-0.33	1.00	0.87	0.20	0.07	1.22	1.22	-1.00	0.52	-0.33	0.26	2.00	1.61	-0.15	0.70	0.93	1.78	-0.36	-0.94	1.94	0.83	0.72	0.83	0.00	6.60	11.20	0.23
	Low achievers in reading	0.63	-1.00	0.35	1.20	1.00	1.93	2.00	-0.13	1.00	0.40	0.46	0.83	0.00	-0.03	-0.15	0.79	0.29	1.30	0.89	-0.83	1.18	-0.43	1.85	0.75	0.81	16.20	25.10	0.10
	Low achievers in science	0.64	-0.96	0.52	1.13	1.00	2.00	1.21	-0.58	0.83	0.34	0.19	0.97	0.00	-0.09	-0.09	0.81	0.51	1.09	0.95	-1.00	1.24	-0.43	1.67	0.40	0.95	17.00	24.70	0.10
	Low achievers in maths	0.65	-1.00	0.45	1.60	1.00	2.00	1.37	-0.62	0.39	0.23	0.26	0.49	0.00	-0.02	-0.22	1.08	0.44	1.00	0.20	-0.87	1.18	-0.14	1.60	0.56	0.43	17.20	25.40	0.10
	Tertiary education attainment	0.96	0.00	-0.12	1.13	-0.07	0.94	1.51	0.72	0.51	0.80	-0.93	0.73	2.00	1.67	-0.10	0.97	0.51	0.88	0.07	-1.00	0.85	-0.28	1.00	1.39	1.17	33.80	46.10	0.19
	Upper secondary education completed	0.53	0.49	1.00	-0.53	-0.29	0.36	2.00	1.35	-1.00	0.79	0.05	0.47	1.46	-0.36	0.33	0.00	0.99	1.26	-0.31	-0.06	1.28	1.17	0.79	0.70	0.52	80.50	89.60	0.28
Laboral Market and Entrepreneurship	Youth unemployment rate	0.22	0.60	1.68	0.82	2.00	1.00	0.27	-1.00	-0.78	-0.13	-0.56	0.40	0.93	0.89	1.24	1.37	1.21	0.67	-0.23	0.44	0.15	0.00	0.00	0.35	1.18	10.00	15.50	0.21
	Long-term youth unemployment	0.29	0.00	0.95	1.92	1.54	0.91	0.45	-1.00	-0.28	0.17	-0.67	0.52	0.62	0.88	0.76	1.38	1.15	0.64	-0.01	-0.04	0.22	-0.15	1.54	2.00	1.00	2.20	8.00	0.21
	Youth unemployment ratio	0.70	1.32	2.00	0.37	2.00	1.00	0.13	-1.00	-0.93	-0.10	-0.32	0.33	1.23	1.23	1.68	0.87	0.90	0.87	-0.18	0.90	0.40	0.30	-0.09	0.00	0.87	6.00	9.00	0.20
	Youth self-employment rate	0.31	0.67	-0.03	1.82	2.00	1.00	1.45	-0.07	0.44	0.95	-0.74	0.31	0.00	-0.22	0.97	0.26	1.55	0.10	0.74	-1.00	1.45	-0.23	0.72	1.09	0.44	2.40	6.30	0.04
	Youth temporary employment rate	0.63	1.57	0.68	0.23	0.20	1.72	0.82	0.63	-1.00	0.00	-0.29	1.79	1.93	0.63	0.95	-0.12	1.00	-0.81	-0.78	2.00	-0.70	0.89	0.14	0.11	1.52	13.40	35.60	0.16
	Youth involuntary part-time employment rate	0.95	0.00	1.03	1.41	1.62	2.00	0.45	-0.80	-0.45	-0.19	-1.00	0.87	0.78	0.98	0.48	1.00	1.16	0.62	-0.17	-0.79	1.38	0.56	0.52	0.28	0.77	18.50	51.50	0.18
Social Inclusion	At risk of poverty rate	0.93	-0.08	2.00	-0.68	0.64	1.12	0.61	-0.35	-0.83	0.72	-0.03	1.25	0.57	0.51	1.00	0.56	0.97	0.59	0.41	-1.00	1.39	1.49	0.65	0.00	1.00	17.60	25.10	0.16
	Severe material deprivation rate	0.56	-1.00	0.81	1.04	1.00	1.09	0.36	-0.84	0.41	0.79	-0.08	0.00	-0.06	1.74	-0.34	1.48	0.99	0.49	0.23	-0.68	0.83	0.27	1.48	2.00	0.58	3.80	11.60	0.19
	Households with low work intensity	-0.23	0.42	1.00	-0.09	1.30	1.90	-0.73	-1.00	-0.60	0.43	0.00	1.40	0.42	0.57	1.30	0.31	0.92	2.00	0.75	0.82	1.00	1.70	-0.01	0.57	0.21	6.50	14.20	0.21
	No unmet medical needs	0.65	0.76	0.38	-0.52	1.33	-0.83	0.65	-0.76	1.00	-0.06	0.24	0.00	1.00	1.33	0.21	1.67	2.00	-0.24	0.59	0.62	1.33	0.24	0.24	-1.00	0.85	95.60	99.00	0.22
	NEET	0.45	-1.00	0.95	1.19	0.85	0.30	0.00	-0.01	0.45	0.35	-0.58	0.20	0.45	2.00	-0.13	1.75	1.19	0.20	1.00	-0.70	1.00	0.35	0.15	1.19	-0.02	4.10	6.10	0.22

<sup>(a)</sup>First quartile, reservation level; <sup>(b)</sup> Third quartile: aspiration level; Weights calculated by principal component analysis;

Shaded dark grey cells indicate achievement function below 0; light grey between 0 and 1; white above 1.

See Table 3 for country name abbreviations.

