



Changing patterns of enrolment and completion in upper secondary IVET 1995-2015

Findings from a survey on changes in enrolment in upper secondary initial Vocational Education and Training

Cedefop project 'Changing nature and role of vocational education and training in Europe'. Working paper 3.2

Abstract

This working paper is one in a series of papers produced as part of the Cedefop project 'The Changing Nature and Role of VET' (2016-2018). The aim of the paper is to identify and analyse patterns and trends in IVET that may not be visible in statistical data aggregated at national or European level. The analysis uses results from the ISCED mappings carried out by UNESCO and results from a survey to national VET experts to examine time-series data for the years 1995-2015 at programme level. It finds that the size of enrolment in VET has been decisively impacted by demographic changes in several countries, but that the share of young people enrolled in upper secondary VET has remained fairly stable. Many fluctuations in enrolment figures are found to be artificial, since they are an expression of changing practices in classifying programmes and registering data. Nevertheless, the analysis raises the question whether the content of the programmes is fit for the future skill needs of the European populations.

Foreword

This working paper forms part of the Cedefop project 'The changing nature and role of vocational education and training (VET) in Europe'.

The purpose of the project is to improve our understanding of how VET is changing in the countries belonging to the European Union (as well as Iceland and Norway). Over a three-year period (2016-2018) the project will analyse how vocationally oriented education and training has changed in the last two decades (1995-2015) and based on these results investigate the main challenges and opportunities facing the sector today and in the future. Work is divided into six separate but interlinked assignments:

1. The changing definition and conceptualisation of VET.
2. The external drivers influencing VET developments.
3. The role of traditional VET at upper secondary level.
4. VET from a lifelong learning perspective.
5. The role of VET at higher education levels.
6. Scenarios outlining alternative development paths for European VET in the 21st century.

The study takes as its starting point that vocationally oriented education and training is something more than the traditional VET delivered at upper secondary level (in the form of school-based education or training, apprenticeships, or combinations of these). Due to the requirements of lifelong learning, we can observe a diversification of VET where new institutions and stakeholders become involved. Furthermore, we can observe an expansion of VET to higher education areas, partly through a reform of existing institutions, partly through the emergence of new institutions. This has been caused by factors internal to the education and training system as well as by external pressures linked to demographic, technological and economic changes.

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Executive Summary

This Working Paper is a part of a series of papers produced as part of the Cedefop project 'The Changing Nature and Role of VET' (2016-2018). It is one of three working papers reporting from the subproject entitled 'The changing role and nature of VET at upper secondary level'. This subproject involved analysing data from national education databases collected through a survey to national vocational education and training (VET) experts. The survey concepts were based on the delimitations used in international education statistics, notably the International Standard Classification of Education, ISCED, the 2011 version. The research questions guiding the analyses in this subproject were:

- How has enrolment in and completion of initial vocational education and training (IVET) at upper secondary level developed in the last two decades?
- What proportion of upper secondary students attends VET courses and how has this proportion?
- Which qualifications are delivered, which occupational areas are covered by VET, and how has this changed in the last two decades?
- Which are the main delivery forms of IVET, and how have they changed during the period?

While the aim of the first paper in this series, Working Paper 3.1, was to throw light on the usefulness of the ISCED classification and the international datasets using it for longitudinal studies of changes in VET, Working Paper 3.2 reports on the results of the survey with respect to the first two research questions. Finally, the two last research questions will be addressed in Working Paper 3.3.

Chapter 1 sets the context for the analysis of the research questions, discusses current concerns about a decline in enrolment in VET and presents the methodology used in this part of the study.

Chapter 2 looks at changes in enrolment at progressively finer levels of detail. First, net changes in enrolment figures for VET over the years 1995-2015 at country level are presented and the variation between countries discussed. The cross-country variations in the changes in absolute enrolment figures are shown to be considerable, and employing different typologies of VET systems and countries fails to provide plausible explanations for these variations. Subsequently, changes at national level in VET's share of enrolment in education programmes at upper secondary level is considered, and again, the picture is one of great diversity. The analysis reveals that at this level there is no evidence of a general decline in the national importance of VET - in fact, VET's share has remained quite stable in most of the countries, and in many instances where VET's share has fluctuated, the 'drops' or 'increases' in the share can be explained by factors related to administrative changes. Finally, shifts in enrolment figures between programmes at upper secondary level are considered briefly. These shifts are exemplified using figures from Finland, France, and Cyprus. In Finland, there has been a considerable increase in enrolments, most of which is due to the introduction of competence-based qualifications, while the remaining VET programmes remained stable. In France, enrolment in VET remained stable, while enrolment in general education increased. Finally, in Cyprus, there was a shift from general education towards VET.

Chapter 3 discusses the effects of demographic change and changes in the share of young people enrolled in upper secondary education. Two cases are analysed in detail, i.e., Lithuania and Hungary. In Lithuania, the analysis finds that the decrease in enrolment in VET can be explained by a dramatic drop in the number of young people, but also that the share of young people enrolled in general education at this level has dropped dramatically, indicating changes in the education choices of young people in the country. In Hungary, the situation is quite different. Here, the share of young people enrolled in VET as well as general education has increased from 1995 to 2015, albeit only until 2012, after which it has decreased again. To complement the analysis of these two countries, similar trends in eight geographical groups of countries are considered. This analysis concludes that in most of Europe, decreasing enrolment in VET as well as general education at Levels 3 and 4 is the result of a shrinking youth population. In some countries, the figures indicate a decreasing propensity to enrol in education among young people, and explanations for this are discussed.

Finally, Chapter 4 considers real and artificial impacts on enrolment figures due to administrative changes. It demonstrates how different practices in differentiating educational programmes and changing classifications of programmes mean that figures for different countries are not immediately comparable. Furthermore, it shows that in some countries apparent fluctuations in enrolment numbers and shares are merely the results of changing programme definitions or other administrative changes.

The working paper concludes that with some remarkable exceptions absolute enrolment figures in VET in most European countries have declined between 1995 and 2015, but that this decline is primarily due to a shrinking youth population. VET's relative share of enrolment in upper secondary education has remained quite stable in most countries when corrected for the effects of administrative changes. The question is raised whether the methods of provision and the content of VET in Europe today will remain relevant in view of future competence needs.

1 Introduction and objectives of this working paper

This working paper is one of the set of studies commissioned by Cedefop as part of the project ‘The Changing Nature and Role of VET’ (2016-2018). The project consists of six separate assignments, one of which was to examine changes during the twenty-year period from 1995 to 2015 in enrolment in and completion of initial vocational education and training (VET) at upper secondary level.

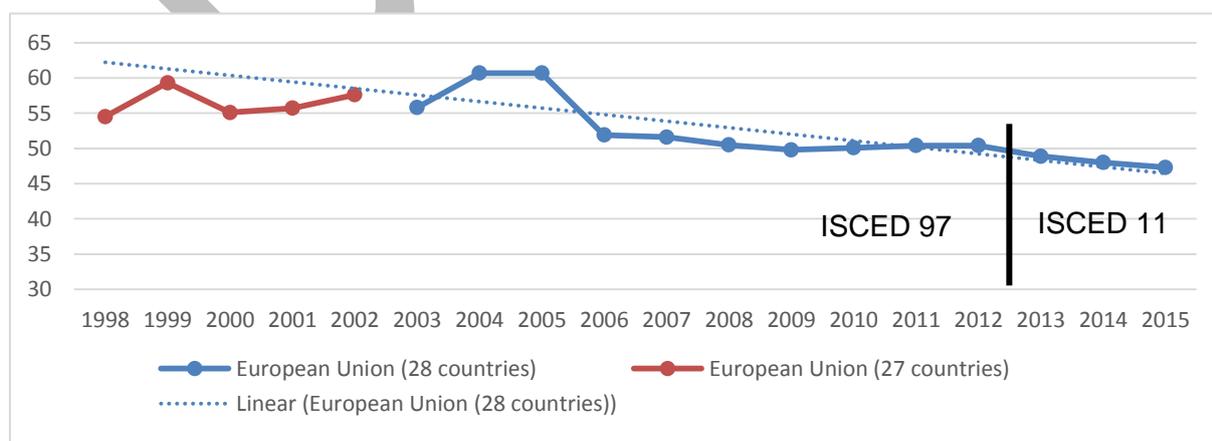
1.1 Background

Since the Copenhagen Process was initiated in 2002, EU and its Member States have had a shared focus on modernising the national VET provisions and improved coordination across Europe (McCoshan et al., 2008; Cedefop, 2015a).

A recurring theme in VET policies and policy initiatives of the 2000s was their focus on raising the attractiveness of vocational education and training, often linked to an observation of declining enrolment in upper secondary IVET. This is echoed in the vision of the Bruges Communiqué (European Ministers for Vocational Education and Training et al., 2010), which states that ‘By 2020, European VET systems should be more attractive, relevant, career-oriented, innovative, accessible and flexible than in 2010’ (European Ministers for Vocational Education and Training et al., 2010). To move towards this vision or goal, the Bruges Communiqué introduced specific priorities for VET, and subsequently quantitative indicators were developed (Cedefop, 2015a). However, in 2016, the policy initiatives had not yet had the intended effect, since the European Education and Training Monitor of that year observed that ‘for many young people and their parents, VET is still not as attractive as general education pathways’ (European Commission, 2016).

A figure that has often been used to assess the attractiveness of initial vocational education and training in upper secondary education is the number of students enrolled in VET as a share of the total number of students enrolled in upper secondary education. Aggregated data for Europe show that this figure has been declining since 2005, from more than 60% in 2005 to 47.5% in 2015.

Figure 1-1: Enrolment in VET at upper secondary Level 3 as a share of total enrolment in upper secondary education, 1998-2015, %.



Source: Eurostat ([educ_ipart_s]) and [educ_uoe_enrs05]

As pointed out repeatedly (see, e.g., (McCoshan et al., 2008), the situation with respect to enrolment in VET is very heterogenous across Europe. Therefore, figures aggregated to the EU level are of little value in providing knowledge about enrolment in upper secondary IVET across Europe that can serve to inform future VET policies at national and EU level.

However, OECD and Eurostat provide data at national level, enabling a first analysis of the variation underlying the aggregated figures. Working Paper 3.1 in this series presents data from Eurostat to the effect that VET's share of enrolment for the entire period 1998-2012¹ varied significantly across Europe. In 1998, in three countries (Hungary, Spain, and Portugal), VET's share was lower than 30%. In a mixed group of countries, including the Scandinavian countries as well as Greece, Latvia, Lithuania, France and the UK, the share was between 30% and 60%, while it was above 60% in the remaining countries.

Furthermore, the magnitude and direction of *changes* during the 1998-2012 period in VET's share of enrolment between 1998 and 2012 also varied considerably. The countries with the lowest shares at the baseline date experienced the largest increases in VET's share of enrolment, where three countries with an initial share in VET of more than 65% (Austria, the Netherlands, and Estonia) experienced a modest growth in VET's share of enrolments. The largest decreases in the share were found in Germany, Poland and the UK, while some countries that had an even larger share of enrolment in VET, such as the Czech Republic and Slovakia, experienced a less drastic decrease in VET's share of enrolments. Finland must be considered an outlier, with an initial share of enrolments of 52% and an increase in that share of 18 percentage points between 1998 and 2012.

This picture is not immediately comprehensible through the lens of the typologies of VET systems that are usually applied in research (i.e., the distinction between school-based systems and dual systems, or the typology distinguishing between market-based, state-led, and corporate systems (Rauner and Wittig, 2010)). Neither do country cluster typologies - whether based on policy regimes (e.g., the distinction between liberal, conservative-corporatist, and social-democratic welfare states (Esping-Andersen, 1996), or clustering based on geographical proximity - appear to provide a meaningful explanation of the magnitude or direction of the changes.

1.2 The objective of this Working Paper

In the light of these introductory observations, the aim of the research has been to dig deeper and to analyse changes in enrolment in upper secondary IVET at the level of educational programmes within countries. The overarching aim of the analysis has been to identify and analyse patterns and trends in IVET that may not be visible in the aggregated national data, let alone aggregated data at European level.

To achieve this aim, a research design was developed that combined quantitative, statistical data with qualitative information about changes in policies and provision of vocational education and training at national level. The research questions guiding the analyses were the following:

¹ The time span for this study is 1995-2015. However, time series data for enrolment in VET in Eurostat do not go further back than 1998.

- How has enrolment in and completion of initial VET at upper secondary level developed in the last two decades?
- What proportion of upper secondary students attends VET courses and how has it evolved?
- Which qualifications are delivered, which occupational areas are covered by VET and how has this changed in the last two decades?
- Which are the main delivery forms of IVET and how has this changed during the period?

The first working paper in this series, Working Paper 3.1: 'Using UOE and ISCED to analyse changes in Vocational Education and Training' presents and discusses in more depth the international statistical data available for the analysis of changes in upper secondary IVET. Moreover, the paper presents the methodological approach of the current project. Finally, based on the results of the analysis of data at programme level collected from national databases, it discusses methodological challenges to the ISCED classification and the UOE data collection.

This Working Paper (No. 3.2) reports the results of analyses of changes in enrolment in upper secondary IVET programmes between 1995 and 2015 based on time series data from national statistical education databases.

The third Working Paper (No. 3.3) reports on changes in governance and delivery of upper secondary IVET during the same twenty-year period, based on reports from national VET experts.

1.3 Methodological approach

Both quantitative and qualitative information was required to approach the research questions. Concerning the enrolment data, the objective was to be able to link enrolment figures to changes in the national system for providing VET.

Early in the research it was found that whereas data in international statistical databases are available that can provide an overview of changes in enrolment in VET at national level, and of the variation across Europe, they certainly did not tell the whole story.

First, data availability and continuity was an issue. First, UNESCO OECD Eurostat data collection (the UOE data collection²), an international collection of education data using the International Standard Classification of Education (ISCED) only started in 1999. Before 1999, some, but not all, European countries collected education data using ISCED. Furthermore, although the UOE data collection is international, and therefore also includes countries that were not EU members at the time, the time series from a substantial share of countries are incomplete. Moreover, the ISCED classification upon which the international data are based

² See [http://ec.europa.eu/eurostat/statistics-explained/index.php/UNESCO_OECD_Eurostat_\(UOE\)_joint_data_collection_%E2%80%93_methodology](http://ec.europa.eu/eurostat/statistics-explained/index.php/UNESCO_OECD_Eurostat_(UOE)_joint_data_collection_%E2%80%93_methodology). The UOE collection is explained in more detail in Working Paper 3.1.

(see Box 1-1 below) was revised twice during the 1995-2015 period with resulting breaks in time series between 1997 and 1998 and between 2012 and 2013.

Box 1-1: ISCED in brief

The **educational programme** is the main unit of the ISCED classification. In the most recent version of ISCED, ISCED 2011, an educational programme is defined as:

'...a coherent set or sequence of educational activities or communication designed and organized to achieve pre-determined learning objectives or to accomplish a specific set of educational tasks over a sustained period.' (OECD et al., 2015, p. 12).

The ISCED 2011 classification includes three dimensions. Any educational programme can be assigned a three-digit ISCED 2011 code, where:

1. The **Level of education or training** is the first digit. Per ISCED 2011, any education programme can be assigned a level based on the duration of the programme, the cumulated duration of study an assessment of the complexity of the curriculum, and the entry requirements. ISCED is divided into 10 levels, where Levels 01 and 02 are early childhood education, and Level 8 is doctoral or equivalent level. Upper secondary education is education at ISCED Level 3.
2. **Orientation.** Education programmes are characterised in ISCED by one of two types of orientation:
 - General (ISCED code 04)
 - Vocational (ISCED code 05)
3. Recognising that the duration as well as the learning outcomes of education programmes varies significantly within these levels, ISCED 2011 introduced a further dimension, which provides the third digit: **Educational attainment**. This dimension has four outcomes:
 - 'Insufficient for level completion or partial level completion' (ISCED code 001);
 - 'Partial level completion' (ISCED code 002);
 - 'Level completion without direct access to next level' (ISCED code 003);
 - 'Level completion with direct access to ISCED 5, 6 or 7' (ISCED code 004).

