

NOTES ON THE ESTIMATION OF COSTS FOR GRADE REPETITION

Introduction

1. This is the first attempt to estimate the costs for grade repetition. The Excel file <http://www.oecd.org/dataoecd/35/30/48362519.xls> provides the table with the results and all source data tables.

2. The costs for grade repetition are estimated by adding the direct and opportunity costs. The direct costs consist of the costs for education systems to provide on additional year of education. The opportunity costs consist of the costs of delaying students' entrance to the labour market by one additional year. The opportunity costs are estimated based on the following two assumptions: repeaters attain at most lower secondary level (scenario A); and repeaters attain around the national average education level (scenario B). The detailed descriptions of indicators used for the computation and calculations are presented below.

3. Caution is required in interpreting the results, since this estimation only focuses on the costs for grade repetition. This study does not address the benefits of grade repetition nor the costs of not-having-grade-repetition. These are beyond the scope of this study. For example, by repeating grades, students' productivity and readiness for the labour market might be improved, but this is not incorporated into the estimation. Education systems might have to implement relevant policies and invest resources, such as extra tuition and subsidies for students from socio-economically disadvantaged backgrounds, in order to avoid grade repetition, but these costs are not incorporated into this estimation, either. In addition, the costs are estimated based on the latest labour costs and unemployment-rate data available, on the assumption that these data are stable over time. Finally, where students repeated a grade prior to entering the country of destination, the direct costs for grade repetition were covered by the country of origin rather than the country of destination. However, the age of immigrant students when they arrived in the country of destination is not taken into account in this computation, as the proportion of these students is negligible in most countries (see Tables 1 to 3 in <http://www.oecd.org/dataoecd/35/30/48362519.xls>), and the proportion of these students has to be estimated using two different questions (Q7 and Q18 in the Student Questionnaire), which introduces a further uncertainty into the computation,

Data source

4. The following eight types of the indicators from *Education at a Glance 2010* (OECD, 2010a), *PISA 2009 Results: What Makes a School Successful? Resources, Policies and Practices (Volume IV)* (OECD, 2010b) and *OECD.Stat* are used for estimating the costs for grade repetition.

- **Indicator_1. The number of 15-year-old students** is extracted from the column (8) "Weighted number of participating students" in Table A2.1 of *PISA 2009 Results: What Makes a School Successful?* (OECD, 2010b).
- **Indicator_2. The percentage of grade repetition** is extracted from the column of "percentage of students reporting that they have repeated a grade in primary, lower secondary or upper secondary schools" in Table IV.3.1 of *PISA 2009 Results: What Makes a School Successful?* (OECD, 2010b). This is not the percentage of 15-year-old students who repeated a grade in the

year the PISA 2009 assessment was administered; rather, this is the cumulative percentage of grade repetition among those 15-year-old students who reported that they had repeated a grade at least once between the year they enrolled in primary school until the year the PISA 2009 assessment was conducted.

- **Indicator_3. Cumulative expenditure by educational institutions per student aged 6 to 15 in equivalent USD converted using PPPs** is extracted from Table IV.3.21b of *PISA 2009 Results: What Makes a School Successful?* (OECD, 2010b).
- **Indicators_4a and _4b. Annual labour costs in equivalent USD for 25-64 year olds** are extracted from the rows of “males + females” in Table A10.1 of *Education at a Glance 2010* (OECD, 2010a). Annual labour costs for educational attainment at the ISCED levels of 0, 1, or 2 are extracted from column (9), which is referred to as *Indicator_4a* for the remainder of this document. Annual labour costs for educational attainment at all ISCED levels are extracted from column (12), which is referred to as *Indicator_4b* in the remaining of this document. In Estonia, Israel, Slovenia and Brazil, gross annual full-time earnings are used as annual labour costs are not available in Table A10.1.
- **Indicators_5a and _5b. Unemployment rates of 25-64 year-olds** for educational attainment below upper secondary are extracted from the column “2008” in Table A6.4a of *Education at a Glance 2010* (OECD, 2010a), which is referred to as *Indicator_5a* for the remainder of this document. Unemployment rates of 25-64 year-olds for all levels of education are extracted from column (9) in Table A6.2b of *Education at a Glance 2010* (OECD, 2010a), which is referred to as *Indicator_5b* for the remainder of this document.
- **Indicator_6. Average exchange rates between 2006 and 2008** are extracted from the last column in Table X2.1 of *Education at a Glance 2010* (OECD, 2010a).
- **Indicator_7. Expenditure for primary and secondary education (2007) in million of national currency** is extracted from *OECD.stat* on May 16th, 2011.
- **Indicator_8. Purchasing Power Parity for GDP (USD =1)** is extracted from column (5) of *Education at a Glance 2010* (OECD, 2010a).

