

## International indicators on youth education attainment levels – what is Germany's true position?

► Although indicators mapping the level of youth education attainment in international comparative terms are often used in discussions centring on the efficiency and effectiveness of the German educational system, the position occupied by Germany is not clear. The Eurostat data, for example, shows that the proportion of young people who have at least completed upper secondary education is at a comparatively low level. This contrasts with the upper secondary education completion rates provided by the OECD, where the figures for 2006 (OECD, 2008) show Germany in top position. The aim of the following is to examine the computation approaches adopted by both indicators and the attendant interpretation problems more closely.

### Who calculates what?

Although both the OECD and Eurostat<sup>1</sup> publish data which is used to measure youth education attainment levels, the fact that neither the denominator nor the numerator are identical in the two computation methods means that the indicators are not directly comparable. The calculations are also based on different data sources.

- Eurostat measures the “Youth education attainment level” structural indicator via the proportion of persons aged between 20 and 24 who have completed an upper secondary education qualification.<sup>2</sup> The numerator and denominator comprise persons of the same age group. The data source is the EU Labour Force Survey (LFS), an internationally comparable personal survey.
- The OECD determines “Upper secondary graduation rates”<sup>3</sup> by presenting these in terms of a percentage of all persons who have obtained an upper secondary education qualification (for the first time) relative to the population at the “typical age of graduation”<sup>4</sup>. Whereas the OECD states that the “typical age of graduation” in Germany is 19, the figures for those completing upper secondary education for the first time include persons of every age. Administrative data and estimations conducted by the individual countries serve as source material.

The publications of the Federal Institute for Vocational Education and Training (BIBB) issued at both domestic and international level have drawn attention to the problem of the lack of comparability afforded by the two indicators, the most recent example of this being in a study commissioned by the European Commission (BEHRINGER, 2005; BEHRINGER/PFEIFER, 2005; BEHRINGER/HANF, 2005).



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- <sup>1</sup> Data on the key indicators may be viewed online at <http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=0&language=en&pcode=tsiir110>
- <sup>2</sup> Explanations relating to this indicator may be viewed online (at <http://epp.eurostat.ec.europa.eu/tgm/web/table/description.jsp>).
- <sup>3</sup> The following uses the term “OECD rates” to refer to the “Upper secondary graduation rates”.
- <sup>4</sup> More detailed information on this topic is available by consulting Annex 3 to the OECD publication “Education at a glance” (2008).

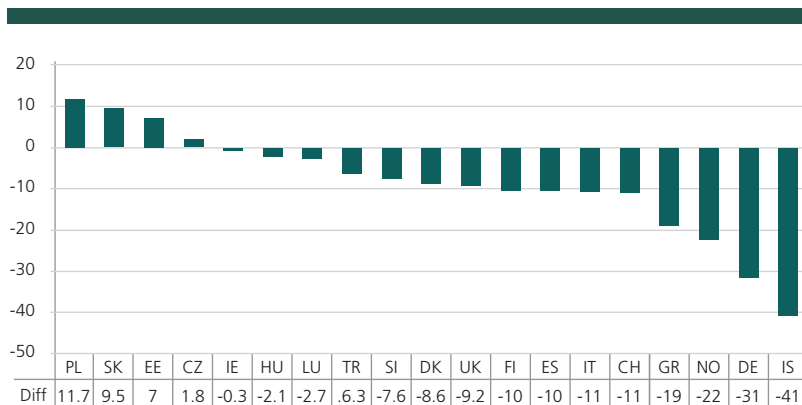
A clear difference between the two indicators emerges in the case of the majority of countries (see Figure 1), the OECD rate being above or below the Eurostat rate depending on the country. The difference between the two rates is not constant over time. For the year 2006, for example, the OECD completion rate for Germany was 31.4 percentage points above the “Youth education attainment level”.