Source: Own elaboration



Table 3: Country values and rankings of weak and strong indexes by dimensions and global in 2016

		Weak index								Strong index							
		Education and Training		Labour Market		Social Inclusion		Global		Education and Training		Labour Market		Social Inclusion		Global	
		Value	Rank	Value	Rank	Value	Rank	Value	Rank	Value	Rank	Value	Rank	Value	Rank	Value	Rank
Belgium	BE	0.65	11	0.53	14	0.45	16	0.54	16	0.53	8	0.22	8	-0.23	14	-0.23	9
Bulgaria	BG	-0.23	24	0.67	12	-0.17	24	0.09	21	-0.43	20	0.00	12	-1.00	25	-1.00	24
Czech Republic	CZ	0.63	12	1.25	3	0.98	6	0.94	2	-0.12	14	-0.03	13	0.38	5	-0.12	7
Denmark	DK	0.65	10	1.01	8	0.22	19	0.62	14	-0.53	21	0.40	6	-0.52	17	-0.53	14
Germany	DE	0.25	19	1.55	1	1.05	5	0.94	3	-0.29	17	0.20	9	0.74	3	-0.29	12
Estonia	EE	0.89	6	1.28	2	0.67	8	0.94	4	0.26	10	0.91	1	-0.83	22	-0.83	20
Ireland	IE	1.61	1	0.45	16	0.16	20	0.73	10	1.38	1	0.17	10	-0.73	21	-0.73	17
Greece	EL	0.68	9	-0.67	25	-0.59	25	-0.19	23	-0.62	22	-1.00	25	-0.95	23	-1.00	24
Spain	ES	-0.20	23	-0.63	24	0.14	21	-0.23	24	-1.00	25	-0.89	24	-0.63	19	-1.00	24
France	FR	0.60	14	-0.01	21	0.42	17	0.33	19	0.62	7	-0.16	17	-0.06	13	-0.16	8
Italy	IT	-0.15	22	-0.58	23	-0.10	22	-0.27	25	-0.77	24	-0.86	23	-0.58	18	-0.86	21
Latvia	LV	0.57	17	0.71	11	0.54	12	0.60	15	0.41	9	0.37	7	0.00	9	0.00	2
Lithuania	LT	1.26	4	1.02	7	0.49	14	0.91	6	0.00	13	0.62	4	-0.06	12	-0.06	4
Luxembourg	LU	0.57	16	0.89	10	1.26	1	0.90	8	-0.36	19	-0.22	18	0.57	4	-0.36	13
Hungary	HU	0.00	21	1.03	5	0.39	18	0.47	18	-0.15	15	0.56	5	-0.29	16	-0.29	11
Netherlands	NL	0.61	13	0.92	9	1.19	3	0.90	7	0.00	13	-0.12	15	0.31	7	-0.12	6
Austria	AT	0.72	8	1.11	4	1.24	2	1.01	1	0.68	6	0.90	2	0.92	1	0.68	1
Poland	PL	1.28	3	0.43	17	0.60	10	0.76	9	0.88	2	-0.81	22	-0.24	15	-0.81	19
Portugal	PT	0.04	20	-0.21	22	0.62	9	0.15	20	-0.31	18	-0.60	19	0.34	6	-0.60	15
Romania	RO	-0.69	25	0.40	18	-0.14	23	-0.14	22	-0.74	23	-0.68	20	-0.73	20	-0.74	18
Slovenia	SI	1.34	2	0.35	19	1.10	4	0.92	5	0.85	3	-0.70	21	0.83	2	-0.70	16
Slovakia	SK	0.38	18	0.26	20	0.77	7	0.47	17	-0.28	16	-0.15	16	0.24	8	-0.28	10
Finland	FI	1.10	5	0.45	15	0.47	15	0.66	12	0.78	4	-0.09	14	-0.01	10	-0.09	5
Sweden	SE	0.83	7	0.60	13	0.54	11	0.65	13	0.70	5	0.05	11	-1.00	25	-1.00	24
United Kingdom	UK	0.59	15	1.03	6	0.50	13	0.70	11	0.21	11	0.80	3	-0.02	11	-0.02	3

Shaded dark grey cells indicate value below 0; light grey between 0 and 1; white above 1.

Source: Own elaboration

Table 4: Country indicator associated to strong index (main vulnerability) by dimensions in 2016

	Education and Training	Labour Market and Entrepreneurship	Social Inclusion
Belgium	Upper Secondary Education	Unemployment Rate	<b>Households low work intensity</b>
Bulgaria	<b>Low achievers in maths</b>	Long Term Unemp.	<b>NEET</b>
Czech Republic	<b>Tertiary Education</b>	<b>Self Employment</b>	No unmeet medical needs
Denmark	<b>Upper Secondary Education</b>	Unemployment ratio	<b>No unmeet medical needs</b>
Germany	<b>Upper Secondary Education</b>	Temporary Contracts	At risk of poverty
Estonia	Early School Leavers	Long Term Unemp.	<b>No unmeet medical needs</b>
Ireland	Early School Leavers	Unemployment ratio	<b>Households low work intensity</b>
Greece	<b>Low achievers in maths</b>	<b>Unemployment rate</b>	<b>Households low work intensity</b>
Spain	<b>Upper Secondary Education</b>	<b>Unemployment ratio</b>	<b>At risk of poverty</b>
France	Early School Leavers	<b>Involuntary part-time</b>	<b>No unmeet medical needs</b>
Italy	<b>Tertiary Education</b>	<b>Involuntary part-time</b>	<b>NEET</b>
Latvia	Early School Leavers	Unemployment ratio	No unmeet medical needs
Lithuania	Low Achievers Maths	Long Term Unemp.	<b>Severe material deprivation</b>
Luxembourg	<b>Upper Secondary Education</b>	<b>Self Employment</b>	Households low work intensity
Hungary	<b>Early School Leavers</b>	Involuntary part-time	<b>Severe material deprivation</b>
Netherlands	Upper Secondary Education	<b>Temporary Contracts</b>	Households low work intensity
Austria	Tertiary Education	Unemployment ratio	Households low work intensity
Poland	Tertiary Education	<b>Temporary Contracts</b>	<b>No unmeet medical needs</b>
Portugal	<b>Upper Secondary Education</b>	<b>Temporary Contracts</b>	Severe material deprivation
Romania	<b>Early School Leavers</b>	<b>Involuntary part-time</b>	<b>At risk of poverty</b>
Slovenia	Tertiary Education	<b>Temporary Contracts</b>	Severe material deprivation
Slovakia	<b>Upper Secondary Education</b>	<b>Long Term Unemp.</b>	No unmeet medical needs
Finland	Early School Leavers	<b>Unemployment ratio</b>	<b>Households low work intensity</b>
Sweden	Tertiary Education	Unemployment ratio	<b>No unmeet medical needs</b>
United Kingdom	Early School Leavers	Involuntary part-time	<b>NEET</b>

Negative strong index appears in bold.