In addition to these dimensions, ISCED also includes an indicator for the area of knowledge and skills addressed by a programme, the **field of education**. This dimension was not used in the international reporting of upper secondary VET programmes until 2013, and has therefore not been considered in the context of this study.

Hence, a programme with the ISCED code '353' indicates a programme at upper secondary level, with the orientation 'vocational', and where participation leads to level completion, but does not give access to the next level. The ISCED 2011 manual (OECD et al., 2015) provides an extensive description of conditions that should be fulfilled to classify a programme at this level.

Sources: OECD et al. (2015); UNESCO-UIS (2012).

At a more fundamental level, changes and fluctuations in the enrolment and completion figures in statistical databases (international as well as national databases) may be an expression of real changes (increased interest in a programme), or they may be artificial, reflecting administrative changes in the way the classification is used or in reporting practices.

A general discussion of factors impacting on VET, including impacting 'real' enrolment in VET, is found in Working Paper 3 in this series. Working Paper X.X will use survey data and

Eurostat data to throw light on the possible relationship between the 'real' and the 'artificial' factors and seek to extract policy lessons from this analysis. The following factors have been tentatively identified:

Factors related to the size and education behaviour of the youth population

- *Demographic changes.* If the size of the youth population decreases, we will expect enrolment in upper secondary VET in absolute figures to decline.
- *Changes in young people's propensity to enrol in upper secondary education.* If the share of young people that leaves the education system after primary or lower secondary education increases, the enrolment in upper secondary VET will also drop and vice versa.
- *Changes in the inclination of young people (or those who help them make decisions about education) to choose a vocational pathway.*

Factors related to political or administrative decisions

- *Changes in the scope and targeting of upper secondary VET programmes.* If VET provision is changed with a view to meeting young people's learning needs and/or with a view to deliver more relevant skills to the labour market in a better way, this may have an impact on enrolment figures.
- *Reclassification of upper secondary VET programmes.* If programmes are reclassified to higher or lower ISCED levels, or if the orientation is changed, this will have an impact on enrolment figures.
- *Changes and variations in registration or reporting practices.* If countries have different approaches to using the ISCED classification, for example, to assigning level and orientation to programmes, this will lead to differences in the enrolment figures without any material reason.

Technical factors

- *The improved communication and data storage infrastructure (internet) has enabled more precise and on-time registration, which in itself may have impacted the enrolment and completion figures.*

In this study, it has been a priority to be able to identify changes at levels below that of the aggregated data found in the international databases. Tracking changes at programme level allows for a more sophisticated analysis of the relationship between enrolment figures, systemic characteristics and changes as well as other factors including changes in skill demands in the labour market and demographic change. Statistical data for enrolment in upper secondary IVET reported by each country are aggregated across all IVET programmes at Level 3. Consequently, while they provide an overview of numerical changes in the participation of upper secondary education, it is not possible to identify changes at programme level. Hence, to enable the research team to carry out more detailed analyses, statistical data and qualitative information about the IVET programmes were required.

Whereas the ISCED classification provides a relatively clear definition of an educational programme, this definition is not commonly used or understood, and hence, a 'VET programme' is by no means a well-defined concept. As the analysis required that enrolment data could be linked to VET programmes in an unambiguous manner, it was decided to use

the ISCED mappings as the point of departure for the data collection exercise. The ISCED mappings are carried out by UNESCO to serve a tool for better understanding national education systems. The mappings are spreadsheets presenting information for one school year (usually 2014 or 2015, but also in some cases 2012) about all educational programmes in a country. The information has been provided to UNESCO by the national education authorities. Among other things, it includes for each programme the name of the programme in the national language and in English, the classification of the education programme according to ISCED, duration, theoretical starting age, level in qualification framework, and the enrolment figure for the year in question.

Based on the ISCED mappings, a survey tool was developed (see the Annex for a detailed description of the tool). The survey was distributed to country experts, who were appointed based on their insight into national VET policy, as well as their insight into and access to national education statistics. In concrete terms, a unique Excel-based survey tool was developed for each country, so that the task of the country experts was to find and add enrolment data for the years 1995-2015 for each of the programmes identified in the 2011 ISCED mapping for the country.

1.4 Introduction to the findings

The very rich data provide new and interesting observations based on the trends they display and, not least, the accompanying explanations and observations by the country experts. Focusing the research at programme level enables discussions of changes in VET that cannot be grasped solely from information and figures aggregated at national level.

Before embarking on the presentation of the results of the survey, a few words need to be said about the potential for cross-country comparison of data at programme level. Looking across the number and character of VET programmes across countries, a very significant degree of heterogeneity springs to eye when it comes to the scope and number of upper secondary IVET programmes in the ISCED mappings of European countries. Some countries have few programmes with very wide target groups, others have several but narrower programmes. In some countries, the programmes are firmly located within one ISCED level, while in others, some programmes span more than one ISCED level. Finally, in some countries, programmes are delimited according to levels in the national qualification framework (NQF).

Because programmes are not comparable across countries, the comparative part of the analysis looks at countries, not programmes. Information about the volume and structure of programmes within countries is used to explain and elaborate on the different patterns identified at the country level. As the survey covers 30 countries, it has been a separate challenge to present the results in a way that aids the reader in getting a clear picture of the changes described in tables and charts. Ordering the countries in alphabetical order or EU protocol order was not found to serve this purpose well, and nor were typologies emphasising learning venue or governance model. Instead it was found that presenting the data in accordance with a geographical grouping of countries provided a good starting point for the discussion of the different 'evolutionary paths' followed by IVET at national level.

The country groups are:

- Baltic countries (Estonia, Latvia, Lithuania)
- Central European countries (Austria, Belgium, Germany, the Netherlands, Luxembourg, Slovenia)
- Nordic countries (Denmark, Finland, Iceland, Norway, Sweden)
- South East European countries (Bulgaria, Romania, Croatia)
- South Mediterranean countries (Greece, Cyprus, Malta)
- Visegrád countries (Hungary, Slovakia, Poland, the Czech Republic)
- Western Mediterranean countries (France, Spain, Italy, Portugal)
- Western countries (Ireland, the United Kingdom).

According to (Cedefop, 2015b, p. 57), this grouping, though based mainly on geo-political proximity/similarity:

‘... fits relatively well with a range of typologies, which are generally used to cluster countries based on their different system settings in the various domains of economy (e.g. approach to capitalism), welfare, skills formation, employment and industrial relations systems’.

In the context of this Working Paper, the categorisation is used mainly as an ordering device, to facilitate a clear picture of the changes, and should not be understood as a typology with an independent explanatory value.

1.5 Contents of this working paper

The following sections will unpack the changes in enrolment and completion of upper secondary VET that can be observed in country groups, in countries, and at the level of programmes.

Chapter 2.1 considers changes in enrolment and completion figures over time and at different levels of analysis. Chapter 3 considers the effects of demographic changes and changes in young peoples’ educational choices. Chapter 4 discusses the effect on enrolment figures of changes in the scope of upper secondary IVET programmes by examining the evolution in the national programme portfolios that took place between the ISCED 1997 mappings and the ISCED 2011 mappings. Finally, Chapter 5 summarises the findings and presents preliminary conclusions with relevance for policy makers and VET stakeholders.

2 Unpacking enrolment and completion in upper secondary IVET

As described in the introductory chapter, an important impetus for this study has been the observation, based on an aggregation of national statistics, that the VET sector in Europe has been declining relative to general education over the last 20 years. To gain a clearer picture, the following sections are dedicated to examining the national data on enrolment and completion provided in the survey undertaken as part of this study.

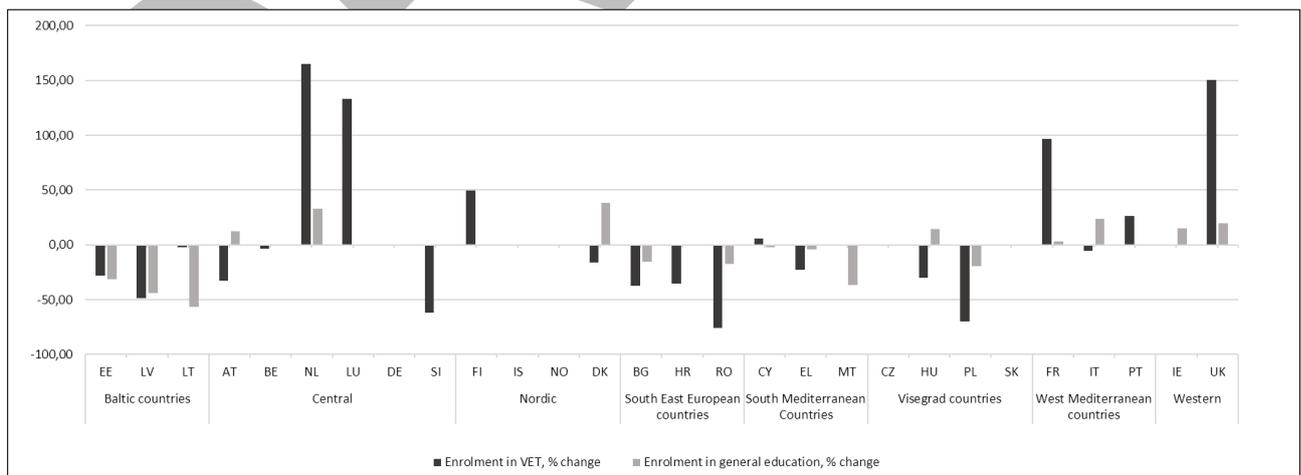
2.1 Net changes in enrolment and completion between 1995 and 2015

In the survey, the national experts were asked to provide data for enrolment and completion for all programmes described in the ISCED 2011 mapping for their respective countries. This was not an easy task, since programme definitions had changed during the period, and national statistical databases are arranged according to other classifications than ISCED in some countries. The methodological issues encountered in this exercise are described and in detail in Working Paper 3.1 in this series. However, thanks to the efforts of the experts, it was possible to construct time series for most of the 30 countries for both VET and general education at upper secondary level.

Net changes in enrolment

Figure 2-1 shows an overview of net changes between 1995 and 2015 in enrolment figures in upper secondary education (VET and general education) reported by national experts. The figure shows the percentage change in enrolment figures for upper secondary VET (black) and upper secondary general education (grey). The figure indicates that the enrolment in VET has been declining in several countries, but also that it has increased considerably in others.

Figure 2-1: Net change in enrolment in upper secondary education (VET and general education) 1995-2015. % increase/decrease



Source: Survey to country experts, own calculations.

Notes: Spain and Sweden are omitted from the chart because the figures from these two countries indicate an abnormally high growth, which is due to missing data for entire programmes before 2000. Not all time series span 1995-2015. Time series with starting point 2000 or earlier and endpoint 2010 or later were included. Data from the following countries are either missing entirely, or data from before 2000 are missing for either VET, general

education or both: the Czech Republic, Germany, Finland, Iceland, Ireland, Luxembourg, Norway, Slovenia, and Slovakia.

Enrolment in both VET and general education has declined in all the Baltic countries and the South East European countries, while the picture is quite mixed in the remaining country groups. Table 2-1 shows the countries arranged according to the direction of change in enrolment in VET and general education.

Table 2-1: Overview of net changes in enrolment in upper secondary education between 1995 and 2015

General Education \ VET	+	-	No change or data for VET incomplete
+	The Netherlands France United Kingdom Sweden	Austria Denmark Hungary Italy	Ireland
-	Cyprus Spain	Estonia Latvia Lithuania Bulgaria Romania Greece Poland	Malta
No change or data for general education incomplete	Finland Luxembourg Portugal	Belgium Croatia Slovenia	Czech Republic Germany Iceland Norway Slovakia

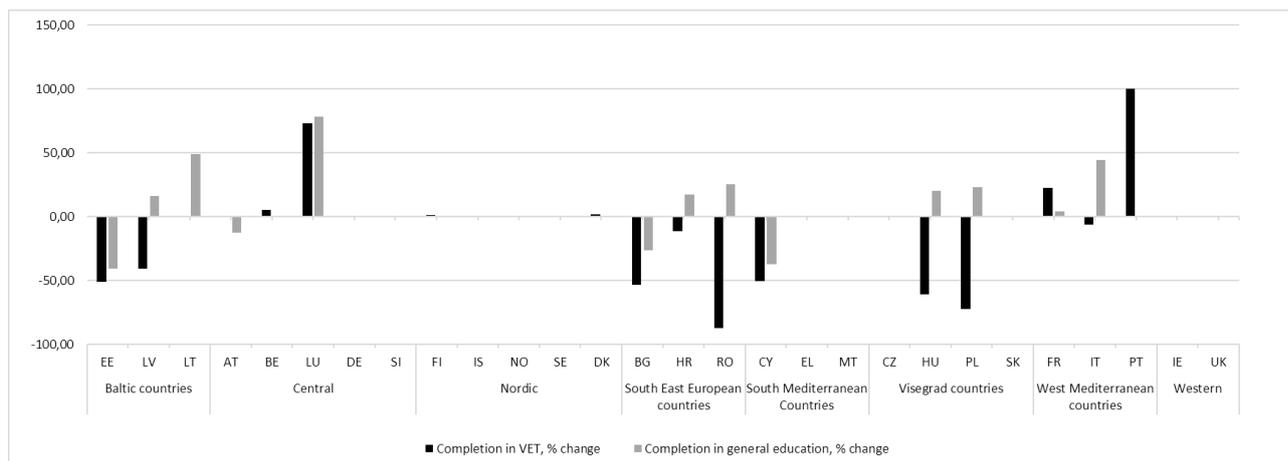
Source: National enrolment data reported in survey to country experts, own calculations.

In the upper left corner, four countries have experienced growth in enrolment in both VET and general secondary education. There can be two possible reasons for this: Either the youth population has increased, or there has been a growing propensity to enrol in upper secondary education among young people. The reverse can be said about the seven countries where enrolment in upper secondary education (VET as well as general education) has declined. Later in this paper, the effect of demographic changes will be discussed. In four countries, enrolment in VET declined, while enrolment in general upper secondary education increased. Two of these (Denmark and Austria) are traditional VET countries with dual systems, and in both countries, there has been difficulties getting employers to provide sufficient apprenticeship offers. Needless to say, a lack of training companies has a negative influence on the attractiveness of apprenticeship-based VET.

Net changes in completion

Overall, the availability and quality of data on completion from the national data bases is not as good as the data on enrolment. Therefore, caution must be exercised in drawing firm conclusions based on **Error! Not a valid bookmark self-reference.** Figure 2-2.

Figure 2-2: Net change in completion of upper secondary education (VET and general education) 1995-2015. % increase/decrease



Source: Survey to country experts, own calculations.

Notes: Spain is omitted from the chart due to incomplete data series. The starting date is not 1995 for all countries, see note to Figure 2-1. Data from the following countries are too incomplete to allow for this calculation: Czech Republic, Germany, Finland, Iceland, Ireland, Luxembourg, Norway, Slovenia, Slovakia.

The figure indicates that countries with a long-established and stable system of VET provision have experienced little change in completion figures. For example, completion of upper secondary VET courses in Denmark increased only by 1.7% from 1995 to 2015. In countries where there has been a large increase in completion numbers, the research shows that typically new VET programmes have been introduced in the period, in some cases replacing non-formal education programmes that were not previously reported to the UOE data collection.

For example, in the Netherlands, the two then existing learning pathways in VET (work-based and school-based) became part of the same qualification framework in 1996, and no completion data for VET are available before that date. The completion figure increased by 647% from 1996 to 1998. In the years after 1998, the growth rate evened out as could be expected for a new programme, where it takes some years before the output reflects the stock of students.

Looking only at the net changes over the entire timespan only provides part of the story. It does not tell us if the change has taken place in a continuously, or if it took place over one or more short periods. Neither does it tell us if the growth/decline figure is itself a net result of opposing movements at the programme level (some programmes growing, others declining).

