



# Admission to HE should reward quality and promote high academic standards in pre-tertiary education – I.

## Program for the International Assessment of Adult Competencies (PIAAC)

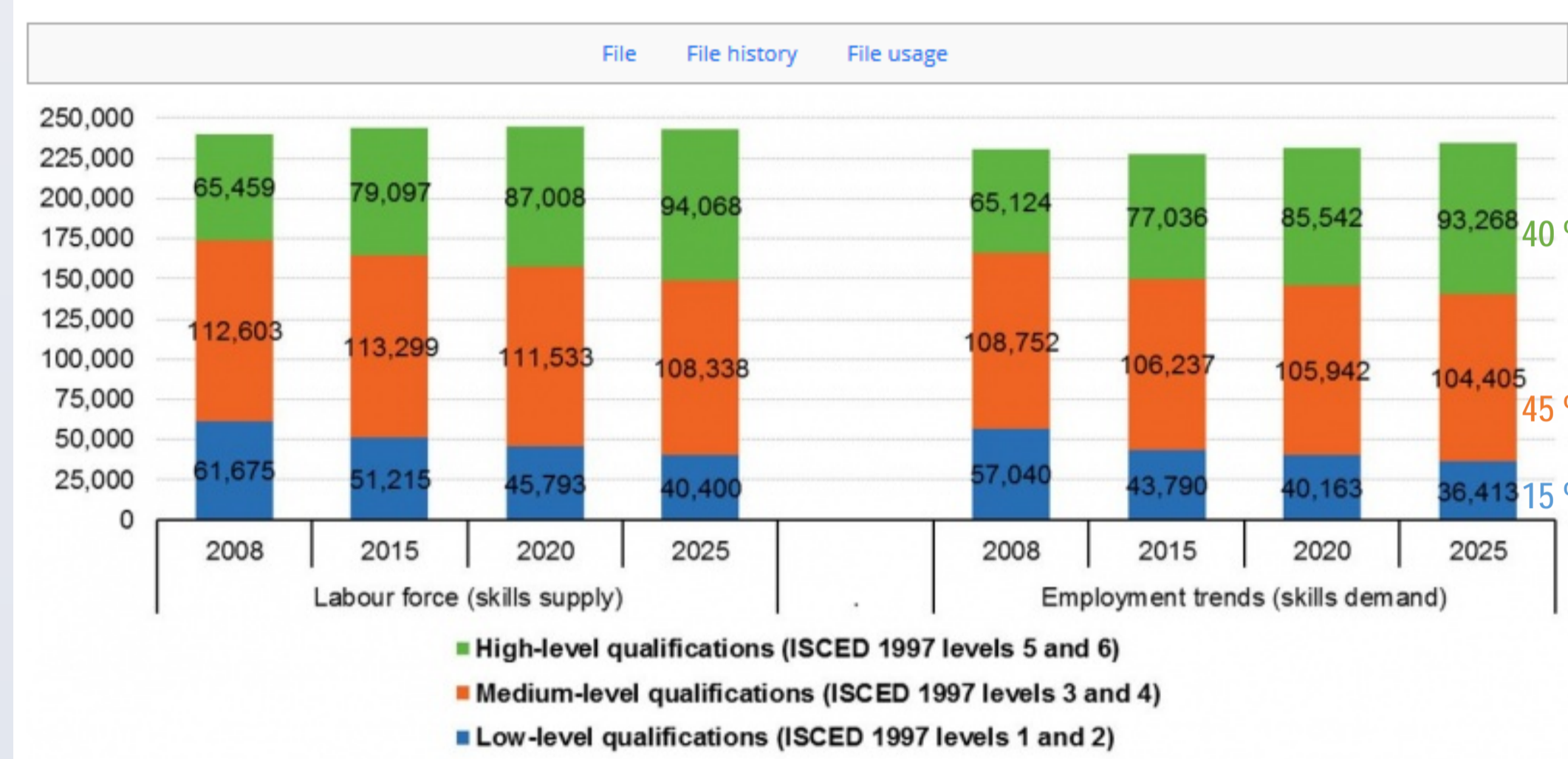
Discussing quality of knowledge and skills in society, the new PIAAC data allow us to directly observe the skills that people currently have, not just the formal qualifications that they once obtained. *Program for the International Assessment of Adult Competencies (PIAAC)* (<http://www.oecd.org/skills/piaac/>).