Source: Own elaboration

Table 5: Weak index by dimensions and global in 2007 and simulated 2016

	2007				Simulated 2016				Variation: Simulated 2016-2007*			
	Education and Training	Labour Market and Entrepreneurship	Social Inclusion	Global	Education and Training	Labour Market and Entrepreneurship	Social Inclusion	Global	Education and Training	Labour Market and Entrepreneurship	Social Inclusion	Global
Belgium	0.79	0.20	0.65	0.54	0.90	0.31	0.36	0.52	<b>0.11</b>	<b>0.12</b>	-0.28	-0.02
Bulgaria	-0.02	0.54	-0.95	-0.14	0.13	0.39	-0.32	0.07	<b>0.16</b>	-0.14	<b>0.64</b>	<b>0.21</b>
Czech Republic	0.98	1.05	0.92	0.97	0.97	1.11	0.94	1.00	-0.01	0.06	0.02	0.02
Denmark	0.46	1.26	0.49	0.73	0.93	0.83	0.15	0.63	<b>0.47</b>	-0.43	-0.34	-0.10
Germany	0.33	0.40	0.40	0.37	0.64	1.47	0.98	1.02	<b>0.31</b>	<b>1.07</b>	<b>0.58</b>	<b>0.64</b>
Estonia	0.73	1.22	0.86	0.93	1.22	1.09	0.58	0.95	<b>0.49</b>	-0.13	-0.28	0.03
Ireland	1.06	1.06	0.17	0.76	1.73	0.20	0.12	0.68	<b>0.68</b>	-0.86	-0.06	-0.08
Greece	0.21	-0.59	0.26	-0.04	0.94	-0.71	-0.61	-0.12	<b>0.73</b>	-0.12	-0.86	-0.08
Spain	-0.09	0.04	0.82	0.25	-0.15	-0.67	0.26	-0.18	-0.05	-0.70	-0.56	-0.44
France	0.56	0.05	0.66	0.42	0.86	-0.14	0.26	0.32	<b>0.30</b>	-0.18	-0.40	-0.09
Italy	-0.16	-0.18	-0.13	-0.15	0.27	-0.63	-0.23	-0.19	<b>0.43</b>	-0.45	-0.10	-0.04
Latvia	0.29	1.31	0.40	0.66	0.85	0.50	0.44	0.59	<b>0.56</b>	-0.80	0.03	-0.07
Lithuania	0.86	1.06	0.69	0.86	1.30	0.78	0.45	0.84	<b>0.44</b>	-0.27	-0.24	-0.03
Luxembourg	0.21	0.82	1.55	0.85	0.74	0.66	1.17	0.85	<b>0.53</b>	-0.16	-0.38	0.00
Hungary	0.53	0.40	0.14	0.35	0.36	0.75	0.22	0.44	-0.17	<b>0.35</b>	0.08	0.09
Netherlands	0.68	1.46	1.14	1.08	0.91	0.67	1.06	0.87	<b>0.23</b>	-0.79	-0.08	-0.21
Austria	0.57	1.03	1.37	0.98	1.02	0.87	1.14	1.00	<b>0.45</b>	-0.15	-0.23	0.02
Poland	1.29	-0.22	0.12	0.39	1.46	0.20	0.55	0.73	<b>0.18</b>	<b>0.42</b>	<b>0.43</b>	<b>0.34</b>
Portugal	-0.59	-0.16	0.39	-0.12	0.37	-0.30	0.49	0.18	<b>0.95</b>	-0.14	<b>0.09</b>	<b>0.30</b>
Romania	-0.47	0.13	0.09	-0.08	-0.32	0.23	-0.18	-0.09	<b>0.15</b>	<b>0.09</b>	-0.27	-0.01
Slovenia	1.44	0.75	1.29	1.15	1.51	0.19	1.10	0.92	0.06	-0.57	-0.19	-0.23
Slovakia	0.80	-0.01	0.82	0.53	0.75	0.07	0.61	0.48	-0.05	0.08	-0.21	-0.06
Finland	1.50	0.61	0.86	0.98	1.40	0.29	0.33	0.67	-0.10	-0.32	-0.53	-0.31
Sweden	1.10	0.18	0.58	0.61	1.05	0.44	0.36	0.61	-0.05	<b>0.26</b>	-0.21	0.00
United Kingdom	0.43	0.71	0.47	0.53	0.85	0.77	0.41	0.67	<b>0.42</b>	0.06	-0.06	<b>0.14</b>
Mean	0.54	0.52	0.56	0.54	0.83	0.38	0.43	0.54	<b>0.29</b>	-0.15	-0.14	0.00
Std. Deviation	0.54	0.56	0.52	0.40	0.49	0.55	0.46	0.38	-0.04	-0.01	-0.06	-0.02
Coef.of Variation	0.99	1.06	0.92	0.74	0.59	1.46	1.08	0.71	-0.40	<b>0.40</b>	<b>0.16</b>	-0.03

\*Bold letter for positive differences, italics for negatives and light grey for values in the range  $\pm 0.09$