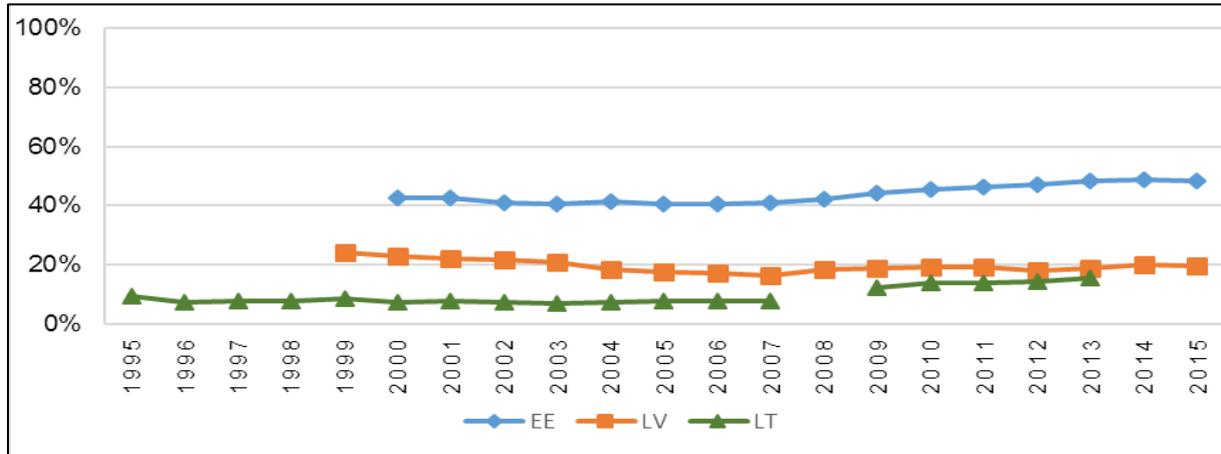
Therefore, it is necessary to look in more detail at time series and complementary information to unpack the more detailed nature of the changes that have led to the growth or decline in enrolment and completion.

2.2 Changes in VET's share of enrolment in upper secondary education – national level

This section presents and discusses the development of VET's relative share of enrolments in all education programmes at ISCED Levels 3 and 4. In this context, VET was defined as education programmes reported to the ISCED mappings with orientation 'V'. The figures are

presented for the countries by country groups in a series of charts based on the figures for enrolment at programme level delivered by the survey.³

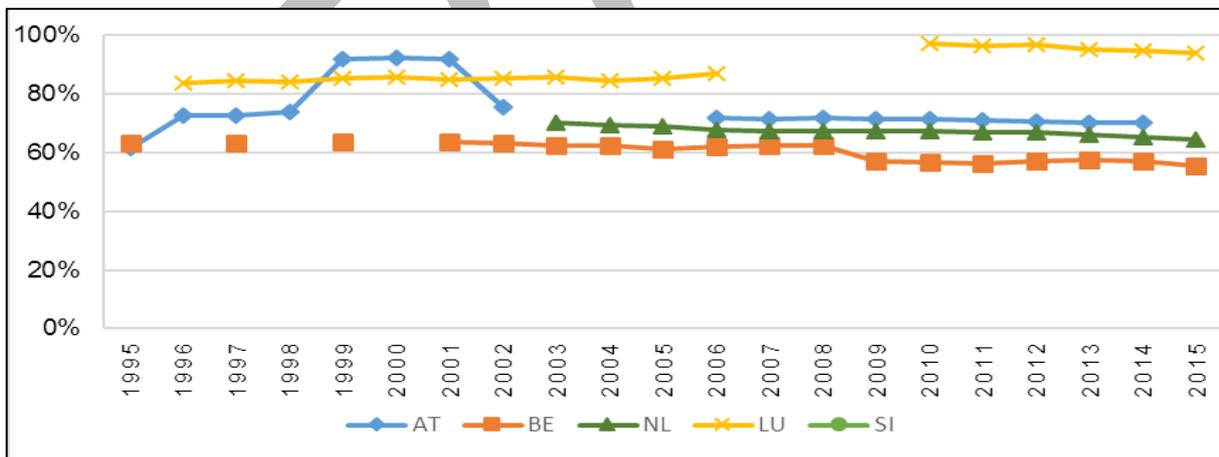
Figure 2-3: Baltic countries: Enrolment in VET, % of enrolment in education programmes at ISCED level 3 and 4



Source: National statistics reported in survey to national experts.

It should be remembered that the net development in absolute enrolment figures between 2008 and 2015 was negative in all three Baltic countries (Figure 2-1, p. 13). However, as Figure 2-3 shows the picture is quite different when considering the relative figures for VET's share of enrolment. In Latvia, VET's share fluctuated around 20% throughout the period, but in Estonia and Lithuania, VET's share increased.

Figure 2-4: Central European countries: Enrolment in VET, % of enrolment in education programmes at ISCED level 3 and 4



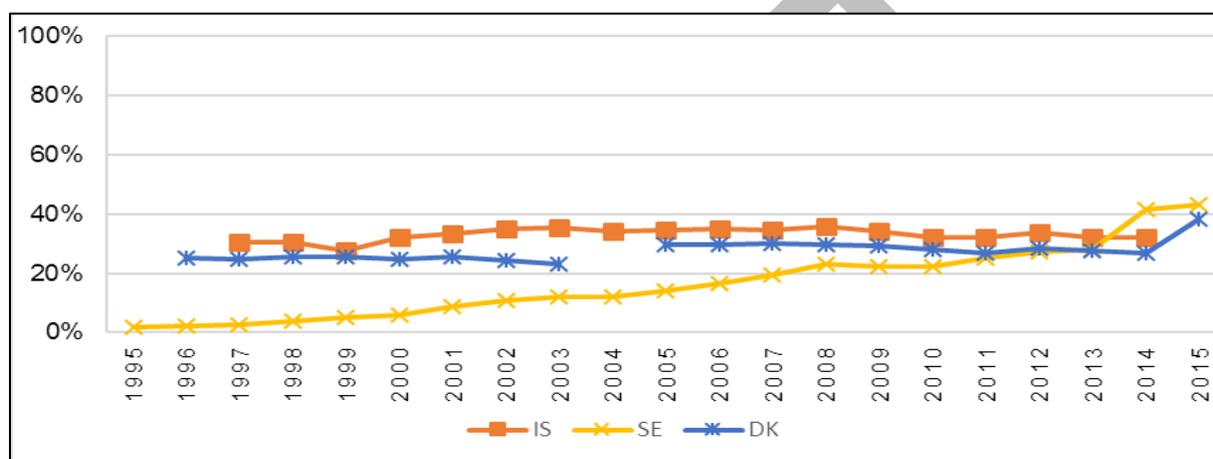
Source: National statistics reported in survey to national experts Notes: Data for Germany and Slovenia omitted due to incomplete datasets.

³ While the direction of changes shown in the graphs is generally valid, the vertical position of the graph lines (i.e., the exact figure for VET's share) should be interpreted with care. The background for this is that information in the national databases is linked to national programme definitions, which are different from the delimitation of programmes used for the ISCED mapping in many cases. Therefore, when the figures for some countries indicate that the share of VET in upper secondary education fluctuates between, e.g., 70% and 90%, this does not reflect the true situation.

In the Central European countries, VET's share of enrolments appears to be considerably larger than in the Baltic countries – above 50% in all countries throughout the period. Only in one country – Luxembourg – do the figures indicate an increase in VET's share. In Austria, the Netherlands and Belgium, there appears to be a clear decreasing trend, at least after 2000 as data before 2000 are patchy or missing in all three countries.

However, it is important to keep in mind that these trends may mask shifts at the programme level, i.e., increasing enrolment in some programmes and decreasing enrolment in others. In Austria, for example, the development of the aggregated share of VET conceals a decrease in enrolment in apprenticeship-based VET, which is almost offset by an increase in the enrolment in school-based VET in the period.

Figure 2-5: Nordic Countries: Enrolment in VET, % of enrolment in education programmes at ISCED level 3 and 4



Source: National statistics reported in survey to national experts

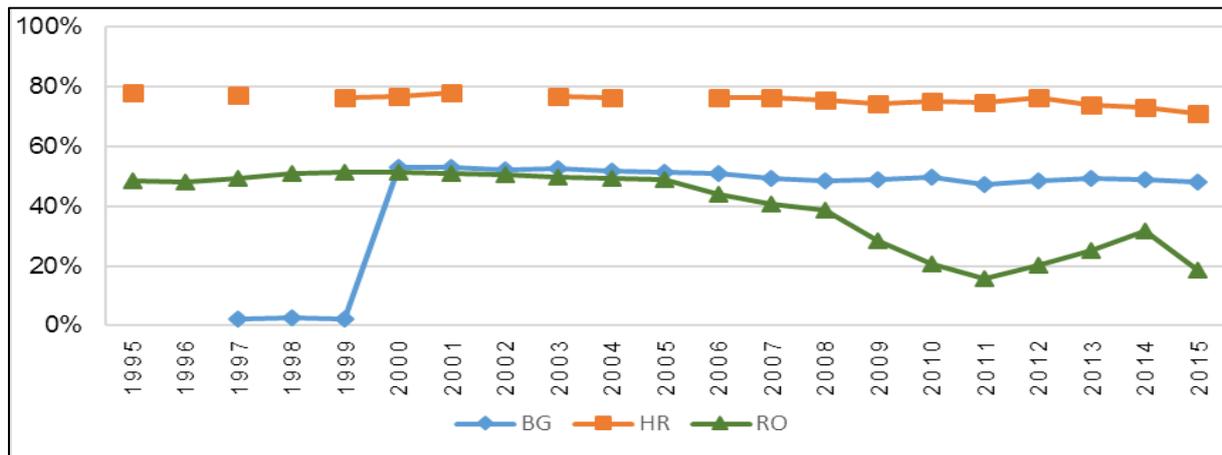
Notes: Denmark: Figures from 1995 and 2015 omitted due to data for a major GE programme missing. Data break between 2003 and 2005 due to redefinition of VET programmes. Finland and Norway: Only data for VET available.

In the Nordic countries (Figure 2-5), the picture is also mixed. In Denmark and Iceland, the trend was stable, even slightly increasing until 2009, followed by a slow decrease. In Denmark, the apparent increase in the figure between 2014 and 2015 is due to missing data for 2015 for a general education programme ('Higher preparatory examination, single subject'), which in 2014 represented 40% of all enrolments in education at Levels 3 and 4.

In Sweden, on the other hand, VET's share appears to have been steadily increasing. This does not necessarily reflect the true situation on the ground, since it has been extremely difficult to construct valid time series based on Swedish education data.⁴

⁴ According to the Swedish national expert, Swedish education data are not categorised according to the programmes in the ISCED mappings and recording practices have changed several times resulting in breaks in data series.

Figure 2-6: South East European Countries: Enrolment in VET, % of enrolment in education programmes at ISCED level 3 and 4

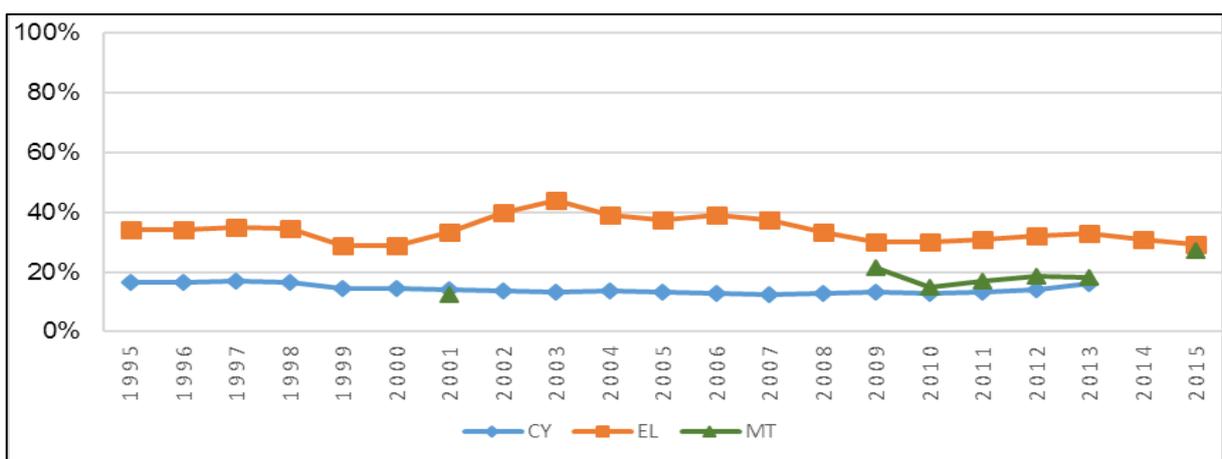


Source: National statistics reported in survey to national experts

In the South East European countries (Figure 2-6), the picture is even more mixed. In Bulgaria, the sudden jump in VET's share from 1999 to 2000 is due to unavailability of data for the largest VET programmes before 2000. In addition, the apparent stability of VET's share conceals significant shifts between programmes. In 2002, the school-based programme 'VET programmes for second level of professional qualification' was extended to include an extra year ('13th Grade'), which increased the enrolments slightly. However, in 2011, the 13th Grade was cancelled and students transferred to third degree programmes of professional qualification, which are also school-based, but where work-based elements have been included since 2015.

In Romania, the 'vocational schools' (combined school and work-based-learning) and 'apprenticeship schools' (work-based-learning) coexisted until 2002. During this period, VET's share was increasing slightly. In 2003, a new vocational pathway for gymnasium graduates was introduced, and in the following years VET's share decreased every year until 2012, when a new vocational pathway for graduates of the 9th grade was introduced, lasting 2 years and giving access to 3 years of high-school causing VET's share to increase again. However, a new vocational pathway for gymnasium graduates, with a duration of 3 years, was introduced in 2014 leading the share to drop again. This example clearly illustrates that the 'labelling' of programmes according to the orientation dimension of the ISCED classification can make it difficult to arrive at a true picture of VET's situation on the ground based solely on statistical data.⁵

Figure 2-7: South East Mediterranean Countries: Enrolment in VET, % of enrolment in education programmes at ISCED level 3 and 4

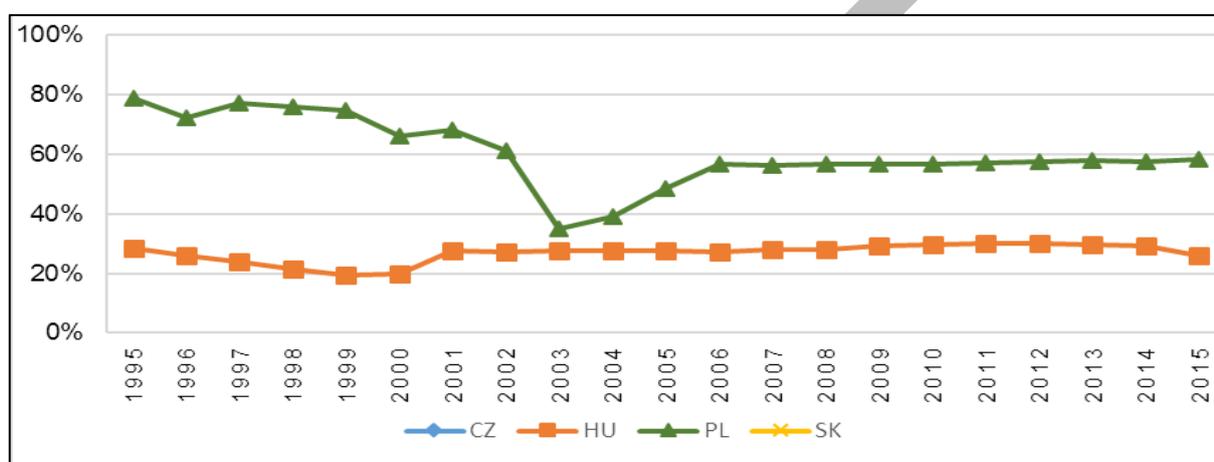


Source: National statistics reported in survey to national experts

Notes: Data for VET for Malta only available after 2009.