Countries greatly differ in literacy and/or numeracy proficiency. PIAAC data shows that 25-65 year-old Italian adults with tertiary education achieve similar literacy proficiency (281.3) than Japanese adults without tertiary education (281.1). Japanese adults with upper secondary education are more proficient in literacy (286.7) than Slovenian adults with tertiary education (285.7). Dutch adults with upper secondary education are more proficient in numeracy (280.7) as Italian adults with tertiary education (280.2). Danish adults without upper secondary education are equally proficient in numeracy (241.0) as USA adults with upper secondary education (241.0). Norwegian adults without upper secondary education are equally proficient in literacy (251.4) as Slovenian adults with upper secondary education (251.6).

### Quantity & Tertiary Education

In the majority of countries first-time graduation rates are above 40% (The EU 2020 target for 30 to 34 years old); in some of them rates are 60 % or 70 %; the trend is growing. Around the world, countries have been pushing to expand education – especially at the tertiary level.

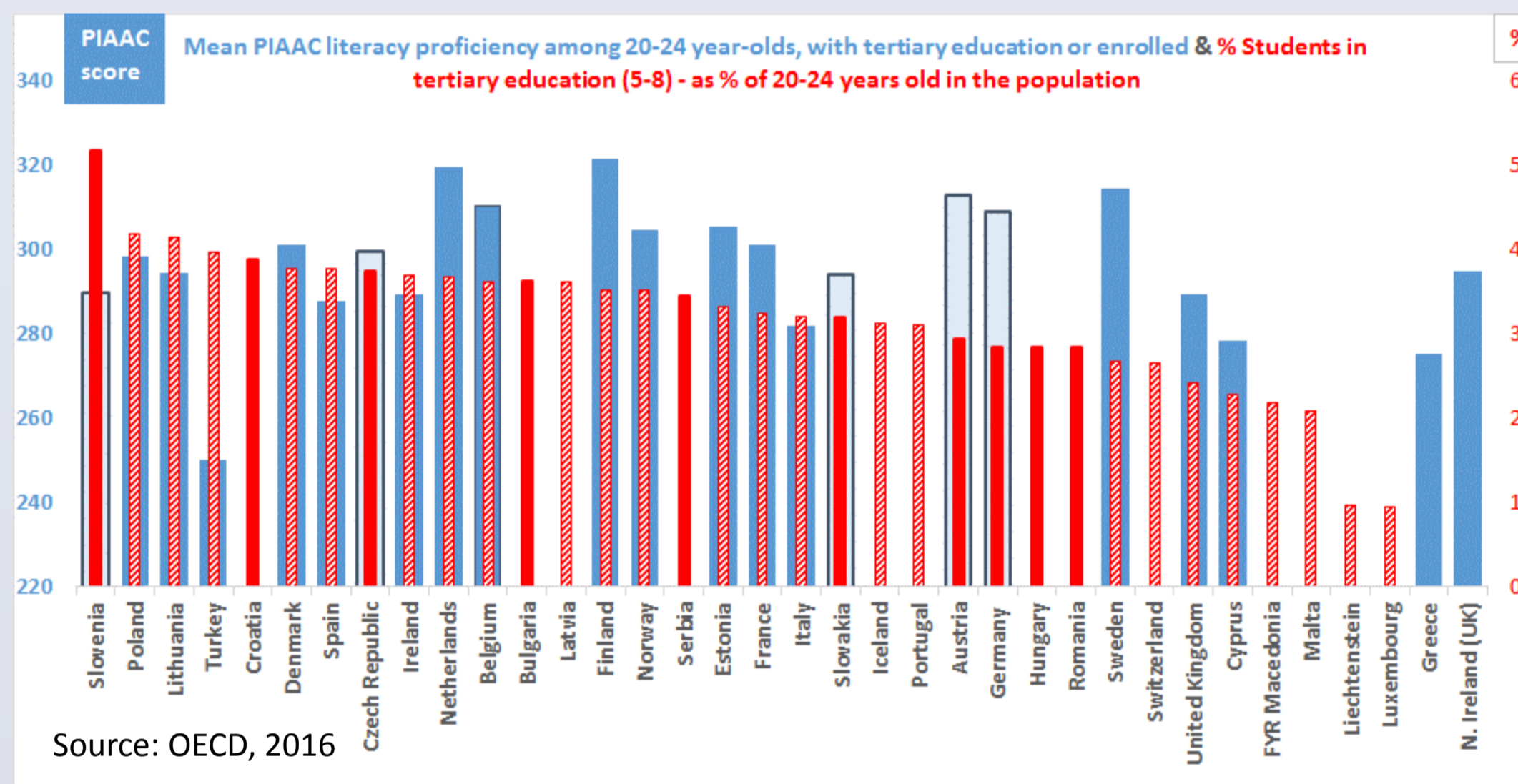
### File:Labour force and employment trends by qualification, EU-28.JPG