Source: Own elaboration

Table 6: Strong index by dimensions and global in 2007 and simulated 2016

	2007				Simulated 2016				Variation: Simulated 2016-2007*			
	Education and Training	Labour Market and Entrepreneurship	Social Inclusion	Global	Education and Training	Labour Market and Entrepreneurship	Social Inclusion	Global	Education and Training	Labour Market and Entrepreneurship	Social Inclusion	Global
Belgium	0.59	0.03	-0.26	-0.26	0.74	-0.02	-0.47	-0.47	<b>0.15</b>	-0.05	-0.21	-0.21
Bulgaria	-1.00	0.00	-1.00	-1.00	-1.00	-0.28	-1.00	-1.00	0.00	-0.28	0.00	0.00
Czech Republic	-1.00	-0.41	0.66	-1.00	0.52	0.60	0.31	0.31	<b>1.52</b>	<b>1.01</b>	-0.35	<b>1.31</b>
Denmark	-0.31	0.55	-0.58	-0.58	-0.18	-0.01	-0.60	-0.60	<b>0.13</b>	-0.56	-0.02	-0.02
Germany	-0.15	-0.12	-0.04	-0.15	0.13	0.00	0.27	0.00	<b>0.28</b>	<b>0.12</b>	<b>0.31</b>	<b>0.15</b>
Estonia	0.28	0.71	0.15	0.15	0.73	0.62	-0.84	-0.84	<b>0.46</b>	-0.09	-0.99	-0.99
Ireland	0.53	0.89	-1.00	-1.00	1.67	-0.08	-0.81	-0.81	<b>1.13</b>	-0.96	-0.81	<b>0.19</b>
Greece	-0.31	-1.00	-0.29	-1.00	-0.67	-1.00	-0.95	-1.00	-0.36	0.00	-0.67	0.00
Spain	-0.66	-0.72	0.11	-0.72	-1.00	-0.90	-0.72	-1.00	-0.34	-0.17	-0.83	-0.28
France	0.49	-0.29	0.27	-0.29	-0.05	-0.39	-0.11	-0.39	-0.55	-0.10	-0.39	-0.10
Italy	-0.25	-0.52	-0.51	-0.52	-0.12	-0.86	-0.56	-0.86	<b>0.13</b>	-0.34	-0.05	-0.34
Latvia	-0.03	0.87	-0.37	-0.37	0.76	-0.02	-0.06	-0.06	<b>0.79</b>	-0.89	<b>0.31</b>	<b>0.31</b>
Lithuania	0.00	0.14	-0.05	-0.05	-0.20	0.42	-0.04	-0.20	-0.20	<b>0.28</b>	0.02	-0.15
Luxembourg	-0.24	0.53	0.78	-0.24	-0.27	-0.16	-0.09	-0.27	-0.03	-0.69	-0.87	-0.03
Hungary	-0.04	-0.04	-0.14	-0.14	-0.32	0.22	-0.23	-0.32	-0.28	<b>0.25</b>	-0.08	-0.18
Netherlands	-0.01	0.06	0.00	-0.01	0.41	-0.27	-0.10	-0.27	<b>0.41</b>	-0.33	-0.10	-0.27
Austria	0.34	0.80	1.06	0.34	0.07	0.52	0.59	0.07	-0.27	-0.28	-0.46	-0.27
Poland	0.35	-0.76	-0.21	-0.76	0.86	-0.84	-0.29	-0.84	<b>0.51</b>	-0.08	-0.07	-0.08
Portugal	-1.00	-0.49	-0.45	-1.00	-0.04	-0.63	-0.16	-0.63	<b>0.96</b>	-0.13	<b>0.29</b>	<b>0.37</b>
Romania	-0.76	-0.86	-0.57	-0.86	-0.88	-0.74	-0.73	-0.88	-0.12	<b>0.12</b>	-0.16	-0.02
Slovenia	0.58	-0.80	0.92	-0.80	1.53	-0.58	0.85	-0.58	<b>0.95</b>	<b>0.22</b>	-0.08	<b>0.22</b>
Slovakia	-0.80	-1.00	0.14	-1.00	-0.55	-0.23	0.12	-0.55	<b>0.25</b>	<b>0.77</b>	-0.02	<b>0.45</b>
Finland	1.00	0.05	0.48	0.05	1.16	-0.19	-0.32	-0.32	<b>0.16</b>	-0.24	-0.80	-0.37
Sweden	0.84	-0.83	-0.63	-0.83	-0.02	-0.12	-1.00	-1.00	-0.87	<b>0.71</b>	-0.37	-0.17
United Kingdom	-0.08	0.24	-0.02	-0.08	0.71	0.49	-0.17	-0.17	<b>0.79</b>	<b>0.25</b>	-0.15	-0.09
Mean	-0.07	-0.12	-0.06	-0.48	0.16	-0.18	-0.28	-0.51	<b>0.22</b>	-0.06	-0.22	-0.02
Std. Deviation	0.57	0.60	0.53	0.42	0.72	0.48	0.48	0.37	<b>0.15</b>	-0.12	-0.05	-0.05
Coef.of Variation	8.75	5.03	8.54	0.87	4.53	2.69	1.69	0.73	-4.23	-2.35	-6.85	-0.14

\*Bold letter for positive differences, italics for negatives and light grey for values in the range  $\pm 0.09$

Source: Own elaboration

Table 7: Number of indicators below the reservation level (vulnerabilities) by country and dimension in 2007 and simulated 2016