In the South East Mediterranean country group (Figure 2-7), VET's share of enrolment in Cyprus has remained quite stable with only minor fluctuations. In Greece, there has been more variation, with a maximum number in 2003. However, this variation is largely due to data availability issues.⁶ Finally, Malta does not store statistics centrally. Data were obtained from many different documents, and the data categories did not always match the ISCED definitions.

Figure 2-8: Visegrád Countries: Enrolment in VET, % of enrolment in education programmes at ISCED level 3 and 4



Source: National statistics reported in survey to national experts.

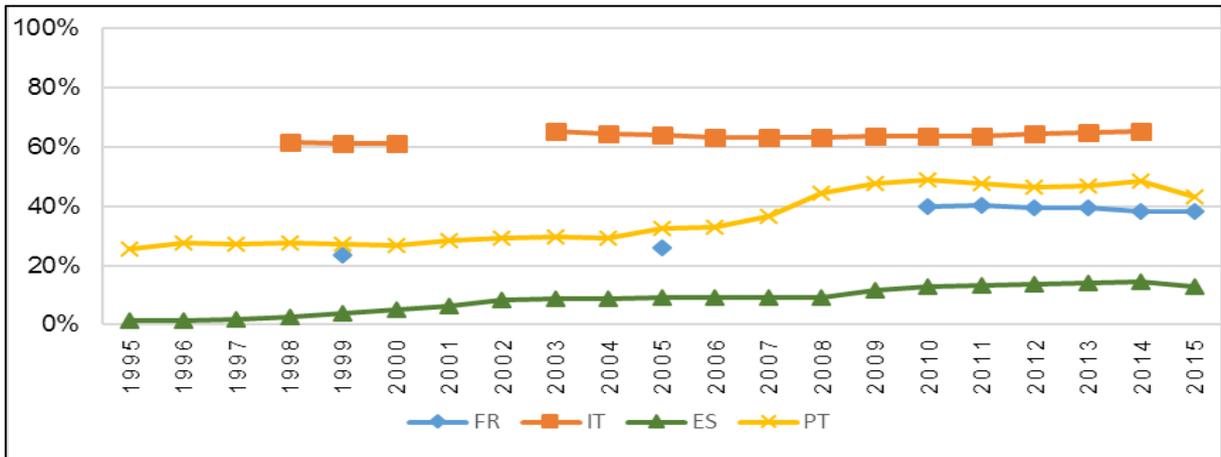
Notes: Poland: Czech Republic: No enrolment data for upper secondary general education has been made available. Slovakia: Data incomplete.

Among the Visegrád countries (Figure 2-8), the survey provided reasonably complete data series from Hungary and Poland. In Poland, the fluctuations in VET's share of enrolments in the period up to 2006 can be shown to be mainly a product of fluctuations in the enrolment in general education caused mainly by reclassification of programmes and by breaks in time series. The duration of the main general education programme changed between three and four years a few times during the 1995-2015 period, and in some periods, include both a three year and a four year sub-programme. In addition, one general education programme for adults including courses at both primary and secondary schools was reported as VET at level 3 until 2002. After this date, the programme was separated into two programmes, one at Levels 1-2 and one at Level 3.

In Hungary, the share has been almost constant since 2001, only dropping a little in 2015. This decrease reflects a quite significant decrease in enrolment in the main IVET programme from 100,032 in 2014 to 87,639 in 2015.

⁶ For example, there are no data available for Second Chance Schools, which started operating in 2003. Moreover, after 1999, there are no data for IEK, a Level 4 programme at the Institute of Vocational Training, although descriptions in reports indicate increasing enrolment in this programme

Figure 2-9: West Mediterranean Countries: Enrolment in VET, % of enrolment in education programmes at ISCED level 3 and 4



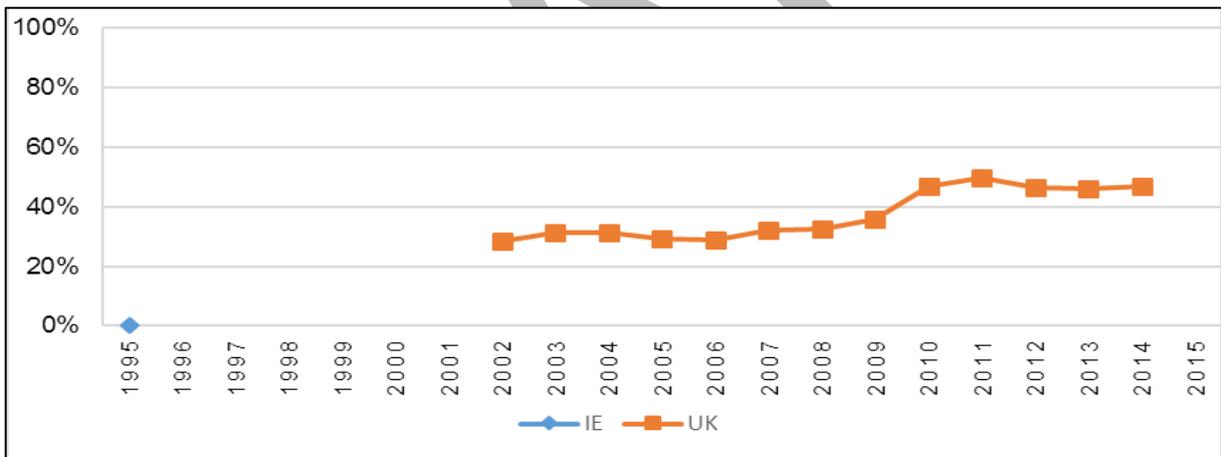
Source: National statistics reported in survey to national experts.

Notes: FR: Data for general secondary education only available for 1999, 2005 and the years following 2010.

In the West Mediterranean countries (

Figure 2-9), VET’s share of enrolments has increased in Portugal and Spain, again with a small drop in 2015, while the share has been almost constant in Italy and slightly decreasing

Figure 2-10: Western Countries. Enrolment in VET % of enrolment in education programmes at ISCED level 3 and 4



in France (since 2010).

Finally, in the Western countries, it has only been possible to construct a time series for the United Kingdom. The data indicate that VET’s share has increased from 2002 onwards, most pronounced in the 2008-2011 period. The figures confirm that overall, the enrolment in education at Levels 3 and 4 has increased, but enrolment in VET has increased at a faster pace than enrolment in general education.

The above walk-through of the development of VET’s share of enrolments in the eight country groups has illustrated that there is no evidence of a general decline in the national importance of VET, expressed by its share of enrolments in education at Levels 3 and 4. In fact, VET’s share has remained quite stable in most of the countries. In most of the cases where the enrolment figure appears to fluctuate, the ‘drops’ or ‘increases’ can be explained by factors related to statistical methods; to unavailability of data for specific programmes and periods in some cases; in other cases, to re-classification of entire programmes or parts of

programmes with respect to level, orientation, or both. The following section zooms in on a few countries to examine the changes in enrolment at programme level in more depth.

2.3 Shifts in enrolment at programme level

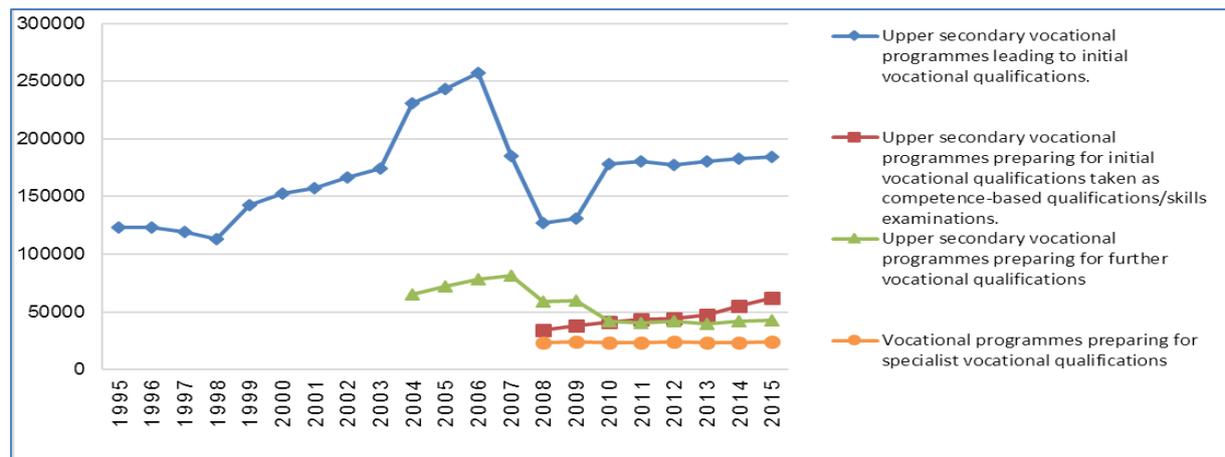
This section discusses the nature of the shifts between different types of VET programmes that have taken place between 1995 and 2015. The analysis will consider three countries that have been chosen to represent different overall trends in enrolment in VET as well as different types of VET systems, geographical variations and country sizes:

- *Finland.* While the survey did not provide information to allow a calculation of the development of VET's share of enrolments, the ISCED mappings indicated a significant increase in enrolment in VET between 2008 and 2015 exceeding that of most other countries.
- *France.* France experienced a decline in VET's share of enrolments since 2008
- *Cyprus.* In the survey, Cyprus came out as the country where VET's share of enrolments in education at Levels 3 and 4 was the most stable during the 20 years from 1995 to 2015.

Below, the developments at programme Level in the three countries are described and common traits and differences are identified.

First, Figure 2-11 (page 22) shows the 1995-2015 enrolment figures for Finland. The programme 'Upper secondary vocational programmes preparing for initial vocational qualifications taken as competence-based qualifications/skills examinations' was not, as it would appear, initiated in 2008, but in 1994. However, enrolment figures are not available until that time. Likewise, the other two programmes towards the bottom of the diagram were old programmes, where, but prior to 2004, enrolments for all VET programmes at these levels were registered together. This also serves to explain the rapid drop in the enrolment figures for the main VET programme at Level 3 from 2006 to 2008.

Figure 2-11: Finland. Enrolment in VET programmes at Levels 3 and 4. Absolute figures

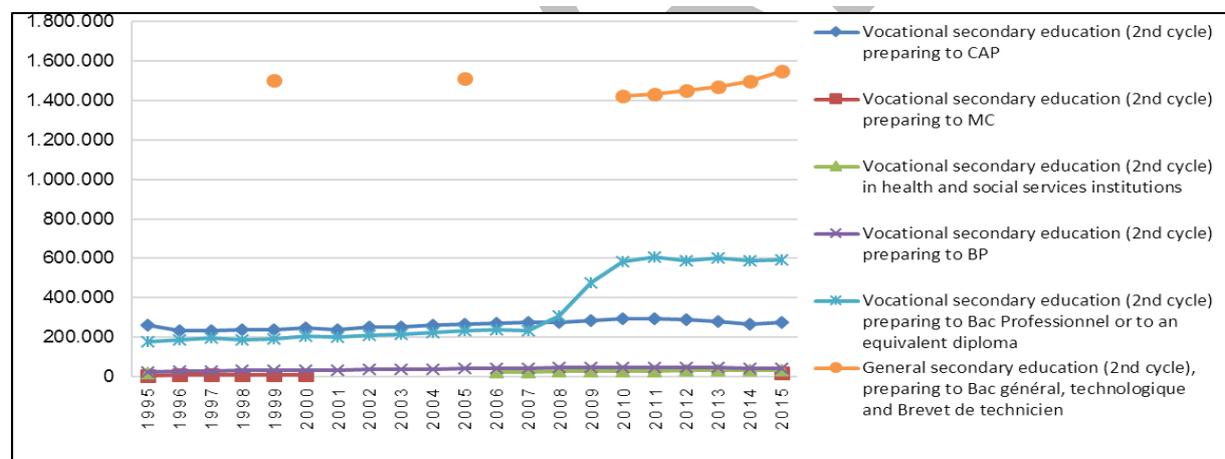


Source: National statistics reported in survey to national experts.

Moreover, it is interesting to note that the main increase is in the programme allowing students to obtain a VET qualification based on recognition of their existing skills, while the 'taught' programmes experience more modest increases in enrolment.

Figure 2-12 shows the enrolment figures for education programmes at Levels 3 and 4 in France. It is immediately clear that VET's share of enrolments has dropped since 2009, because enrolment in general secondary education has risen steadily in real figures.

Figure 2-12: France. Enrolment in education programmes at Levels 3 and 4. Absolute figures



Source: National statistics reported in survey to national experts.

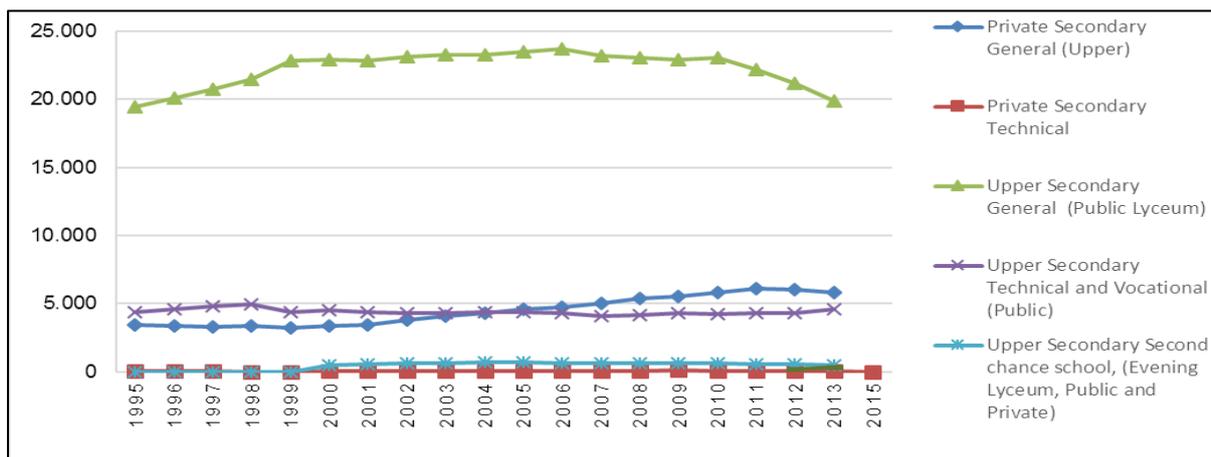
The distribution of the enrolment in VET clearly indicates that the most popular programmes are two programmes at ISCED Level 3, i.e., the 'Vocational secondary education (2nd cycle) preparing for CAP⁷', where enrolment has been very stable over the years, and the 'Vocational secondary education preparing for 'Bac Professionnel' or an equivalent diploma'. As the figure shows, enrolment in the latter programme increased dramatically after 2008

⁷ Certificat d'aptitude professionnelle

because the programme was shortened from four to three years⁸. According to the French national expert, the increase in enrolment has mainly been in courses leading to occupations in trade and services.

Finally, Figure 2-13 illustrates the situation in Cyprus, where VET's share of enrolment has remained relatively stable.

Figure 2-13: Enrolment in education programmes at ISCED Levels 3 and 4, Cyprus. Absolute figures



Source: National statistics reported in survey to national experts

Looking at the development at programme level indicates that enrolment in VET programmes ('Private Secondary Technical' and 'Upper Secondary Technical and Vocational School') has indeed been rather stable, with enrolment in 'Upper secondary Technical and Vocational (Public)' even increasing a little in the late part of the period. Fluctuations have occurred in general education, where some enrolments in 'Upper Secondary General (Public Lyceum)' appear to have shifted to 'Private Secondary General'. In addition, the total number of enrolments in general education at Levels 3 and 4 has decreased slightly, causing the total figure for enrolments at this level to decrease since 2009.