## What needs to be taken into account when interpreting the two indicators?

Consideration needs to be accorded to the following when interpreting the Youth education attainment level published by Eurostat. Although a fall in the indicator means that a lower proportion of persons within this particular age group (20 to 24 year-olds) has achieved an upper secondary education qualification, it may be the case that this is accompanied by a rise in upper secondary education graduates within the age groups above (such as the age group of 25 to 34 year-olds). This means, therefore, that a decrease in the “Youth education attainment level” does not necessarily indicate that a lower proportion of the population is attaining an upper secondary education qualification in overall terms. There is the possibility that the relevant qualifications are being obtained at a biographically later point, meaning that they are no longer covered by the age group relevant to the indicator. As far as Germany is concerned, a fall of around 3 percentage points in the Eurostat indicator may be discerned for the period between 1999 and 2006 (see Figure 2). The proportion of the population aged between 25 and 34 identified by the OECD as having obtained an upper secondary education qualification also underwent a slight fall in the year 2005. The supposition here would be that this decrease is occasioned by the delayed effects of the data recorded for 20 to 24 year-olds by Eurostat in 2001. Due, however, to the fact that the OECD does not provide information to decimal places for the educational level of 25 to 34 year-olds, it is not possible to judge whether this decrease has continued to its full extent or not.

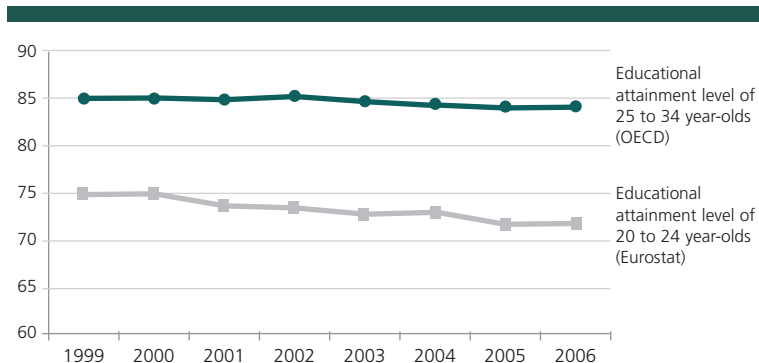
The first thing to be said about the OECD indicator is that the completion rate does not permit any statement to be made on the level of educational attainment within the population in general terms. Since it constitutes a periodic value merely measuring a change in cumulative value rather than a cumulative value in itself, it is only able to provide indications as to the future development of educational attainment. The more closely the population group forming the object of observation is delineated in terms of age, the more likely it is that the completion rate can also be used as a yardstick for the level of educational attainment. Completion rate and education attainment level will, for example, be identical if observation is restric-

Figure 1 Differences (percentage points) between the Eurostat “Youth education attainment level” and the OECD completion rates, 2006



Sources: The data for “Youth education attainment level” originate from the Eurostat New Cronos Database (structural indicator II.9). Data for the OECD upper secondary education completion rates is taken from OECD – Education at a glance, 2008.

Figure 2 The Eurostat Indicator and the educational attainment level of 25 to 34 year-olds (in %)



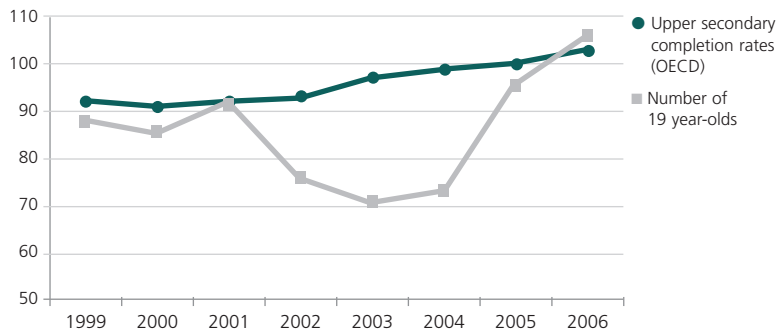
Sources: The data for “Youth education attainment level” originate from the Eurostat New Cronos Database (structural indicator II.9). Data for the OECD upper secondary education completion rates is taken from OECD – Education at a glance, 2000–2008.

ted to a single year group. This also appears to be the reason why completion rates frequently serve as a vehicle for addressing youth education attainment levels.