	2007					Simulated 2016					Variation: Simulated 2016-2007				
	Education and Training	Labour Market and Entrepreneurship	Social Inclusion	Total	Number of dimensions	Education and Training	Labour Market and Entrepreneurship	Social Inclusion	Total	Number of dimensions	Education and Training	Labour Market and Entrepreneurship	Social Inclusion	Total	Number of dimensions
Belgium	0	0	1	1	1	0	0	1	1	1	0	0	0	0	0
Bulgaria	3	0	5	8	2	3	1	3	7	3	0	1	-2	-1	1
Czech Republic	1	1	0	2	2	0	0	0	0	0	-1	-1	0	-2	-2
Denmark	1	0	2	3	2	1	0	3	4	2	0	0	1	1	0
Germany	1	1	0	2	2	0	0	0	0	0	-1	-1	0	-2	-2
Estonia	0	0	0	0	0	0	0	1	1	1	0	0	1	1	1
Ireland	0	0	1	1	1	0	0	1	1	1	0	0	0	0	0
Greece	2	5	1	8	3	3	4	4	11	3	1	-1	3	3	0
Spain	2	3	0	5	2	2	5	2	9	3	0	2	2	4	1
France	0	2	0	2	1	0	4	1	5	2	0	2	1	3	1
Italy	4	5	2	11	3	1	6	3	10	3	-3	1	1	-1	0
Latvia	0	0	3	3	1	0	0	0	0	0	0	0	-3	-3	-1
Lithuania	0	0	0	0	0	2	0	2	4	2	2	0	2	4	2
Luxembourg	2	1	0	3	2	2	1	1	4	3	0	0	1	1	1
Hungary	0	0	1	1	1	3	0	1	4	2	3	0	0	3	1
Netherlands	0	0	0	0	0	0	1	2	3	2	0	1	2	3	2
Austria	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Poland	1	4	1	6	3	0	1	1	2	2	-1	-3	0	-4	-1
Portugal	6	3	1	10	3	0	5	1	6	2	-6	2	0	-4	-1
Romania	6	3	3	12	3	4	3	3	10	3	-2	0	0	-2	0
Slovenia	1	1	0	2	2	0	1	0	1	1	-1	0	0	-1	-1
Slovakia	1	4	0	5	2	3	4	0	7	2	2	0	0	2	0
Finland	0	0	0	0	0	0	1	1	2	2	0	1	1	2	2
Sweden	0	3	2	5	2	0	2	2	4	3	0	-1	0	-1	1
United Kingdom	0	0	0	0	0	0	0	1	1	1	0	0	1	1	1

Source: Own elaboration

Table A1. Robustness Check. Final country ranks in 2016

	Weak Index Double reference point	Min-Max standarization	Geometric mean aggration method	Strong Index Double reference point
Belgium	16	14	25	9
Bulgaria	21	21	10	23.5
Czech Republic	2	2	8	7
Denmark	14	17	6	14
Germany	3	7	5	12
Estonia	4	5	14	20
Ireland	10	9	18	17
Greece	23	25	2	23.5
Spain	24	24	13	23.5
France	19	19	23	8
Italy	25	23	24	21
Latvia	15	12	22	2
Lithuania	6	3	3	4
Luxembourg	8	6	1	13
Hungary	18	18	15	11
Netherlands	7	8	4	6
Austria	1	1	7	1
Poland	9	11	12	19
Portugal	20	20	21	15
Romania	22	22	9	18
Slovenia	5	4	11	16
Slovakia	17	15	19	10
Finland	12	13	20	5
Sweden	13	16	17	23.5
United Kingdom	11	10	16	3