This last observation leads on to considering changes in the size and education behaviour of the youth population, which are both very important factors impacting on enrolment trends.

⁸ Before, 2 years were spent preparing for BEP (brevet d'études professionnelles) and two years preparing for the bac pro itself. Now, students take the BEP at the end of the 2nd year.

3 Effects of demographic change and education behaviour

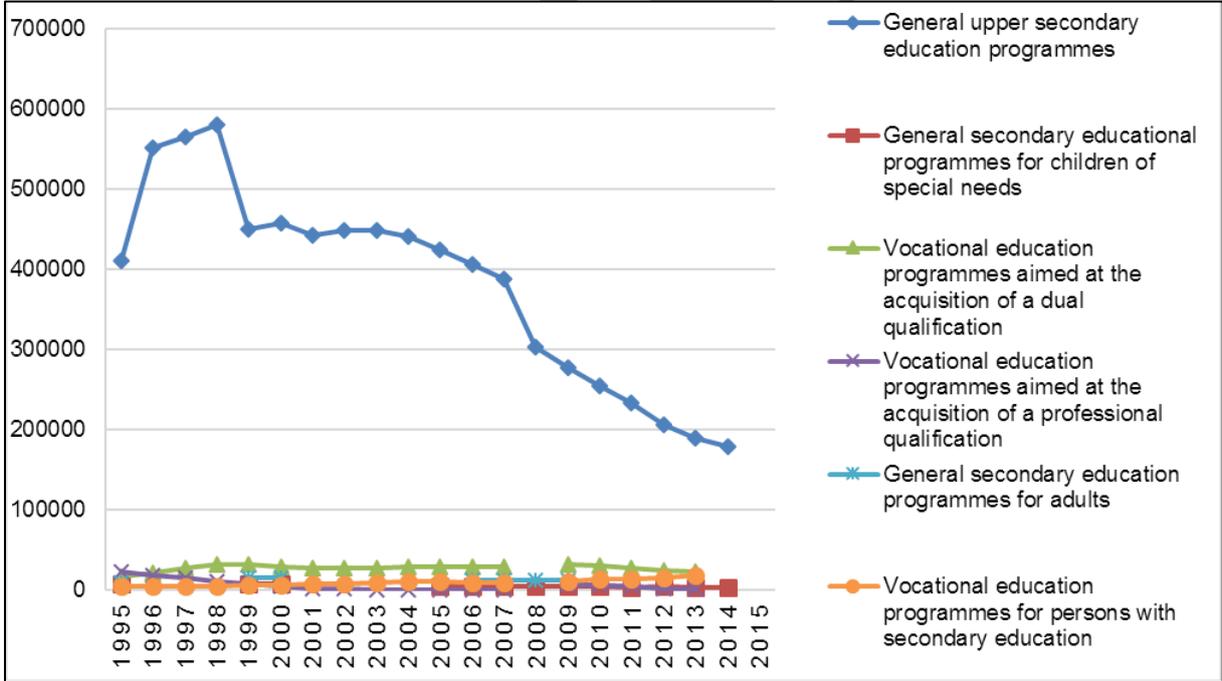
The previous sections have indicated that with a few notable exceptions (Spain, Sweden, the Netherlands, France, and the United Kingdom) total enrolment across all education programmes at ISCED Levels 3 and 4 – including both VET and general education – has decreased between 1995 and 2015. In a few countries (Austria, Denmark, Hungary, and Italy), the decrease in enrolment in VET has been accompanied by an increase in enrolment in upper secondary general education. In seven countries (all three Baltic countries and Bulgaria, Romania, Greece, and Poland), enrolment in VET as well as general education at Level 3 and 4 has declined considerably.⁹ In these countries, still fewer young people enter upper secondary education. This would indicate that the enrolment figures are influenced *either* by demographic trends (declining youth population) *or* that the propensity to enrol in upper secondary education has decreased (i.e., out of a youth cohort fewer start upper secondary education). This section and the next will consider these factors more closely.

First, the case of a decline in total enrolment in education at Levels 3 and 4 is considered. To illustrate the situation, data for Lithuania and Hungary will be examined, since both countries have experienced significantly declining enrolment.

3.1 Lithuania – shrinking youth population opting out of education

Figure 3-1 shows enrolment in upper secondary education programmes in Lithuania.

Figure 3-1: Lithuania: Enrolment in upper secondary education, Levels 3 and 4, absolute



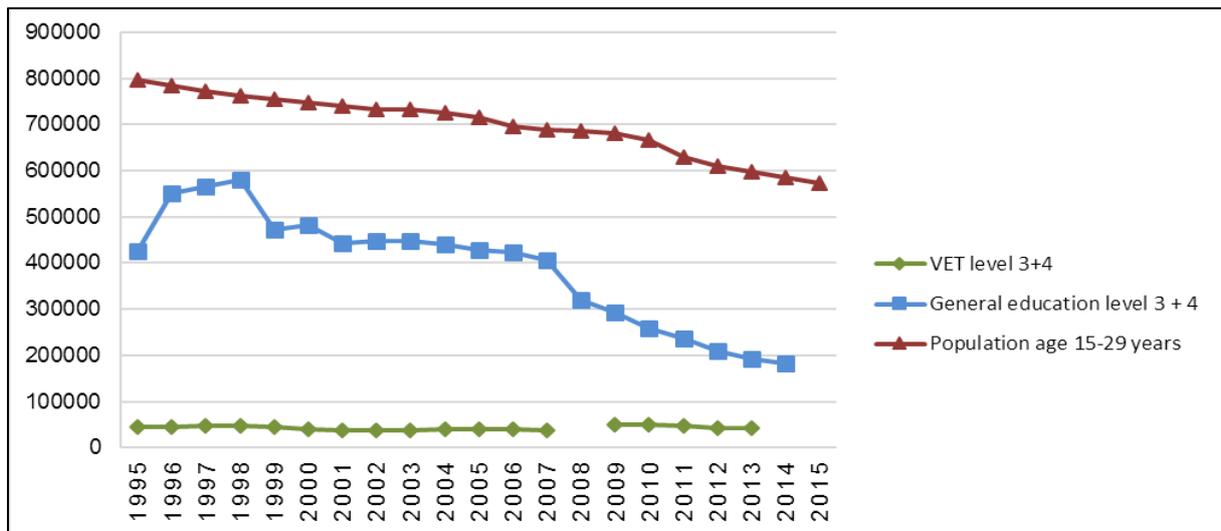
figures

Source: National statistics reported in survey to national experts

⁹ For the remaining countries, we have insufficient data about enrolment in either VET or general education to establish whether total enrolment has dropped or increased.

The figure immediately indicates a drastic decline in enrolment since 1998 in the main general upper secondary education programmes (which in 1998 stood for 92% of enrolments at this level), while enrolment in VET programmes appears much more stable, albeit at much lower levels. However, if the enrolment figures for the different VET programmes are aggregated, the resulting figures being complemented with figures for the size of the youth population, a slightly different picture emerges (cf. Figure 3-2).

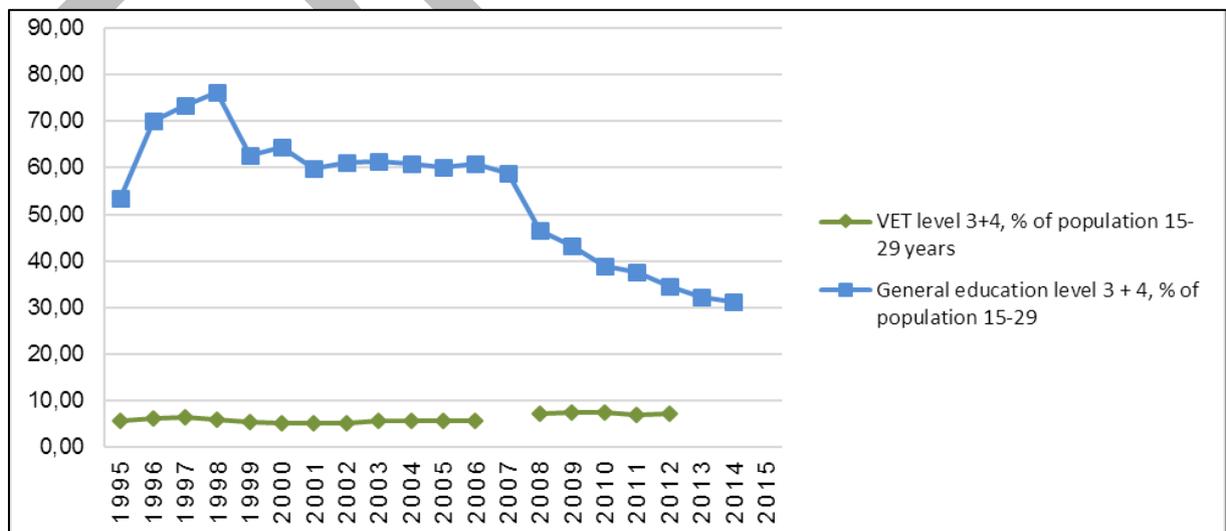
Figure 3-2: Lithuania: Enrolment in IVET and general education at ISCED Levels 3 + 4, absolute figures, and population aged 15-29 years



Source: National statistics reported in survey to national experts. Demographic data from Eurostat ((demo_pjangroup)), own calculations.

The figure indicates that the decreasing enrolment in general education is a direct result of a decrease in the youth population.

Figure 3-3 Lithuania: Enrolment in IVET and general education at ISCED Levels 3 and 4, % of population aged 15-29 years



Source: National statistics reported in survey to national experts. Demographic data from Eurostat ((demo_pjangroup)), own calculations.

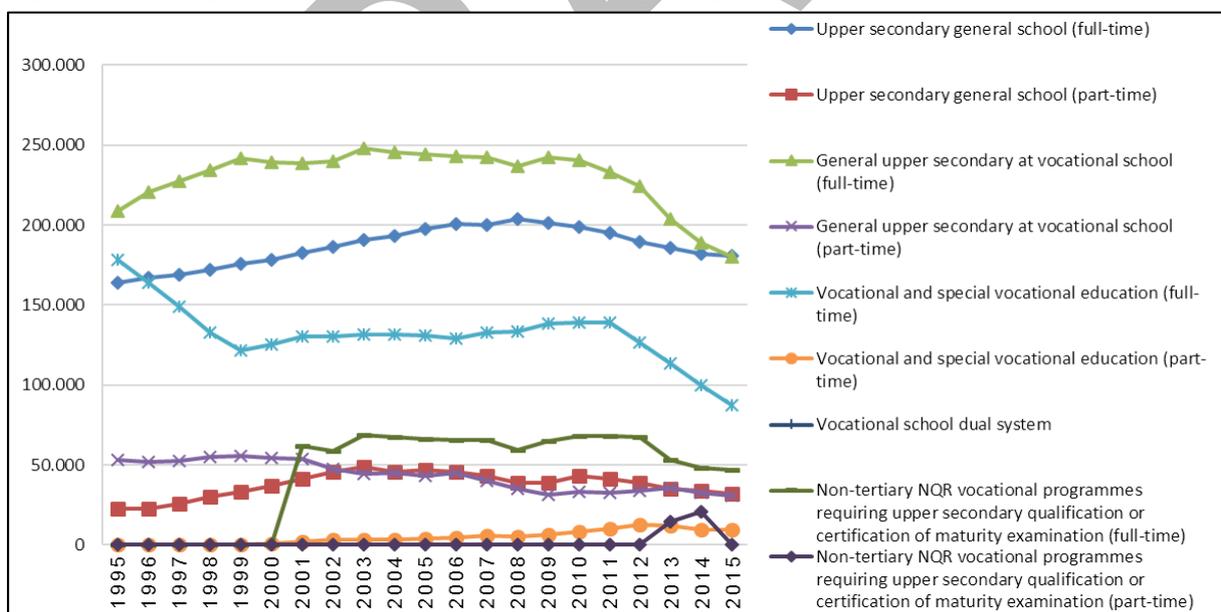
This is confirmed by Figure 3-3, which shows the development of the share of young persons enrolled in general education and VET at Levels 3 and 4. The chart shows that not only did the absolute number of young persons enrolled in general upper secondary education drop significantly, the share of the age group enrolled in general education at these levels dropped from about 60% in the years before 2007 to about 30% in 2014. Meanwhile, the share of young people enrolled in VET has been much more stable, albeit at a much lower level (5% - 7%).

Consequently, decreasing enrolment in VET is mainly due to a significant decrease in the size of the young population in Lithuania. The (small) share of young people who choose a vocational pathway has remained reasonably constant, which speaks positively to the attractiveness of VET in Lithuania. However, in a wider social perspective, the rapidly dropping share of young people who appear to deselect upper secondary education altogether is quite worrying. Regrettably, our data do not provide clues to what becomes of this growing group of young people - whether they have migrated out of the country, gone directly into employment or whether they have joined the NEET (not in employment, education or training) group.

3.2 Hungary – shrinking youth population, increasing tendency to embark on education

We have carried out the same exercise for Hungary. Like in the Baltic countries, enrolment in VET at ISCED Levels 3 and 4 dropped between 1995 and 2015. The absolute enrolment figures are shown in Figure 3-4.

Figure 3-4: Hungary, enrolment in upper secondary programmes at Levels 3 and 4



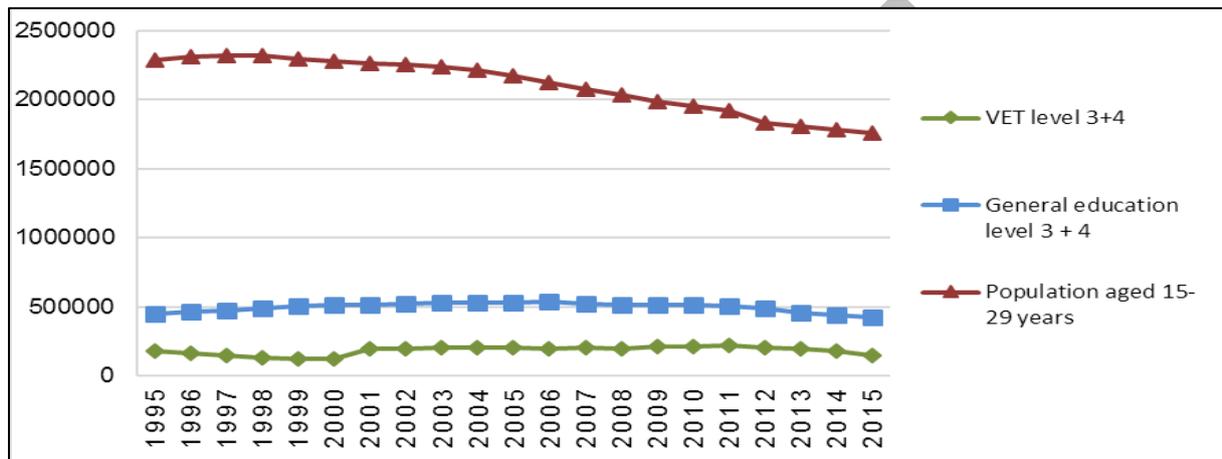
Source: National statistics reported in survey to national experts.

The upper secondary education system is much more complex in Hungary than in Lithuania, offering a much higher number of education programmes. Programmes are differentiated according to provider (e.g., general programmes are taught at vocational schools), mode of delivery (full time/part time), and entry requirements.

For almost all programmes, the figure shows a decrease in enrolments starting between 2008 and 2011, most pronounced for the main vocational programmes and general upper secondary education.

Figure 3-6 indicates that in Hungary, like in Lithuania, the youth population has dropped considerably since 1997, but without the accompanying decrease in the number of young people enrolled in education at ISCED Levels 3 and 4. A slight decrease has been observed, but not of the relative magnitude seen in Lithuania.