5. All of the original data tables are included in the worksheets with red tabs in the Excel file <http://www.oecd.org/dataoecd/35/30/48362519.xls>.

Table of costs for grade repetition

6. The first worksheet in the excel file <http://www.oecd.org/dataoecd/35/30/48362519.xls> shows the table of costs for grade repetition. This table consists of 12 columns. Each column is calculated as follows:

- The first column, *Column_I*, in the table of the costs for grade repetition presents the number of 15-year-old students who have repeated a grade at least once in primary, lower secondary or upper secondary school. This is computed as: $Indicator_1 \times Indicator_2 / 100$.
- The second column, *Column_II*, presents the costs for an education system to provide an additional year of education to repeaters. This is computed as: $Column_I \times Indicator_3 / 10$.

- The third column, *Column_III*, represents the number of 15-year-old students who enter the labour market at least one year later because of grade repetition, based on the assumption that repeaters attain at most lower secondary level. Unemployment rates are also accounted for. This column is computed as: $Column_I \times (1 - Indicator_{5a} / 100)$.
- The fourth column, *Column_IV*, shows the costs to systems by delaying students' entry into the labour market by one additional year, based on the assumption that repeaters attain at most lower secondary level. The labour costs in equivalent USD are first converted to national currency by multiplying *Indicator_6*; then the labour costs in national currency are converted using Purchasing Power Parity, by dividing by *Indicator_8*. This column is computed as: $Column_{III} \times Indicator_{4a} \times Indicator_6 / Indicator_8$.
- The fifth column, *Column_V*, presents the number of 15-year-old students who enter the labour market at least one year later because of grade repetition, based on the assumption that repeaters attain around the national average education level. Unemployment rates are also accounted for. This column is computed as: $Column_I \times (1 - Indicator_{5b} / 100)$.
- The sixth column, *Column_VI*, shows the costs to systems by delaying students' entry into the labour market by one additional year, based on the assumption that repeaters attain around the national average education level. The labour costs in equivalent USD are first converted to national currency by multiplying *Indicator_6*; then, the labour costs in national currency are converted using Purchasing Power Parity, by dividing by *Indicator_8*. This column is computed as: $Column_V \times Indicator_{4b} \times Indicator_6 / Indicator_8$.
- The seventh column, *Column_VII*, presents the total annual costs for grade repetition including both direct and opportunity costs (i.e. the total cost for grade repetition for one age cohort), based on the assumption that repeaters attain at most lower secondary level. This column is computed as: $Column_{II} + Column_{IV}$.
- The eighth column, *Column_VIII*, presents the total annual costs per student, based on the assumption that repeaters attain at most lower secondary level. This is computed as: $Column_{VII} / Indicator_1$.
- The ninth column, *Column_IX*, shows the total annual costs for grade repetition relative to the total expenditure on primary and secondary education, based on the assumption that repeaters attain at most lower secondary level. The expenditure for primary and secondary education is converted using Purchasing Power Parity. This column is computed as: $Column_{VII} / (Indicator_7 \times 1000\ 000 / Indicator_8) \times 100$.
- The tenth column, *Column_X*, presents the total annual costs for grade repetition, including both direct and opportunity costs (i.e. the total cost for grade repetition for one age cohort), based on the assumption that repeaters attain around the national average education level. This column is computed as: $Column_{II} + Column_{VI}$.
- The eleventh column, *Column_XI*, presents the total annual costs per student, based on the assumption that repeaters attain around the national average education level. This is computed as: $Column_X / Indicator_1$.
- The tenth column, *Column_XII*, shows the total annual costs for grade repetition relative to the total expenditure on primary and secondary education, based on the assumption that repeaters attain around the national average education level. The expenditure for primary and secondary

education is converted using Purchasing Power Parity. This column is computed as: $\text{Column}_X / (\text{Indicator}_7 \times 1000\ 000 / \text{Indicator}_8) \times 100$.

7. In Chile, France, Ireland, Luxembourg, Mexico, Switzerland and Turkey (those in grey in the table), the total costs are underestimated, as the annual labour costs are not available in Table A10.1 and the opportunity costs cannot be estimated.

References

OECD (2010a), *Education at a Glance 2010: OECD indicators*, OECD Publishing.

OECD (2010b), *PISA 2009 Results: What Makes a School Successful?: Resources, Policies and Practices (Volume IV)*, OECD Publishing.