Source: Own Elaboration

Table A2. Achievement scalarizing function in 2007 and simulated 2016

2007		BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	LV	LT	LU	HU	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	Q1 <sup>(a)</sup>	Q3 <sup>(b)</sup>	weights
Education and Training	Early leavers from education and training	0.48	0.00	1.78	0.34	0.41	0.09	0.53	0.10	-0.74	0.36	-0.21	-0.03	1.26	0.41	0.60	0.55	0.71	1.82	-1.00	-0.11	2.00	1.52	1.00	1.22	-0.08	9.10	14.90	0.23
	Low achievers in reading	0.66	-0.91	0.09	1.02	0.60	1.23	1.36	-0.07	0.00	0.42	-0.03	0.47	0.00	0.30	0.54	1.10	0.44	1.00	0.08	-1.00	0.97	-0.08	2.00	1.09	0.71	16.24	25.67	0.10
	Low achievers in science	0.74	-0.83	1.00	0.49	1.01	1.68	1.00	-0.11	0.28	0.00	-0.16	0.67	0.16	-0.04	1.04	1.22	0.86	0.74	-0.13	-1.00	1.14	0.18	2.00	0.84	0.79	15.50	21.20	0.10
	Low achievers in maths	1.03	-1.00	0.72	1.35	0.58	1.48	1.11	-0.31	-0.06	0.13	-0.32	0.43	0.00	0.04	0.34	1.53	0.57	0.60	-0.25	-0.98	1.00	0.40	2.00	0.89	0.60	17.70	23.00	0.10
	Tertiary education attainment	1.36	0.29	-1.00	0.99	0.32	0.72	1.56	0.31	1.29	1.34	-0.30	0.28	0.89	0.83	-0.04	0.89	0.00	0.35	-0.18	-0.92	0.58	-0.80	2.00	1.30	1.00	20.90	38.30	0.19
	Upper secondary education completed	0.61	0.68	2.00	-0.31	-0.15	0.46	1.00	0.61	-0.66	0.57	0.00	0.32	1.34	-0.24	0.72	-0.01	0.75	1.96	-1.00	0.10	1.94	1.91	1.00	1.00	1.00	76.40	86.50	0.28
Laboral Market and Entrepreneurship	Youth unemployment rate	0.03	0.48	1.15	1.45	0.48	1.21	1.24	-1.00	0.17	-0.09	-0.18	0.87	1.52	0.83	0.33	2.00	1.00	-0.41	0.00	0.17	0.82	-0.41	0.28	0.00	0.58	7.90	13.90	0.21
	Long-term youth unemployment	0.16	0.00	0.62	1.82	0.58	0.71	1.00	-0.58	1.00	0.42	-0.36	1.55	0.24	0.53	-0.04	2.00	1.45	-0.23	0.38	-0.64	0.73	-1.00	1.82	2.00	0.91	1.80	6.30	0.21
	Youth unemployment ratio	0.20	1.00	1.55	1.00	0.33	1.50	1.00	-1.00	-0.42	0.00	0.37	1.00	2.00	1.25	0.80	1.60	0.80	0.03	-0.33	0.60	0.83	-0.08	0.00	-0.83	0.20	4.80	7.80	0.20
	Youth self-employment rate	0.08	0.62	-0.41	1.53	1.47	0.88	1.20	-0.80	0.19	0.85	-1.00	0.62	1.47	2.00	0.81	0.15	1.00	-0.24	0.35	-0.69	0.73	-0.67	0.58	1.00	0.00	4.20	6.80	0.04
	Youth temporary employment rate	0.61	1.29	0.92	0.55	-0.12	1.90	0.89	0.56	-0.90	0.02	0.07	1.60	1.44	0.57	0.87	0.06	0.90	-1.00	-0.56	2.00	-0.80	1.00	0.00	-0.32	1.18	8.80	31.10	0.16
	Youth involuntary part-time employment rate	0.09	0.03	1.34	1.22	0.39	1.00	1.13	-0.64	0.06	-0.34	-0.60	1.77	0.00	0.60	0.04	1.58	0.94	0.42	-0.55	-1.00	2.00	0.96	0.80	-0.34	0.93	18.40	37.10	0.18
Social Inclusion	At risk of poverty rate	0.87	-1.00	1.60	-0.76	0.00	0.85	1.00	-0.29	0.35	0.65	-0.50	0.96	0.59	0.78	1.09	1.36	1.38	0.07	0.89	-0.79	2.00	1.52	0.39	-0.12	0.30	14.90	20.30	0.16
	Severe material deprivation rate	0.69	-1.00	0.60	0.87	0.82	1.10	1.00	0.25	1.10	0.82	0.64	-0.15	-0.05	2.00	-0.17	1.65	1.22	-0.21	0.45	-0.46	0.93	0.00	0.92	1.47	0.89	4.70	13.80	0.19
	Households with low work intensity	-0.26	-0.77	0.68	-0.47	0.28	1.46	-1.00	0.38	0.84	0.24	-0.19	2.00	1.57	1.54	-0.02	0.00	1.14	0.34	0.68	0.78	0.92	1.39	0.48	1.00	0.52	5.70	10.70	0.21
	No unmet medical needs	1.77	-1.00	0.77	0.81	-0.04	0.81	0.15	0.31	1.62	0.88	-0.08	-0.37	0.77	1.31	0.08	1.00	2.00	0.00	-0.45	0.73	1.77	1.00	1.38	-0.63	0.69	96.10	98.70	0.22
	NEET	0.19	-1.00	1.06	1.67	0.89	0.15	0.00	0.48	0.11	0.70	-0.51	-0.28	0.48	2.00	-0.07	1.78	1.06	0.33	0.56	-0.11	0.96	0.30	1.00	1.11	-0.02	3.90	6.60	0.22
	Simulated 2016		BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	LV	LT	LU	HU	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	Q1 <sup>(a)</sup>	Q3 <sup>(b)</sup>
Education and Training	Early leavers from education and training	1.07	0.19	1.58	1.44	0.79	0.69	1.67	1.67	-1.00	1.07	0.19	0.84	2.00	1.84	0.43	1.26	1.51	1.91	0.16	-0.88	1.98	1.40	1.28	1.40	0.64	9.10	14.90	0.23
	Low achievers in reading	0.65	-1.00	0.39	1.21	1.01	1.93	2.00	-0.10	1.01	0.44	0.50	0.85	0.06	0.01	-0.12	0.80	0.34	1.30	0.90	-0.82	1.19	-0.41	1.85	0.77	0.82	16.24	25.67	0.10
	Low achievers in science	0.25	-0.97	0.09	0.93	0.74	2.00	1.03	-0.66	0.51	-0.05	-0.12	0.70	-0.20	-0.27	-0.28	0.47	0.07	0.86	0.67	-1.00	1.07	-0.55	1.60	-0.02	0.67	15.50	21.20	0.10
	Low achievers in maths	0.55	-1.00	0.25	1.63	1.08	2.00	1.42	-0.67	0.15	-0.03	-0.02	0.30	-0.13	-0.15	-0.32	1.15	0.23	1.08	-0.04	-0.88	1.25	-0.25	1.63	0.42	0.21	17.70	23.00	0.10
	Tertiary education attainment	1.36	0.74	0.68	1.46	0.71	1.35	1.70	1.22	1.09	1.26	0.30	1.22	2.00	1.80	0.70	1.36	1.09	1.31	0.79	0.27	1.29	0.61	1.38	1.62	1.49	20.90	38.30	0.19
	Upper secondary education completed	0.88	0.85	1.40	-0.18	0.13	0.73	2.00	1.61	-1.00	1.16	0.46	0.83	1.68	0.06	0.70	0.41	1.39	1.56	0.11	0.35	1.57	1.51	1.16	1.05	0.87	76.40	86.50	0.28
Laboral Market and Entrepreneurship	Youth unemployment rate	-0.02	0.28	1.29	0.48	2.00	0.65	0.00	-1.00	-0.79	-0.19	-0.59	0.10	0.58	0.55	0.80	0.88	0.78	0.35	-0.28	0.13	-0.03	-0.07	-0.07	0.05	0.77	7.90	13.90	0.21
	Long-term youth unemployment	0.00	-0.09	0.84	1.89	1.33	0.80	0.20	-1.00	-0.35	-0.04	-0.70	0.29	0.42	0.76	0.60	1.11	0.96	0.44	-0.10	-0.13	-0.02	-0.23	1.33	2.00	0.91	1.80	6.30	0.21
	Youth unemployment ratio	0.30	0.83	2.00	-0.01	2.00	0.60	-0.08	-1.00	-0.94	-0.21	-0.40	-0.02	0.77	0.77	1.30	0.47	0.50	0.47	-0.28	0.50	0.00	-0.03	-0.20	-0.12	0.47	4.80	7.80	0.20
	Youth self-employment rate	0.65	1.17	0.12	1.93	2.00	1.62	1.79	0.00	0.85	1.55	-0.72	0.65	0.19	-0.16	1.59	0.58	1.83	0.35	1.28	-1.00	1.79	-0.17	1.24	1.66	0.85	4.20	6.80	0.04
	Youth temporary employment rate	0.43	1.24	0.48	0.02	0.00	1.51	0.61	0.42	-1.00	-0.18	-0.41	1.63	1.88	0.43	0.74	-0.27	0.79	-0.84	-0.82	2.00	-0.76	0.68	-0.06	-0.08	1.15	8.80	31.10	0.16
	Youth involuntary part-time employment rate	0.91	-0.33	1.02	1.41	1.62	2.00	0.03	-0.86	-0.63	-0.46	-1.00	0.76	0.61	0.96	0.09	0.99	1.15	0.32	-0.44	-0.86	1.37	0.22	0.15	-0.12	0.59	18.40	37.10	0.18
Social Inclusion	At risk of poverty rate	0.41	-0.49	2.00	-0.82	0.00	0.67	-0.02	-0.64	-0.91	0.11	-0.46	0.85	-0.05	-0.09	0.50	-0.06	0.46	-0.04	-0.16	-1.00	1.06	1.20	0.02	-0.44	0.50	14.90	20.30	0.16
	Severe material deprivation rate	0.73	-1.00	0.93	1.31	1.28	1.34	0.55	-0.82	0.59	0.92	0.05	0.24	0.10	1.81	-0.26	1.63	1.25	0.66	0.44	-0.64	0.96	0.47	1.63	2.00	0.74	4.70	13.80	0.19
	Households with low work intensity	-0.47	-0.03	0.84	-0.38	0.90	1.50	-0.81	-1.00	-0.72	-0.02	-0.31	0.92	-0.03	0.18	0.90	-0.10	0.72	2.00	0.46	0.56	0.84	0.98	-0.32	0.18	-0.17	5.70	10.70	0.21
	No unmet medical needs	0.65	0.81	0.31	-0.55	1.67	-0.84	0.65	-0.77	1.50	-0.11	0.12	-0.06	1.50	1.67	0.08	1.83	2.00	-0.29	0.58	0.62	1.67	0.12	0.12	-1.00	0.92	96.10	98.70	0.22
	NEET	0.52	-1.00	0.89	1.07	0.81	0.41	0.19	0.15	0.52	0.44	-0.56	0.33	0.52	2.00	-0.08	1.71	1.07	0.33	0.93	-0.68	0.93	0.44	0.30	1.07	0.11	3.90	6.60	0.22