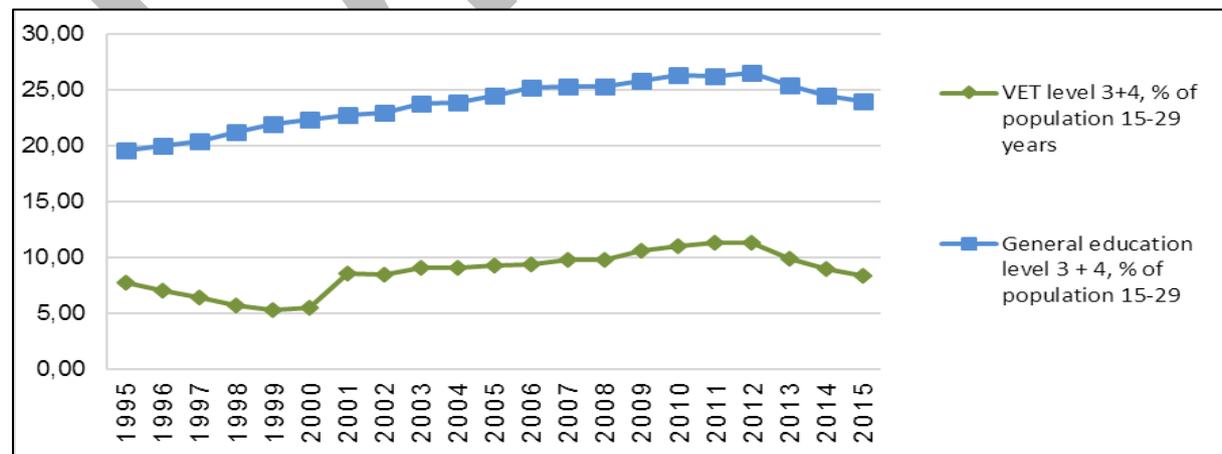
Figure 3-5: Hungary: Enrolment in IVET and general education at ISCED Levels 3 + 4, absolute figures, and population aged 15-29 years



Source: National statistics reported in survey to national experts. Demographic data from Eurostat ((demo_pjangroup)), own calculations.

Finally, Figure 3-6 shows the aggregated figures for VET and general education as shares of the target population. The figure indicates an increasing propensity to enrol in education until 2012. Since 2012, the share that enrolled in either type of education has decreased - however, the shares are still at a higher level than in 1995.

Figure 3-6: Hungary: Enrolment in IVET and general education at ISCED Levels 3 + 4, % of population aged 15-29 years



Source: National statistics reported in survey to national experts. Demographic data from Eurostat ((demo_pjangroup)), own calculations.

Again, the survey does not tell us much about the background for the apparent young people's inclination not to enrol in upper secondary education. However, possible contributing factors include:

- More young people than previously choose to enter the labour market after completing primary or lower secondary education rather than continuing into upper secondary education.
- Students are enrolled in education programmes at Levels 3 and 4 for a shorter time than previously before moving on, either to the labour market or into education at higher levels.
- A larger share of the young population than previously have left the country to take up education or work in other countries.

To get an overview of the relative importance of factors across Europe, the following section briefly discusses the relationship between demographic trends and enrolment figures for each of the eight country groups used to structure the data of this study.

3.3 Enrolment and demographic changes across Europe

The subsequent section discusses the situation with respect to demographic changes across Europe and their relationship with enrolment in VET.

Baltic countries

Like in Lithuania, albeit less pronounced, the youth population has shrunk in Latvia and Estonia. However, the shares of young people enrolled in VET and general education in these two countries remained relatively stable at a low level (below 15%). In both countries, the share of the young population enrolled in general education has declined, while the share enrolled in VET has increased a little (Estonia) or decreased marginally (Latvia). Hence, there has been a minor shift away from general education in the Baltic countries and towards VET, if the demographic changes are taken into account. However, and like in Lithuania, since the mid-2000s, a still smaller share of the youth population was enrolled in education at upper secondary level.

Central countries

In the Central countries, the decline in the youth populations has not been as pronounced as in the Baltic countries. The exception is Slovenia, where the youth population decreased by 24% between 1995 and 2015. In the Netherlands, Belgium and Austria, the youth population declined until 2003, when it started growing again, while in Luxembourg, it remained stable during the twenty years under review.

In Belgium, Luxembourg and Slovenia, the share of the youth population enrolled in VET as well as in general education remained fairly stable throughout the period. In the Netherlands and Austria, the share enrolled in general education also remained comparatively stable, but enrolment in VET fluctuated considerably in both countries. An increasing share enrolled in VET until the mid-2000s in both countries, after which there has been a pronounced drop, which has not been offset by growth in the share enrolled in general education.

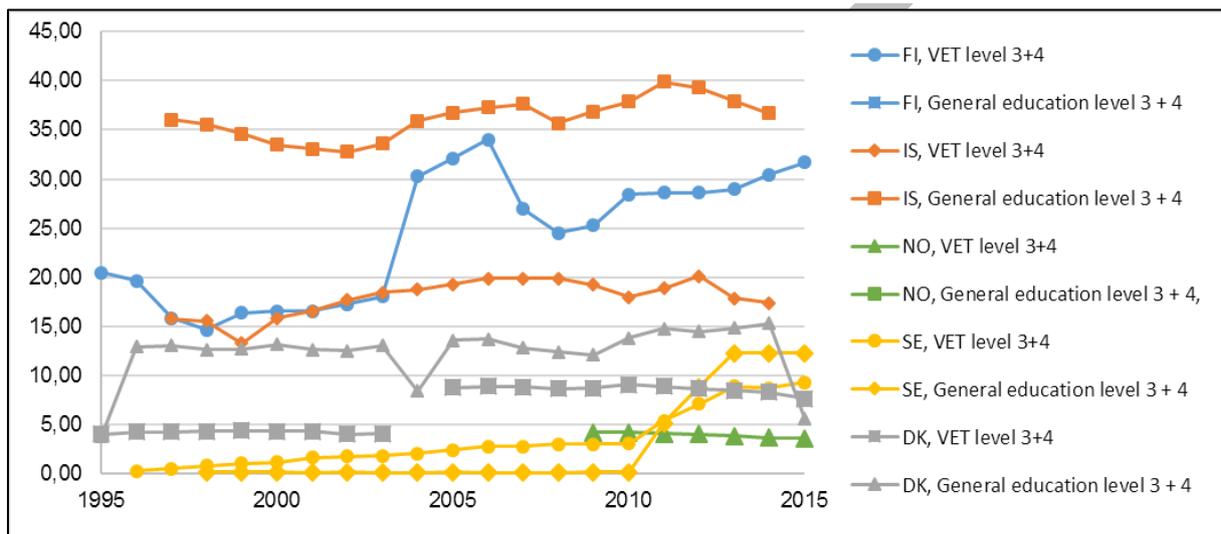
Consequently, it appears, that these two countries have experienced a declining tendency to enrol in upper secondary education among young people. However, as already noted, this

conclusion may be the result of a number of interacting factors, and further investigation would be needed to ascertain the relative importance of these factors.

Nordic countries

The picture in the Nordic countries is very different from the Baltic countries. Like in the Netherlands, Belgium, and Austria, the youth populations of the Nordic countries declined until approximately 2005, followed by an increase in the subsequent years – most pronounced in Sweden, Norway, and Denmark, while the Finnish and Icelandic youth populations remained stable during the entire period.

Figure 3-7: Nordic countries. Enrolment in VET and general education at ISCED Levels 3 + 4, % of population aged 15-29 years



Source: National statistics reported in survey to national experts. Demographic data from Eurostat [demo_pjangroup]), own calculations.

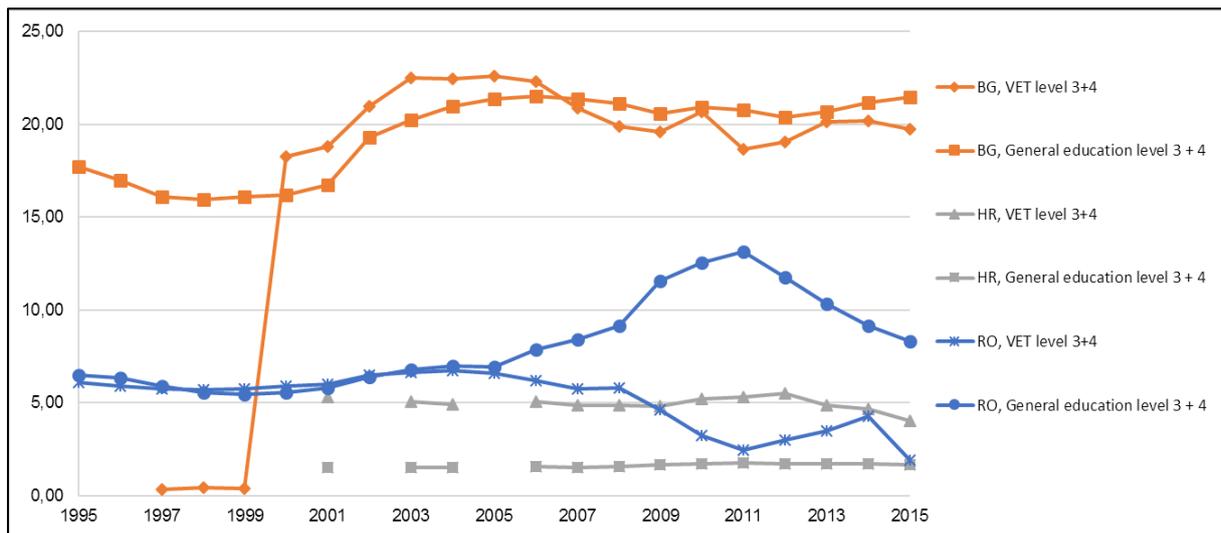
The shares of young people enrolled in VET and general education in the Nordic countries display significant fluctuations over time, most prominently in Finland, which saw large ups and downs in VET enrolment, but with an underlying increasing trend, possibly reflecting the changes in the provision of VET and the introduction of competence-based VET qualifications.

The Swedish figures indicate a significant increase in enrolment in both VET and general education after 2010. However, some of the increase is artificial, since it was caused by changes in registration practices. Denmark is the only Nordic country where the data clearly indicate that young people have chosen general education over VET after 2009.

South Eastern European countries

Like in the Baltic countries, the South Eastern European countries have experienced a decline in the youth population over the years, most pronounced in Romania and Bulgaria (see Figure 3-8).

Figure 3-8: South Eastern European Countries: Enrolment in VET and general education at



ISCED Levels 3 + 4, % of population aged 15-29 years

Source: National statistics reported in survey to national experts. Demographic data from Eurostat [demo_pjangroup]), own calculations.

In Bulgaria, VET’s share of enrolment in education at Levels 3 and 4 was seen earlier (see section 2.2, p. to be stable after 2000. However, on the backdrop of the demographic trend, it can be added that young people’s propensity to enter upper secondary education increased after 2000. During the period, there have been some fluctuations, but overall, young people enrol in upper secondary education, and in particular in VET, more often than in 2000.

In Romania, the changes have been more dramatic, reflecting major changes in the structure of provision. In 2003, the vocational/apprenticeship schools were discontinued and a new vocationally oriented pathway within general education called the ‘progressive high-school route’ replaced them, which explains the move away from VET and into general education. The intention was to facilitate access to higher education for students enrolled in vocational education. According to the national expert for Romania, the progressive route was not a success: Only a minority entered the labour market, and the academic performance of the students, witnessed by their graduation results, was poor. In 2009, a new change in the vocational education programme was initiated, making the first two years of high-school compulsory. Graduates of the two first years of high-school could now either continue the last two years of high-school or enrol in a six-month vocational course delivered as work-based-learning. In practice, this meant the termination of the vocational education programme, since almost all the students continued in high school. Hence, the enrolment shares for VET in 2009, 2010 and 2011 declined steadily, as there were no new enrolments during these years. In 2012-2013 school year, the vocational education programme was relaunched with entry points after the 9th grade as well as after the gymnasium. This move has led to increasing enrolment in VET every year since its initiation.

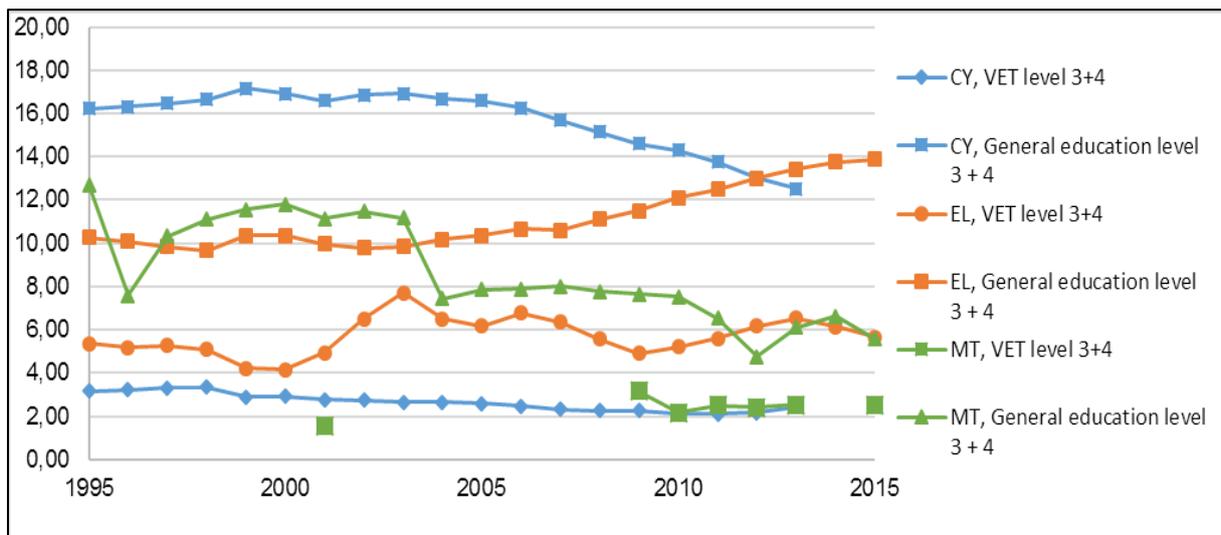
South Mediterranean Countries

Among the South Mediterranean countries, the youth populations in Cyprus and Malta increased very slightly during the period. In contrast, the Greek youth population has declined drastically from almost 2.5 million in 1997 to 1.7 million in 2015. This decline is the result of a strongly negative migration trend following the financial crisis. Since 2010, the net

migration rate in Greece has been negative and increasing every year, from -0.1 in 2010 to -4.1 in 2017.

However, as Figure 3-9 shows, the young people who did not leave Greece, have apparently opted for education instead. In particular, the share enrolled in general education increased significantly, but also the share enrolled in VET increased after 2010.

Figure 3-9: South Mediterranean European Countries: Enrolment in IVET and general education at ISCED Levels 3 + 4, % of population aged 15-29 years



Source: National statistics reported in survey to national experts. Demographic data from Eurostat ((demo_pjangroup)), own calculations.

In contrast, young people now enrol in upper secondary less often than previously in Cyprus and Malta. In Cyprus, the share of the youth population enrolled in general education at Levels 3 and 4 decreased at a much higher rate than the share enrolled in VET. The national expert for Cyprus explains that after the financial crisis, and despite no follow-up data on the employability of secondary technical and vocational education graduates, the public perception was that VET graduates had higher chances of employment in comparison to tertiary education graduates who were unemployed or under-employed. Moreover, investment in the VET sector exceeded investment in upper secondary general education. However, this still does not explain why enrolment in general education decreased even before the financial crisis.