However, what are the employment trends by level of attainment?

Do the employment trends by level of attainment correspond with the proportion of students in tertiary education or first-time graduation rates?

Figure at the left: Labour force and employment trends by qualification, EU-28, 2008, 2015, 2020 and 2025 (1.000 persons)



There are big differences between countries. Some countries have a low proportion of adults with tertiary attainment and high mean level of PIAAC literacy proficiency. On the contrary, some countries have a high proportion of adults with tertiary attainment and a low mean level of PIAAC literacy proficiency. We cannot recognize any pattern between two sets of data.

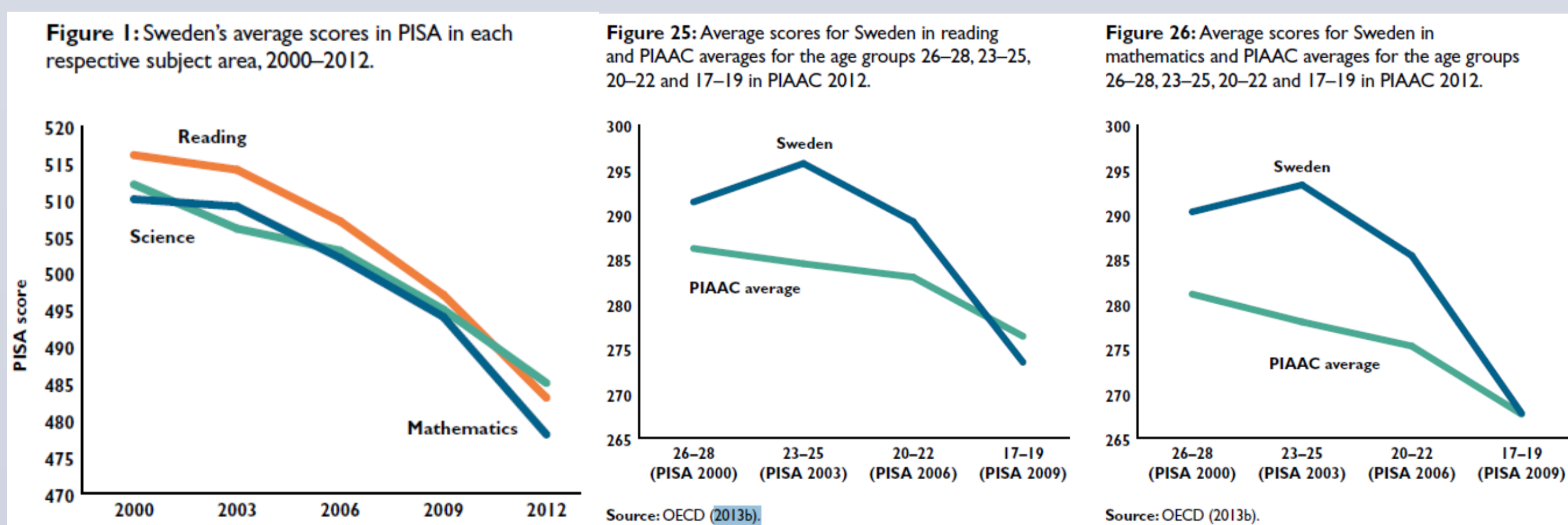
The policy discussion often appears to assume that the skills of college graduates are exogenous and fixed, implying that the expansion of higher education will lead to proportionate increases in knowledge capital (Hanushek, 2016).