<sup>(a)</sup> First quartile, reservation level; <sup>(b)</sup> Third quartile: aspiration level; Weights calculated by principal component analysis;

Shaded dark grey cells indicate achievement function below 0; light grey between 0 and 1; white above 1.

See Table 3 for country name abbreviations.

Source: Own elaboration

Table A3. Labour Market Policies Expenditures by Type of Action (Million euro at constant 2010 prices)

	2007				2016				Annual Average Growth			
	Total	Labour Market Services (PES)	Active Labour Market measures	Passive Labour Market Measures	Total	Labour Market Services (PES)	Active Labour Market measures	Passive Labour Market Measures	Total	Labour Market Services (PES)	Active Labour Market measures	Passive Labour Market Measures
Belgium	9,365.314	636.5	1,685.725	7,043.089	8,945.68	778.248	2,042.707	6,124.724	-0.01	0.02	0.02	-0.02
Bulgaria	162.272	17.097	96.599	48.576	264.773	13.22	57.14	194.414	0.06	-0.03	-0.06	0.17
Czech Republic	686.502	197.89	185.839	302.774	955.411	202.607	437.105	315.698	0.04	0.00	0.10	0.00
Denmark	6,467.535	377.856	2,454.738	3,634.941	8,001.949	1,284.884	3,754.731	2,962.334	0.02	0.15	0.05	-0.02
Germany	52,799.599	7,852.66	14,157.501	30,789.438	42,409.344	10,628.984	7,764.13	24,016.23	-0.02	0.03	-0.06	-0.03
Estonia	26.775	5.032	4.179	17.564	140.214	23.718	33.479	83.017	0.20	0.19	0.26	0.19
Ireland	2,844.262	374.533	856.278	1,613.451	3,888.596	121.683	1,094.373	2,672.54	0.04	-0.12	0.03	0.06
Greece	1,246.094	41.009	376.35	828.735	1,278.148	16.608	315.02	946.519	0.00	-0.10	-0.02	0.01
Spain	24,000.287	1,001.091	6,916.723	16,082.473	24,172.417	1,433.84	4,525.377	18,213.2	0.00	0.04	-0.05	0.01
France	50,020.31	4,558.54	13,495.825	31,965.945	63,963.604	5,405.026	15,194.164	43,364.414	0.03	0.02	0.01	0.03
Latvia	101.846	14.163	24.048	63.635	141.891	10.841	31.358	99.692	0.04	-0.03	0.03	0.05
Lithuania	139.016	27.935	73.074	38.008	184.499	20.317	85.943	78.239	0.03	-0.03	0.02	0.08
Luxembourg	362.232	17.054	142.694	202.484	662.106	30.262	322.507	309.338	0.07	0.07	0.09	0.05
Hungary	738.171	87.962	276.047	374.161	1,333.031	70.265	992.216	270.551	0.07	-0.02	0.15	-0.04
Netherlands	13,388.964	1,970.411	4,232.43	7,186.123	15,589.332	1,514.641	3,167.608	10,907.083	0.02	-0.03	-0.03	0.05
Austria	5,447.909	475.121	1,449.996	3,522.792	7,130.067	565.721	1,851.222	4,713.124	0.03	0.02	0.03	0.03
Poland	3,268.853	308.19	1,304.393	1,656.27	2,989.574	340.218	1,588.743	1,060.613	-0.01	0.01	0.02	-0.05
Portugal	2,828.465	204.37	646.705	1,977.39	2,894.215	81.455	723.105	2,089.655	0.00	-0.10	0.01	0.01
Romania	409.06	44.494	91.478	273.088	202.332	62.703	36.901	102.728	-0.08	0.04	-0.10	-0.10
Slovenia	186.444	32.452	41.424	112.568	282.726	28.858	62.882	190.987	0.05	-0.01	0.05	0.06
Slovakia	380.939	68.979	75.715	236.245	449.415	36.162	155.265	257.988	0.02	-0.07	0.08	0.01
Finland	4,330.138	238.995	1,354.237	2,736.906	5,393.341	208.682	1,624.251	3,560.408	0.02	-0.01	0.02	0.03
Sweden	6,013.345	581.823	2,847.785	2,583.737	7,333.979	1,025.468	3,905.783	2,402.728	0.02	0.06	0.04	-0.01