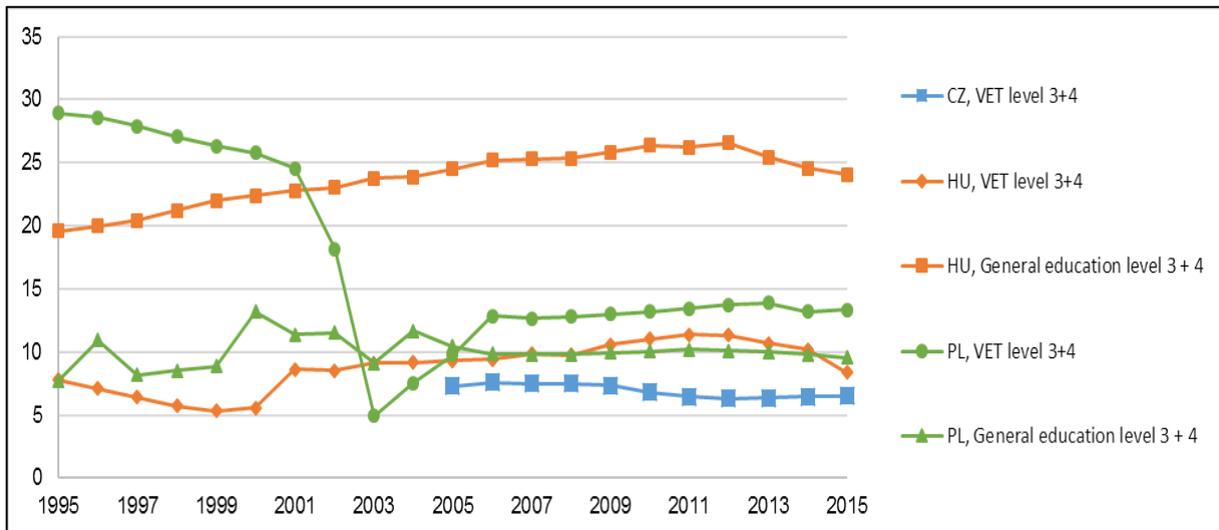
In Malta, enrolment in general education has declined, and it is difficult to draw firm conclusions about enrolment in VET due to missing data for most years.

Visegrád countries

The youth population has also been declining in the Visegrád countries, most pronounced in Poland, where the youth population dropped by 21% from 2004 to 2015. During this period, there has been significant labour mobility to the western parts of Europe, and this is probably partly responsible for the decrease in the youth population.

After a period of apparent fluctuation up to 2004, largely due to missing or invalid data, the enrolment in upper secondary education has been quite stable in this country group (see Figure 3-10).

Figure 3-10: Visegrád Countries: Enrolment in IVET and general education at ISCED Levels 3 + 4, % of population aged 15-29 years



Source: National statistics reported in survey to national experts. Demographic data from Eurostat ((demo_pjangroup)), own calculations.

The share of enrolments in VET in the Czech Republic has decreased somewhat, but due to missing data for general education, it cannot be ascertained whether this reflects less propensity to engage in education in the population or a move towards general education.¹⁰

The situation in Poland before 2003 is difficult to assess, as VET programmes and general education programmes have been reported together for some years, but after 2003, the share of young people enrolling in both VET and general education does not appear to have been influenced by the decrease in the youth population.

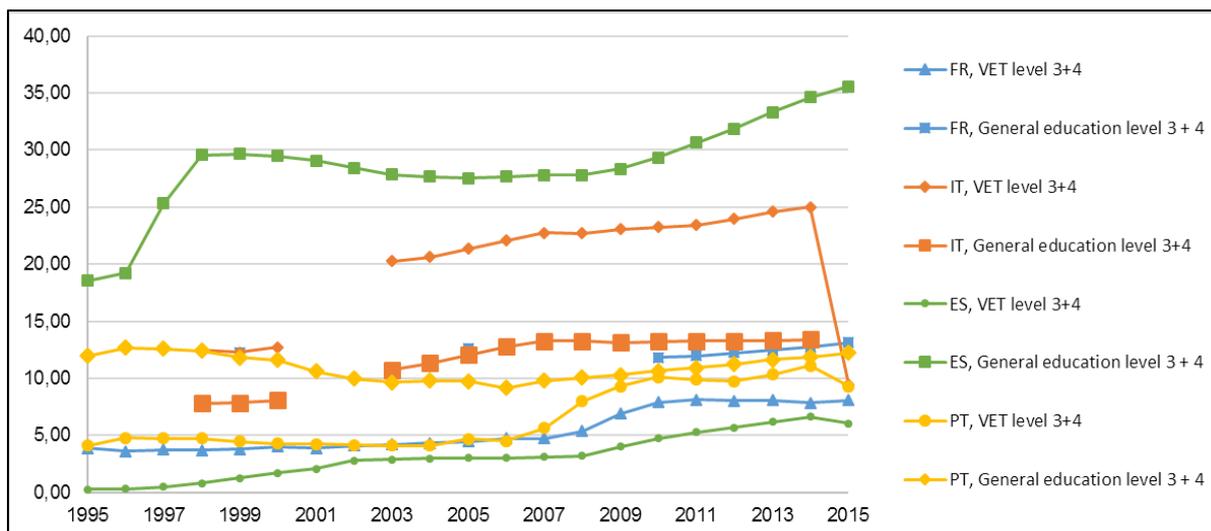
West Mediterranean countries

In the West Mediterranean countries, the youth population in France and Portugal declined very slowly, while in Italy and Spain, the decline was much steeper, in particular in Spain, where the decrease accelerated following the financial crisis in 2008, when many young Spanish people emigrated to other EU countries to look for work.

Figure 3-11 indicates an increasing tendency among the youth population of all four countries to enrol in education at Levels 3 and 4, including in VET. Particularly in Spain, but also in France and Portugal, the share of enrolments in VET as well as general education increased heavily after 2008. In the case of Spain, the explanation may be the same as for Greece where the majority of the young people who left the country would not have enrolled in education anyway but wanted to enter or stay in the labour market.

Figure 3-11: West Mediterranean Countries: Enrolment in IVET and general education at ISCED Levels 3 + 4, % of population aged 15-29 years

¹⁰ Data from the Czech Ministry of Education indicate that there has been a slight move away from VET towards general education, with VET's share of enrolments dropping from 67.6% in 2003 to 65.8% in 2013. <http://www.msmt.cz/vzdelavani/skolstvi-v-cr/statistika-skolstvi/vykonova-data-o-skolach-a-skolskych-zarizenich-2003-04-2013>



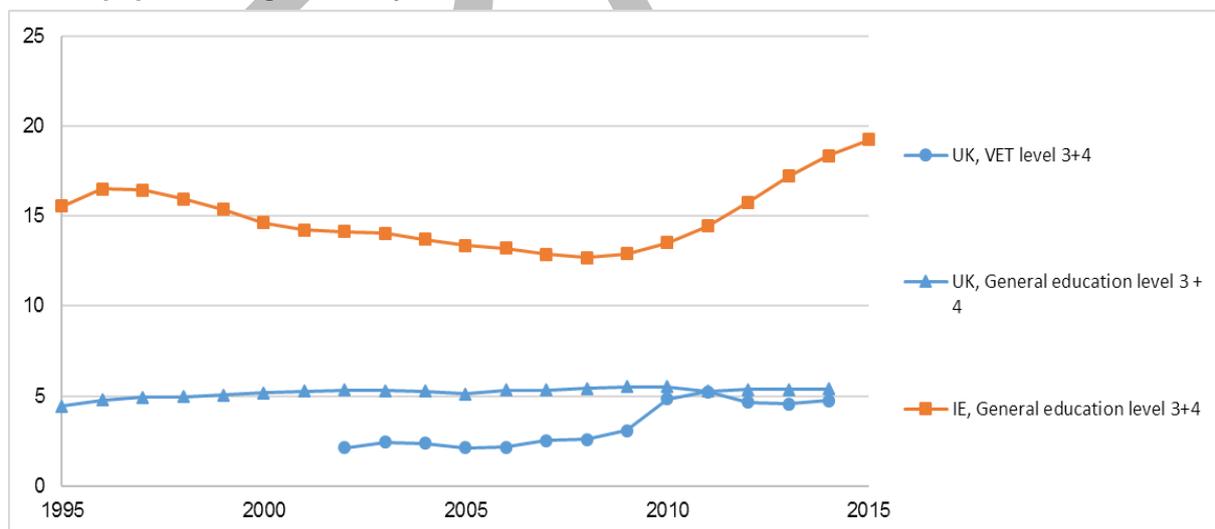
Source: National statistics reported in survey to national experts. Demographic data from Eurostat ((demo_pjangroup)), own calculations.

In France and Portugal where the youth population did not decline as much as in Spain, the increasing share of young people enrolling in education appears to suggest that some young people who would previously have taken their chance in the labour market have chosen to enter or remain in education instead in view of the rising youth unemployment rates.

Western countries

In the UK, unlike most other countries, the youth population increased between 1995 and 2015, and the youth population remained quite stable in Ireland.

Figure 3-12: Western Countries: Enrolment in IVET and general education at ISCED Levels 3 + 4, % of population aged 15-29 years



Source: National statistics reported in survey to national experts. Demographic data from Eurostat ((demo_pjangroup)), own calculations. Data for enrolment in VET in Ireland missing.

In the UK, the share of young people enrolling in VET has increased, probably as a result of the introduction of a comprehensive range of apprenticeship programmes.

3.4 Demographic changes and enrolment in education – summary

The previous sections have demonstrated that demographic changes need to be taken into account when assessing changes in enrolment in education. In most of Europe, decreasing enrolment in VET as well as general education at Levels 3 and 4 has been shown to be closely linked to a shrinking youth population. However, in some countries, in particular the Baltic countries, some South Eastern European Countries, Malta and Cyprus, the figures indicate a decreasing propensity to enrol in education among young people. In some of these countries, this changes has taken place in an even fashion, so that the relative proportions of young people enrolling in VET and general education have remained reasonably constant, while in others, reforms during the period have led to shifts between VET and general education. Only in a few countries (Finland, Greece, Ireland, and Spain) did enrolment in upper secondary education grow relative to the size of the youth population.

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4 The effect of changes in the composition of IVET programmes

The previous chapters have illustrated that enrolment in upper secondary IVET in Europe has decreased as a result of a shrinking youth population in most countries, and there has been a further shift away from VET and towards upper secondary general education in other countries.

In the following, the influence of technical factors, such as the way national authorities choose to define and categorise education programmes, may contribute to significant uncertainty about statistical figures for enrolment, particularly when looking across a long period of time.

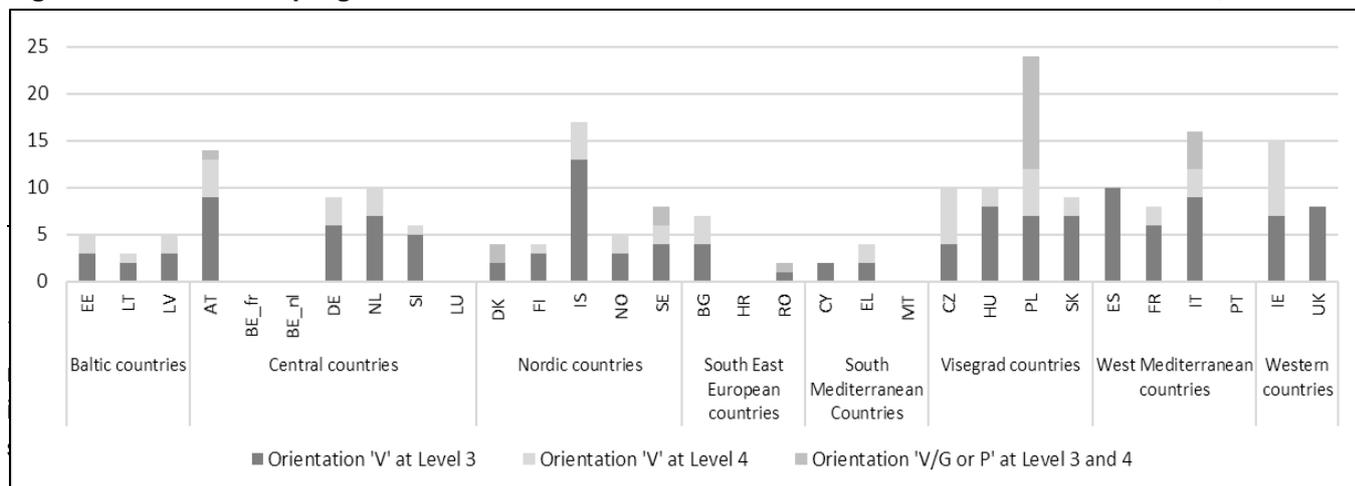
With respect to changes in the composition of VET programmes over time, the source of information is the ISCED mappings, as the survey did not ask experts to look into programme portfolios in 1995. The ISCED mappings only provide information from a shorter period (approximately 2008-2014), but even within this relatively short period, countries can be shown to have taken quite different paths when reforming (or not) their VET system, evidenced by the number and scope of the VET programmes reported to the mappings. These changes, whether they are the result of policy reforms or merely changes in administrative and statistical practices, impact enrolment figures – either because they create incentives for young people who are choosing an educational pathway, or because they change the statistical figures artificially by reclassifying programmes.

Between 2008 and 2015¹¹, the number of IVET programmes as well as the balance between Level 3 programmes and Level 4 programmes changed significantly in some European countries, while in others, the changes were minor or there were no changes at all. Figure 4-2 shows the magnitude of these changes.

4.1 National programme portfolios 2008

Error! Reference source not found. illustrates the cross-country variation in the number of programmes at ISCED 1997 Levels 3 and 4, and with orientation 'V' (vocational) or 'V+G' (vocational and general) in 2008. Overall, the variation in the number of VET programmes at the time was quite significant, reflecting the difference between VET systems in Europe. Thus, Romania and Cyprus each had two VET programmes at these levels, while Iceland

Figure 4-1: Number of programmes at ISCED 1997 Level 3 and 4 with orientation 'V' or 'V and G', 2008



had 17 and Poland 24.

Source: ISCED 1997 mappings, own calculations.

Note: The ISCED 1997 mappings are not available for Belgium, Luxembourg, Croatia, Malta, and Portugal.

In all countries except Cyprus and the UK, VET was provided at both ISCED 1997 Level 3 and ISCED Level 4. There were generally more VET programmes at Level 3 than at Level 4 – the exception being the Czech Republic with four programmes at Level 3 and six programmes Level 4.

These differences with respect to the number of programmes reported to the ISCED 1997 mappings do not appear to reflect any of the traditional ways of grouping VET systems or countries. First, the distinction between dual systems and school-based systems does not appear to explain the variation in the number of programmes with 14 programmes in Austria, nine in Germany and only four in Denmark. Neither does there appear to be an obvious relationship between the size of countries and the number of VET programmes. Iceland, with a population which is under half of that of Cyprus, had 17 programmes, while Cyprus had two.¹² Greece and the Czech Republic are large countries with approximately the same size population, but the number of VET programmes was four in Greece and 10 in the Czech Republic. Nor does the variation appear to reflect the geographically based country groups, where the variation within some of these groups, notably the Nordic countries and the Visegrád countries, was quite significant.

Principles for differentiation of programmes

It is relevant to look for explanations for the variation in the number of programmes at the level of the national VET system and the embodied perceptions of the role and nature of VET in each system. In most countries, the VET programmes were – and are - delimited according to the legal framework governing them. In some countries, all or most IVET paths and target groups are governed through comprehensive framework legislation, resulting in few programmes with a wide scope, within which different specific programmes can be developed, leading to specific occupational fields or targeted at specific types of students. In other countries, separate legislation is in place for different target groups (for example, second chance programmes have their own legislation) and/or for different occupational groups. Table 4-1 illustrates these different approaches by providing examples from three countries (Finland, Romania and the UK) of titles and descriptions of IVET programmes at Level 3 that were reported in the ISCED mappings.

Table 4-1: Three different approaches to designing VET programmes – IVET programmes at ISCED 1997 Level 3, Estonia, Austria and Italy and Poland, 2008

Country	Romania	Finland	UK
No. of programmes at Level 3 with orientation 'V'	1	3	8
Titles of	Upper Secondary-Vocational	Upper secondary vocational	Work-Based Training for

¹² Size-wise, Iceland is more comparable to Malta and Luxembourg, but the ISCED 1997 mappings are not available for these two countries.