With expanding tertiary schooling, the skills of admitted students are clearly below the average skills before expansion, and expansion of students attending tertiary education is likely to lower the skills of the average graduate. The skills of college graduates (value added) are endogenous and depend directly on skills at entry to college.

The output of higher education – the skills of college graduates – depend directly on admissions standards for colleges and universities. When admission standards are high and demanding, skills of those applying for admission will increase!

### Long-lasting effects

Gustafsson (2015) tested if the effects of education stay with a person through their lifetime into adulthood through analyses of the Swedish PIAAC and PISA data (at the age of 15). Performance differences between age-groups were compared with results in the five PISA studies. Figures 25 and 26 mirror Sweden's trends in the PISA assessments.

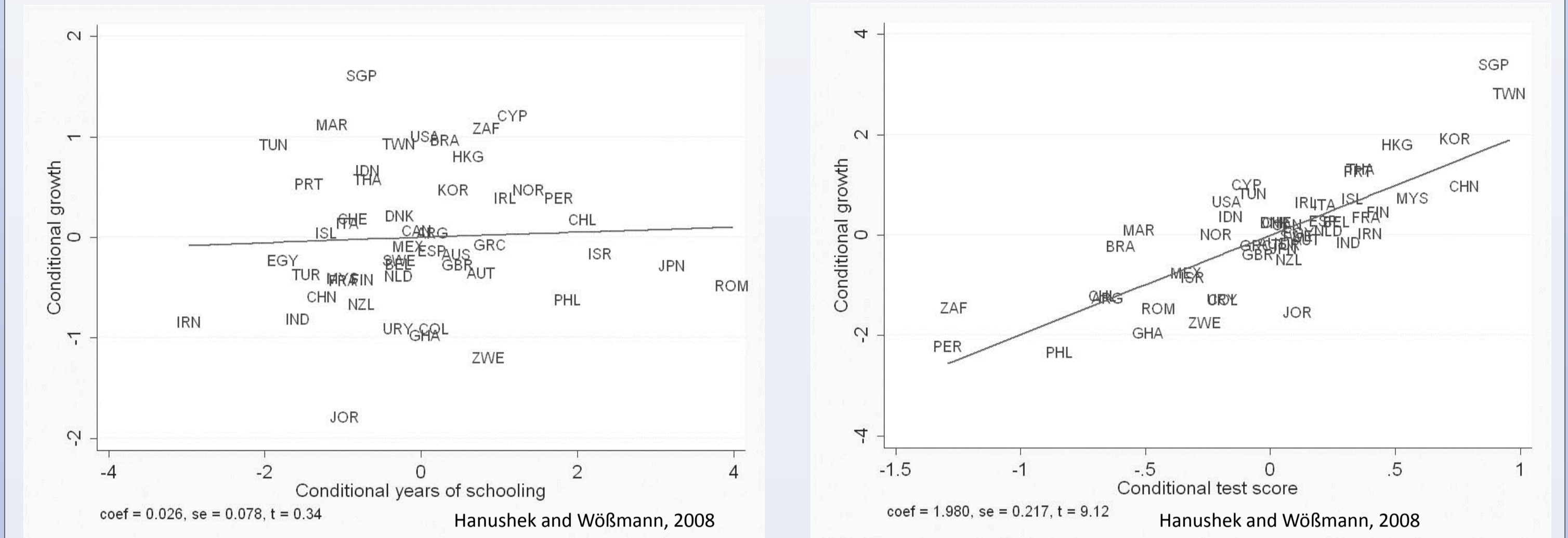


PISA achievement trends at age 15 are reflected in differences in the level of performance between adjacent age-groups in PIAAC. For the 20 - 22 and 17 - 19 age groups, i.e. those who took the PISA tests in 2006 and 2009, average scores are lower, indicating that they were not able to compensate for deficiencies in knowledge at compulsory school through increased learning at a later stage.