Note: Only countries for which data are available are shown

Source: OECD database and Eurostat



Table A4. Expenditure on vocational education and training (VET) and total educational expenditure (million constant prices (2015) and constant PPP

	2012			2016			Annual Average Growth		
	VET Programmes (ISCED 2-4)	All ISCED levels	VET as a % of all ISCED levels	VET Programmes (ISCED 2-4)	All ISCED levels	VET as a % of all ISCED levels	VET Programmes (ISCED 2-4)	All ISCED levels	VET as a % of all ISCED levels
Czech Republic	2,731	16,095	17%	2,421	21,904	11%	-0.03	0.08	-0.10
Germany	29,506	196,229	15%	28,459	206,861	14%	-0.01	0.01	-0.02
Estonia	212	1,893	11%	175	2,242	8%	-0.05	0.04	-0.09
France	14,445	156,989	9%	13,891	162,502	9%	-0.01	0.01	-0.02
Italy	1,945	96,083	2%	76	93,356	0%	-0.56	-0.01	-0.55
Latvia	176	2,290	8%	204	2,496	8%	0.04	0.02	0.01
Lithuania	312	3,951	8%	254	3,786	7%	-0.05	-0.01	-0.04
Netherlands	11,126	48,848	23%	10,943	48,421	23%	0.00	0.00	0.00
Austria	2,984	23,141	13%	2,877	24,441	12%	-0.01	0.01	-0.02
Poland	6,041	52,851	11%	5,486	54,467	10%	-0.02	0.01	-0.03
Slovenia	277	3,965	7%	398	3,685	11%	0.09	-0.02	0.11
Finland	2,675	16,342	16%	2,325	16,112	14%	-0.03	0.00	-0.03
Sweden	3,068	31,309	10%	2,334	35,320	7%	-0.07	0.03	-0.09
United Kingdom	10,957	169,591	6%	18,617	183,893	10%	0.14	0.02	0.12

Note: Only countries for which data are available are shown

Source: OECD database and Eurostat

Table A5. Strictness of Employment Protection Index

	2008				2016				Variation 2016-2008*			
	Collective dismissals (additional restrictions)	Individual & Collective Dismissals (Regular Contracts)	Individual Dismissals (Regular Contracts)	Temporary Contracts	Collective dismissals (additional restrictions)	Individual & Collective Dismissals (Regular Contracts)	Individual Dismissals (Regular Contracts)	Temporary Contracts	Collective dismissals (additional restrictions)	Individual & Collective Dismissals (Regular Contracts)	Individual Dismissals (Regular Contracts)	Temporary Contracts
Austria	3.25	2.56	2.29	1.31	3.25	2.56	2.29	1.31	0.00	0.00	0.00	0.00
Belgium	4.88	2.60	1.69	2.25	4.88	2.87	2.07	2.06	0.00	0.27	0.38	-0.19
Czech Republic	2.13	3.02	3.38	1.13	2.13	2.93	3.26	1.44	0.00	-0.09	-0.13	0.31
Denmark	2.88	1.87	1.47	1.38	2.88	1.92	1.53	1.63	0.00	0.04	0.06	0.25
Estonia	1.75	2.46	2.74	1.88	2.88	2.11	1.81	3.00	1.13	-0.35	-0.93	1.13
Finland	1.63	1.95	2.08	1.56	1.63	1.95	2.08	1.56	0.00	0.00	0.00	0.00
France	3.13	2.74	2.58	3.13	3.13	2.68	2.50	3.00	0.00	-0.06	-0.08	-0.13
Germany	3.63	2.89	2.60	1.00	3.63	2.89	2.60	1.13	0.00	0.00	0.00	0.13
Greece	2.88	3.06	3.13	2.75	2.88	2.57	2.45	2.25	0.00	-0.49	-0.68	-0.50
Hungary	3.38	2.40	2.00	1.13	3.63	2.17	1.59	1.25	0.25	-0.23	-0.42	0.13
Ireland	3.50	1.79	1.10	0.63	3.50	1.88	1.23	0.63	0.00	0.09	0.13	0.00
Italy	4.13	3.33	3.02	2.00	3.75	2.84	2.47	1.63	-0.38	-0.49	-0.54	-0.38
Luxembourg	3.88	2.63	2.14	3.75	3.88	2.63	2.14	3.75	0.00	0.00	0.00	0.00
Netherlands	3.00	3.22	3.30	0.94	3.19	3.37	3.44	1.19	0.19	0.16	0.14	0.25
Poland	2.88	2.48	2.33	1.63	2.88	2.48	2.33	1.63	0.00	0.00	0.00	0.00
Portugal	1.88	3.69	4.42	1.94	1.88	2.78	3.14	1.94	0.00	-0.91	-1.28	0.00
Slovak Republic	3.75	3.13	2.89	1.63	3.38	2.76	2.51	2.25	-0.38	-0.38	-0.38	0.63
Slovenia	3.63	2.93	2.65	1.81	3.63	2.52	2.08	1.50	0.00	-0.41	-0.58	-0.31
Spain	3.37	2.65	2.36	3.00	3.00	2.26	1.96	2.47	-0.38	-0.39	-0.39	-0.53
Sweden	3.00	2.60	2.45	0.81	3.00	2.60	2.45	0.81	0.00	0.00	0.00	0.00
Switzerland	3.63	2.06	1.43	1.25	3.63	2.06	1.43	1.25	0.00	0.00	0.00	0.00
United Kingdom	2.38	1.76	1.51	0.38	2.13	1.57	1.35	0.38	-0.25	-0.19	-0.17	0.00

The OECD indicators of employment protection are synthetic indicators of the strictness of regulation on dismissals and the use of temporary contracts. For each year, indicators refer to regulation in force on the 1st of January. Only countries for which data are available are shown

\*Variation between years do not show any changes within a country. It only shows changes in the relative position of each country.

Source: OECD database