Notwithstanding this, the method of calculation deployed by the OECD exhibits a number of problems. The greater the number of upper secondary education graduates deviating from the “typical age of graduation” in terms of their age, the less adequate is this indicator for mapping the actual completion rate for a year group or cohort. The degree of fluctuation in the number of persons contained within individual year groups also plays a part.

We present an example for the purpose of clarifying this. The “typical age of graduation” in two countries, country

Figure 3 OECD Indicator and population at the typical age of graduation



Sources: data relating to OECD completion rates at upper secondary level is taken from OECD – Education at a glance, 2000–2008. Data on the population of 19 year-olds is from the population extrapolation conducted by the German Federal Statistical Office, 1999–2006.

A and country B, is stipulated as 19 years. A considerable proportion of graduates in country A is, however, 20 years old rather than 19, whereas in country B almost all pupils obtain an upper secondary qualification at the age of 19. The assumption is that numbers are lower in the year group of 19 year-olds greater than in the year group of 20 year-olds in both countries. The result is an extremely precise completion rate for the year group of 19 year-olds in country B. In country A, however, a misleadingly high completion rate emerges by dint of the fact that the total completing upper secondary education from an age group higher in number (the group of 20 year-olds in the numerator) relates to a year group where numbers are relatively low (the group of 19 year-olds in the denominator).

This example illustrates the imprecision of the rate for a certain point in time. Over the course of time, consideration also needs to be accorded to demographic fluctuations in a country. In the event of considerable fluctuations within the individual age cohorts, there is a risk that developments are incorrectly interpreted. If in the example given above the subsequent year group in country A were to be once again greater in number, this would in turn result in a misleadingly low completion rate due to the fact that the qualifications obtained by the relatively small group of those now aged 20 relates to a larger subsequent group of 19 year-olds.

Figure 3 indicates an increase in completion rates for Germany over the period 1999–2006 (cf. OECD Education at a glance 2008, p. 65).<sup>5</sup> There is a strong suggestion that the implausible values exceeding 100 percent which have resulted in the last two years have their origins in demographic fluctuations, although the development of the 19 year-old age group constituting the typical age of gra-

duation is not demonstrating any clearly opposite trend. The decrease in the age group of 19 year-olds may be a contributory factor to the rising completion rates between 2001 and 2004. Such an explanation may, however, be discounted for the years 2005 and 2006. The increase in the rates of graduates and the attendant fall in the level of educational attainment of those aged between 20 and 24 (cf. Figure 2) is far more likely to indicate that an increasing number of graduates are not obtaining the qualification until they are older. This increase is barely reflected in the level of educational attainment of the 25 to 34 age group in Figure 2 due to the fact that it is not of great significance in terms of the overall size of the cohort. This means that it is unable to compensate for the fall in the level of educational attainment occasioned by subsequent year groups.

Apart from these factors, another possible cause of an excessive graduation rate is when individuals obtain more than one qualification at the same time or consecutively. Although the aim of the indicator is to include only first qualifications at upper secondary level and accord only single consideration to multiple qualifications, it is not possible to guarantee elimination of multiple upper secondary qualifications in equal measure in all cases and in all countries. Each member state “estimates” the number of multiple qualifications and subtracts this from the total number of qualifications which have been counted and recorded in the administrative procedures. The decisive factor for the quality of these estimations is how good the information on the relevant facts and circumstances is within the countries. This problem is the reason why no OECD graduation figures are published for the United Kingdom and other countries.