The level of achievement at the end of compulsory school thus lasts up to at least age 27, perhaps even life-long (Gustafsson 2016a, 2016b & Rosdahl, 2016). The role of basic education cannot be ignored even after completing secondary and tertiary degrees!

## Economic growth (GDP) is highly related to the knowledge capital of the country

Economic growth is highly related to the knowledge capital of the country (Hanushek, 2016). The association between years of schooling and growth turns insignificant and its marginal effect is reduced to close to zero once cognitive skills are included in the model (Left Figure). After controlling for the initial level of GDP per capita and for years of schooling, the test score measure features a statistically significant effect on the growth in real GDP per capita in 1960 – 2000 (Right Figure) (Hanushek and Wößmann, 2008).



Test scores that are larger by one standard deviation (measured at the student level across all OECD countries in PISA) are associated with an average annual growth rate in GDP per capita that is two percentage points higher over the whole forty-year period (Hanushek and Wößmann, 2008).

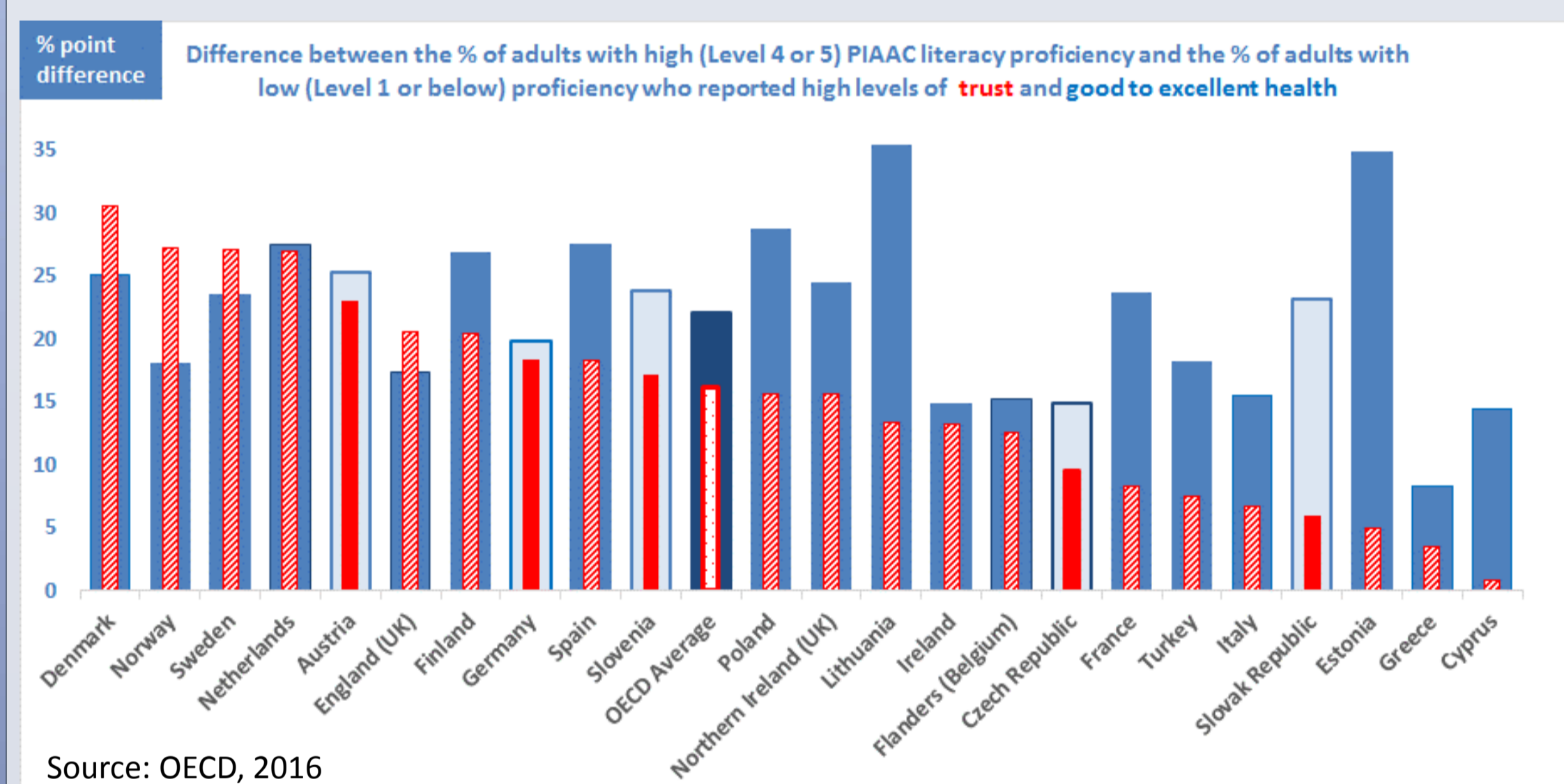
School attainment has no independent effect over and above its impact on cognitive skills. There is a big difference between the “quality approach” and the “access approach”.