Country	Romania	Finland	UK
programmes in English	school	programmes leading to initial vocational qualifications (including apprenticeship training programmes and special education programmes)	Adults
		Upper secondary vocational programmes preparing for initial vocational qualifications taken as competence-based qualifications/skills examinations (including apprenticeship training programmes)	National Vocational Qualification (Level 1)
		Upper secondary vocational programmes preparing for further vocational qualifications (including apprenticeship training programmes)	General National Vocational Qualification (Intermediate Level)
			National Vocational Qualification (Level 2)
			Young Apprenticeship
			Apprenticeship *)
			Apprenticeship *)
			General National Vocational Qualification (Advanced Level)
		Work-Based Training For Adults	

Source: ISCED 1997 mappings. Note: The two UK programmes with the title 'Apprenticeship' differ in the national language (also English) thus: The name of the first is 'Modern apprenticeship', the name of the second 'Modern (advance) apprenticeship'.

A review of the descriptions of programmes in the ISCED 1997 mappings confirms the links between the national VET system and the labour market and cultural specificities of each country.

In several countries (e.g., Italy, Spain, Iceland, Poland), separate programmes existed in 2008 that led to artistic occupations. In Iceland, two programmes at Level 3 and two at Level 4 were dedicated to marine engineering; in Ireland, there were two separate programme for the hospitality and culinary sector, one for fishery, and one for agriculture, horticulture, forestry and equestrian studies; and in Austria, there were three programmes in the field of nursing and one in the field of agriculture and forestry.

Furthermore, the review showed that in some countries, IVET programmes at Level 3 were open to a wide target group (Finland, Germany, Denmark), while in others, access to programmes was limited according to age (Bulgaria). Some countries had IVET programmes that had been designed to serve specific segments of the population according to their educational entrance level (Lithuania) or social resources (Italy). Finally, in some countries,

programmes were differentiated according to the level of qualification they delivered (Malta, Lithuania, Bulgaria).

Mixed orientation – vocational and/or general education

Yet another expression of this state of affairs concerns the understanding and use of *orientation* dimension in ISCED, where countries should classify programmes as either ‘V’ (vocational) or ‘G’ (general). However, a few countries (Austria, Sweden, Romania, Poland, and Italy) reported about programmes at Level 3 and 4 having orientation V *and* G to the ISCED 1997 mappings. In addition, Denmark and Italy reported programmes at Level 3 and 4 with orientation ‘P’ (pre-vocational). Table 4-2 shows the titles of these two types of programmes for which the distinction between V and G has been deemed insufficient by the national authorities reporting to the ISCED mappings.

Table 4-2: IVET Programmes at ISCED 1997 Level 3 and Level 4 with orientation 'G/V' or 'P'

Country	Name of programme(s) in national language	Name of programme in English
Austria	Externistenprogramme	Provision outside the regular education system, leading to formal education certificates
Denmark¹⁾	Håndarbejds- og husholdningsskoler ¹⁾	Home economics end needlework
	TIF-kurser (værkstedskurser) ¹⁾	Practical admittance courses for programmes at 5B
Sweden	Centrum för flexibelt lärande - Gymnasial vuxenutbildning	National state school for adults - upper secondary adult education
Romania	Invatamant liceal	Upper Secondary-high school
Poland	Ogólnokształcąca szkoła baletowa	Ballet school ²⁾
	Ogólnokształcąca szkoła muzyczna II stopnia	Second level music school ³⁾
	Ogólnokształcąca szkoła sztuk pięknych	School of Fine Arts
	Liceum plastyczne	School of Fine Arts
	Technikum, liceum, szkoła równorzędna (dla dorosłych)	Technical or equivalent secondary school (for adults)
	Technikum, liceum, szkoła równorzędna (dla dorosłych) na podbudowie szkoły zasadniczej	Technical or equivalent secondary school (for adults) based on the basic vocational school
	Czteroletnie technikum (dla młodzieży)	Technical secondary school (for youth)
	Trzyletnie technikum uzupełniające (dla młodzieży)	Supplementary technical secondary school (for youth)
	Czteroletnie technikum specjalne (dla młodzieży)	Special technical secondary school (for youth)
	Trzyletnie technikum uzupełniające specjalne (dla młodzieży)	Supplementary special technical secondary school (for youth)
Italy	Conservatorio di musica - periodo medio ¹⁾	Music Conservatory - intermediate course
	Accademia Nazionale di Danza - periodo medio ¹⁾	National Dance Academy - intermediate course
	Istruzione Tecnica ¹⁾	Technical Institute
	Corsi serali presso le scuole secondarie di secondo grado (per adulti)	Upper secondary education courses (for adults)

Source: ISCED 1997 mappings.

Notes: 1) These programmes are labelled 'P' (pre-vocational), a category which does not exist in ISCED 1997; 2) This programme spans levels 1,2 and 3; 3) This programme spans levels 2 and 3.

Several observations can be made from this table. First, the education programmes reported as having a mixed orientation belong to very different categories;

- In Poland, the technical secondary school programmes that were reported as G/V delivered an academic qualification, but also had a strong vocational/technical content;
- In Italy and Poland, programmes of an artistic nature were reported as having a mixed orientation. Looking across Europe, most countries have some programmes leading to artistic occupations, but there is no common practice for characterising the orientation of such programmes. Some countries report them as vocational, others as general;
- In Sweden, Poland and Italy, the target group for a programme appeared to be an additional factor leading to reporting programmes as having a mixed orientation, since in all three countries, vocational courses for adults were reported as G/V;
- In Austria, the mode of provision was a factor, i.e., non-formal provision of curriculum leading to formal qualifications was reported as G/V.

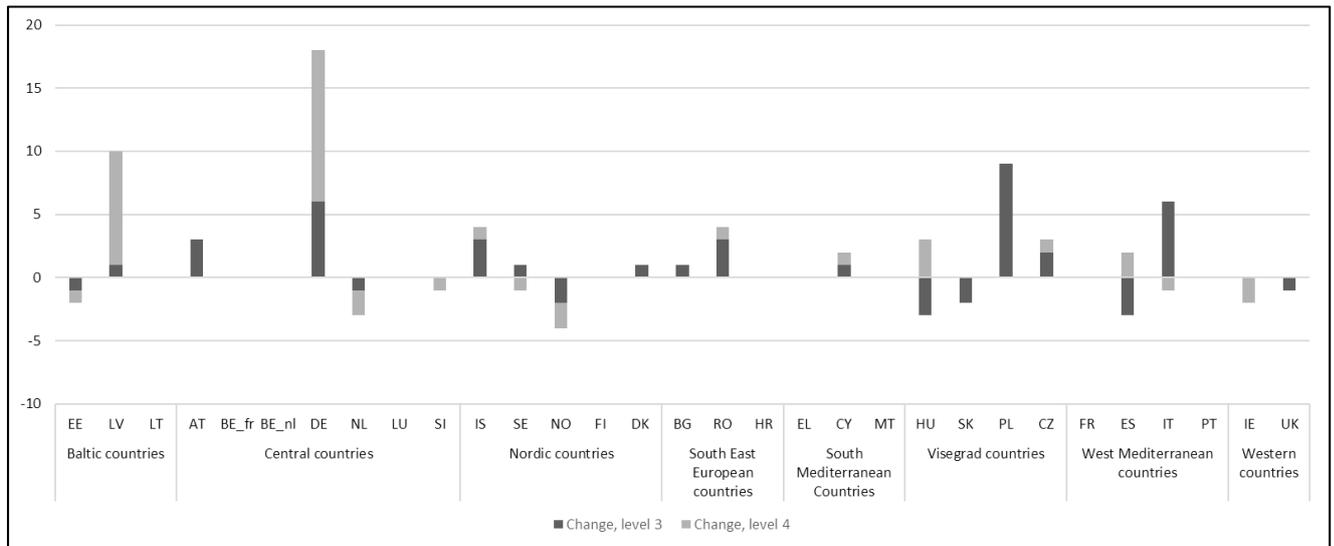
4.2 Changes in national programme portfolios

Between 2008 and 2015, the programme portfolios had changed in some respects. First, in most countries, the numbers of programmes had changed, as had the distribution of programmes on levels as shown in Figure 4-2.

The size and direction of the changes in the number of IVET programmes varied considerably. In 11 countries, the number of programmes increased; the number decreased in eight countries; and the net change was zero in six countries.¹³ A net change of zero does not imply that there were no changes in all cases. For instance, the number of programmes at Level 3 increased by one and the number of programmes at Level 4 decreased by one in Sweden. The reverse was seen in Hungary, where the number of programmes at Level 3 was reduced by three, but the number of programmes at Level 4 increased by three.

¹³ For the remaining countries, i.e. Belgium (French speaking as well as Flemish speaking part), Luxembourg, Croatia, Malta and Portugal, the ISCED 1997 mapping is not available.

Figure 4-2: Change in the number of programmes at ISCED Level 3 and 4 with vocational orientation, 2008 and 2015¹⁴. Absolute figures.



Source: ISCED mappings, own calculations.

The immediately most striking change took place in Germany, where the number of VET programmes at Level 3 was increased by six, and the number of programmes at Level 4 by 12.

None of these were new programmes, however. What caused the change was that most VET programmes reported to the ISCED 1997 mapping had been split into two, three, or four 'new' programmes according to what institutions provided the programme and/or the nature of the qualification awarded.

Table 4-3 illustrates this administrative change by giving two examples, one at ISCED Level 3, and one at ISCED Level 4.

¹⁴ For some countries, the year that was reported to the ISCED 2011 mappings was 2013 or 2014.

Table 4-3: Examples of VET programmes at Level 3 and 4 in Germany, 2008 and 2012

ISCED 1997 mapping - 2008		ISCED 2011 mapping - 2012	
Programme number	Name of programme	Programme number	Name of programme
3B.1	Basic vocational training programmes replacing first year in the Dual System.	03.01 - 1	Basic vocational training year
		03.01 - 2	Basic vocational training year with consideration as first year in the Dual System
		03.01 - 3	Basic vocational training at specialised vocational schools with consideration as first year in the Dual System
4A.3	Specialised vocational schools: occupational qualification (second cycle) combined with qualification for ISCED 5A	04.05 - 1	Full-time vocational training programmes at specialised vocational schools in <i>professions not regulated in Crafts and Trade Code or Law on Vocational Training</i> (second cycle after obtaining university entrance qualification)
		04.05 - 2	Full-time vocational training programmes at specialised vocational schools in <i>professions regulated in Crafts and Trade Code or Law on Vocational Training</i> (second cycle after obtaining university entrance qualification)
		04.05 - 3	Full-time vocational training programmes at specialised vocational schools in <i>professions not regulated in Crafts and Trade Code or Law on Vocational Training</i> (third qualification for students with university entrance qualification and vocational qualification)

Source: ISCED 1997 and 2011 mappings.

Mixed orientation – vocational and/or general education

Another remarkable change that took place between 2008 and 2015 was a reduction in the number of programmes with mixed orientation.

While six countries reported such programmes to the ISCED 1997 mapping (c.f. Table 4-2 above), in 2015, only one country – Belgium – reported programmes with mixed orientation. This does not, however, imply that programmes with dual pathways or delivering dual qualifications had ceased to exist in the meantime, on the contrary. Whether such programmes are reported with orientation ‘V’ or ‘G’ has of course implications for the enrolment figures. The trend towards increasingly introducing dual qualifications will, together with the trend towards modularisation of programmes, be discussed in more detail in Working Paper 3.3. in this series.

5 Conclusions

The presentation of the above information from the ISCED mappings and the results of the survey to national experts have not confirmed that VET is a sector in decline. The absolute figures for enrolments in VET have declined in some but by no means all countries, but in most cases, this does not reflect a change in the relative importance of VET. When viewed against all enrolments in upper secondary education, and against the changes in the youth population, the overall trend is quite stable in most countries.

Stating that VET is declining is a simplification that may displace attention from more important issues

The analysis has also strongly indicated that making statements about VET-based statistical data aggregated at the European level does not make much sense. The trends in absolute and relative enrolment figures at national level vary considerably across Europe. The diversity of the situation across Europe with respect to demography, labour markets and education policies calls for analyses at lower levels.

Demographic trends are the main factor impacting enrolment

The analysis has shown that the change in enrolment figures is substantially reduced when corrected for the development in the size of the youth population in each country. In most countries, the youth population is shrinking, but enrolment figures for VET in most countries are quite stable relative to the size of the youth population. Nevertheless, in some countries, the total share of enrolment in upper secondary education has dropped significantly.

Fewer young people are enrolled in upper secondary education

The analysis has indicated a trend which is quite worrisome from a policy point of view. In several countries, the propensity to enrol in upper secondary education, be it VET or general education, is declining, in some countries steadily, in other countries even dramatically, while the share of young people enrolled in upper secondary education is increasing only in very few countries. In some countries, this has been demonstrated to be linked to migration because young people leave the country instead of entering an education programme. In a few instances, the decline has been shown to be linked to the shortening of programmes, particularly VET programmes at Level 3. However, at a time with rapidly changing labour markets, where key qualifications as well as specialised technical competences and qualifications are in demand, more, not fewer, of Europe's young population should be pursuing learning and qualifications.

Technical and administrative changes have influenced enrolment figures

The methods for classifying and recording data about education programmes have built-in risks of misrepresenting reality on the ground as described and explained in Working Paper 3.1 in this series. The analysis in this Working Paper has confirmed that seemingly dramatic changes in enrolment figures can be explained as the result of reclassification of programmes.

The distinction between VET and general education, and between IVET and CVET has become less clear-cut during the period

The review of the programme portfolios of the countries has revealed that the borderline between VET is blurring, with increasing numbers of mixed pathways and programmes delivering dual qualifications. Likewise, the distinction between IVET and CVET appears to be blurring, with modularisation of programmes at ISCED Level 3 and introduction of

validation of prior learning enabling adults to follow only parts of a programme. This issue has been discussed in Working Paper 3.1, and will be developed further in Working Paper 3.3 based on the qualitative responses to the survey to national experts.

Overall, when judging from enrolment and completion figures corrected from impact from demography and political/administrative changes, concerns about VET's fitness for the future would seem unfounded. However, more scrutiny of the programmes is needed to be able to assess whether the methods of provision and the content of programmes are in keeping with the future needs of Europe for citizens who possess *'knowledge, skills, and attitudes that will help learners find personal fulfilment and, later in life, find work and take part in society'* (European Commission, 2017).

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List of Abbreviations

CVET – Continuing Vocational Education and Training

ETF – European Training Foundation

EUROSTAT - The statistical office of the European Union

ILO - International Labour Organization

ISCED - International Standard Classification of Education

IVET - Initial Vocational Education and Training

OECD - The Organisation for Economic Co-operation and Development

TVET – Technical Vocational Education and Training

UNESCO - United Nations Educational, Scientific and Cultural Organization

UOE data – UNESCO OECD Eurostat joint data collection

VET – Vocational Education and Training

WBL – Work-Based Learning

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Annex 1: The preparation of the research tool

For each country, a unique Excel workbook was prepared. The research team populated a worksheet in each country workbook with the data from the ISCED mapping pertaining to IVET and general education programmes at ISCED levels 3 and 4. To this sheet, we added columns for each of the years 1995-2015 for enrolment figures and similar for completion figures. This allowed the country experts to enter all available national enrolment and completion figures at programme level. Furthermore, the following sheets were added to the workbook:

- A sheet inviting the expert to give summary information about changes in VET with respect to the following topics: governance; public esteem; access to higher education and/or to the labour market; modularisation; changes at lower levels of education influencing on VET enrolment; the balance between school-based and work-based learning, the provision of apprenticeships.
- One sheet for each VET programme at levels 3-4 asking the expert to identify changes in occupational groups targeted by the VET programme and describe these changes.
- A sheet asking the expert to provide an assessment of the quality of the available national data.

The sheets in the workbook were locked to ensure that only cells that the experts were expected to fill in could be edited.

The workbook was designed to be self-explanatory, but to ensure that the experts were on equal footing, two instructional webinars were offered to all country experts.