Determination of the “typical age of graduation” as stipulated by the OECD must also be viewed as a problem. The typical age at which a child commences education (assumed to be 6 for Germany) is taken as the basis, and the theoretical duration of schooling before the attainment of an upper secondary qualification added (the figure for Germany thus far being 13 years until a pupil sits the upper secondary school leaving certificate or concludes a course of vocational education and training). This gives us a “typical age of graduation” for Germany of 19 years. No account is taken of pupils who start school later or of repetitions of one or more school years, and neither is any consideration accorded to the waiting loops leading up to the commencement of vocational training, which are an object of

<sup>5</sup> Values in excess of 100% may arise if the total number of graduates from all age groups in one year is higher than the population at the typical age of graduation. Implausible values also arise for other countries. The OECD, for example, indicates that the completion rate for women in Norway in 2006 is 103% (cf. OECD – Education at a glance 2008, p. 465).

considerable current debate and which can cause a delay in the time required to obtain a vocational qualification.

Two examples will illustrate the extent to which the typical age of graduation deviates from the actual prevailing circumstances in Germany. Only a very small proportion of those commencing training (fewer than 15%) begin vocational training at the age of 16, enabling them to complete three-year training occupations and obtain a vocational and upper secondary qualification by the age of 19 (BIBB, 2005). As far as those who have completed the upper secondary school leaving certificate are concerned, fewer than 40 percent are aged 19 at the point when the qualification is obtained (German Institute for Business Research, IW, 2006). The attendant problems have been described in the example above.

## Conclusion

Although caution needs to be exercised in respect of potentially erroneous conclusions in interpreting both indicators for the measurement of youth education attainment levels, the Eurostat indicator on the proportion of 20 to 24 year-olds with an upper secondary qualification in conjunction with the level of educational attainment of the subsequent age group provides the more transparent values. By way of contrast, the OECD completion rates constitute a fundamentally questionable yardstick for the measurement of educational attainment, and not merely by dint of the fact that they represent a periodic value. The method of calculation deployed is difficult to understand and delivers results which are implausible in some areas and scarcely capable of interpretation over the course of time. In Germany, for example, the “increase” in the completion rates up until 2006 may disguise the fact that a shift in the age of graduation has actually taken place. ■

### Literature

- BEHRINGER, F.: *Effectiveness and efficiency of VET*. – In: LENEY, T. et al. (Eds.): *Achieving the Lisbon goal: the contribution of VET. Final report to the European Commission*. Brussels, European Commission. (2005)
- BEHRINGER, F.; PFEIFER, H.: *Indicators and Data for VET*. – In: LENEY, T. et al. (Eds.): *Achieving the Lisbon goal: the contribution of VET. Final report to the European Commission*. Brussels, European Commission. (2005)
- BEHRINGER, F.; HANF, G.: *Der Beitrag der beruflichen Bildung zur europäischen Agenda 2010. Erkenntnisse aus der “Maastricht-Studie”*. In: *BWP 34 (2005) 1*, pp. 26–29
- BIBB-DATENBLATT: 996000 *Ausbildungsberufe – insgesamt*, Bundesinstitut für Berufsbildung 2005
- BMBF: *Berufsbildungsbericht 2006*
- INSTITUT FÜR DEUTSCHE WIRTSCHAFT: *Informationsdienst des Instituts der deutschen Wirtschaft Köln*, Volume 32, 26. 2006
- OECD: *Education at a glance 2000–2008*. Paris
- STATISTISCHES BUNDESAMT: *Bevölkerungsfortschreibung, Special series 1 Series 1.3. 1999–2006*



## Vocational Education and Training in Germany – Assuring the Future

The film “Vocational Education and Training in Germany – Assuring the Future” presents the basic elements of the German VET system. These combine part-time vocational schooling with practical work experience. Since the VET system is geared to real work processes in actual day-to-day occupational practice, it is highly effective and enjoys acceptance not only within Germany but also abroad.

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