School policy can, if effective, raise cognitive skills (Hanushek & Wößmann, 2012). Policy-makers interested in advancing future prosperity should focus on educational outcomes, rather than just inputs or length of study. Similar measures appear promising for the European system of higher education (Wößmann, 2014).

## Achieved cognitive skills and proficiency in literacy skills impact non-educational and non-economic features as well

Knowledge and skills of the population are a leading determinant of economic growth, employment, and earnings in modern knowledge-based economies such as the EU (Wößmann, 2014). Education reduces risk of unemployment.

Workers with higher PIAAC proficiency in information processing skills are more likely to be employed (in some countries), earn higher wages (in most countries) and have better social outcomes (in all countries).



Across countries and economies, there is a positive correlation between skills proficiency in literacy and trust, volunteering and political efficacy (with correlation coefficients in the order of 0.40).

Interpersonal trust, especially generalized trust, is a strong predictor of economic prosperity and individual well-being. (OECD, 2016).

## Research findings and some lessons from best performers

Selected lessons from best performers (Andreas Schleicher, PISA, OECD)

- Commitment to universal achievement; universal educational standards and personalization as the approach to heterogeneity in the student body (as opposed to a belief that students have different destinations to be met with different expectations and selection/stratification as the approach to heterogeneity).
- A well-established delivery chain through which curricular goals translate into instructional systems, instructional practices and student learning (intended, implemented and achieved curriculum).
- Clear articulation of who is responsible for ensuring student success and to whom.
- Aligned system incentive for students: students have incentives to take tough courses and study hard.
- Have clear and ambitious goals that are shared across the system and aligned with high-stakes gateways and instructional systems.
- Gateways affect the strength, direction, clarity and nature of the incentives influencing students at each stage of their education.
- Provide a data-rich school environment to combat inequities. “Without data, you are just another person with an opinion.” (William Edwards Deming)
- The results from PISA show higher levels of socio-economic equity in school systems that use achievement data to make decisions about the curriculum and track achievement data over time (OECD 2010).

Many traditional policies of simply providing more funds for schools or adding specific resources such as smaller classes do not provide much hope for significant improvements in student achievement. Policy makers should focus on the outcomes for individuals in terms of skills not just the inputs as the level of education in terms of years of schooling (Hanushek, 2016).

A substantial part of the cross-country variation in student achievement corresponds with differences in external exams, school autonomy, private competition and early tracking (Wößmann, 2016).