

## Country Workshop on Austria, Germany, and Italy - Minutes

### Speaker:

Dr. Simon Wiederhold (Ifo Institute)

**Start:** 2:25 pm

**End:** 4:05 pm

### Summary

#### 1.) Welcome

Few words about the presenter and the format of the workshop.

#### 2.) Why is an investigation of the wage returns to cognitive skills useful?

To date, there are only very few studies that use quality-based measures of human capital, meaning cognitive skill measures, to investigate returns to human capital in the labor market. The bulk of this evidence on returns to skills in the labor market is restricted to very selective samples – namely, young workers in the United States. Little is known about whether the U.S. estimates are representative for other countries and other age cohorts.

Providing measures of cognitive skills that can be consistently compared across a large number of countries, the data from the Programme for the International Assessment of Adult Competencies (PIAAC) offer the unprecedented opportunity to investigate to what extent modern economies value cognitive skills.

#### 3.) Introduction of the PIAAC data

PIAAC is often referred to as “adult PISA”, because it provides internationally comparable data about skills of the adult populations – whereas PISA provides test score of 15 year old pupils. Similar to PISA, PIAAC was also initiated by the OECD and the data were released in October 2013. Countries surveyed in PIAAC are mainly from the OECD, and represent about 75% of the GDP worldwide. The total costs of PIAAC are estimated at around €100 million. In each participating country, a representative sample of adults between 16 and 65 years of age was interviewed at home in the language of their country of residence. There

are at least 5,000 observations in each country, which provides enough statistical power to allow for rich analyses in subgroups.

The survey included an assessment of cognitive skills in three domains: literacy, numeracy, and problem solving in technology-rich environments, which are basically ICT skills. These skills are not directly comparable to the CPS skills that were tested in the LLLight project, the PIAAC skills also rather measure general ICT skills. PIAAC measures each of the three skill domains on a 500-point scale.

#### 4.) Numeracy Skills by Country

Many EU countries perform close to the average of the OECD participants in PIAAC, depicted by the grey bar. But even the EU top performers of Finland and the Netherlands fall short of the international top performer Japan. At a worrying level, Italy and Spain, but also France, represented by the red bars, fall substantially short of the international performance and constitute the bottom of the international league tables. The difference between the best-performing country and the worst-performing country is roughly similar to one out of five proficiency levels in PIAAC. Austria and Germany perform very close to the average across all OECD countries.

#### 5.) Returns to Skills around the World

On average across the 23 countries, a one-standard-deviation increase in numeracy skills – which is roughly equivalent to one out of five proficiency levels in PIAAC – is associated with an average increase in hourly wages of around 18 percent. This number refers to the prime-aged workers, which makes it a good approximation for the returns in terms of entire lifetime earnings. Differences in earnings due to gender and work experience are accounted for in these estimates.

However, this aggregate result masks considerable heterogeneity across countries. Six of the countries have returns to skills that exceed 21 percent: the United States with almost 28 percent, Ireland and Germany with 24 percent, as well as Spain, the United Kingdom, and Korea. These high returns differ noticeably from those in another set of eight countries, where returns to skills are below 15 percent: Belgium, Cyprus, Czech Republic, Italy, and all the participating Nordic countries. While a number of these countries do have significant income redistribution programs, but we analyze pre-tax and pre-transfer wages.

6.) Discussion of why we observe differences in the returns to skills between Austria, Germany, and Italy

Intriguingly, returns to skills are systematically lower in countries with higher union density, stricter employment protection legislation, and larger public sectors. We also observe that there is a clear positive relationship between returns to PIAAC skills and wage inequality, measured as the difference between the 90th and 10th percentile of the wage distribution. This evidence is consistent with the above finding that higher union density, stricter employment protection, and larger public sectors are negatively related to the returns to skills – all of them lead to a more compressed earnings distribution.

Several explanations from the audience were suggested for why returns to skills in Austria are similar to the average across OECD countries:

- Industry structure (mainly service-oriented)

Several explanations from the audience were suggested for why returns to skills in Germany are relatively large:

- Large share of manufacturing in the GDP (which creates high value added)
- Rise of the low-wage sector
- Vocational education system
- Small public sector

Several explanations from the audience were suggested for why returns to skills in Italy are relatively low:

- High youth unemployment rate
- Wage setting in the public sector
- Industry structure

7.) Returns to skills by age group

Most prior evidence on the return to skills has come from samples of young workers that probably give misleading estimates of the returns to skills. Using the PIAAC data, we observe that returns to skills steadily increase with age until age 35 and are reasonably flat from there on, getting only slightly smaller beyond age 55. Thus, the focus on early-career earnings in the existing literature is likely to downward bias estimated returns to skills.

Prime-age workers have, on average, more than 4 percentage points higher returns to skills than people in the entry age cohort, meaning workers between 25 and 34 years of age. This result suggests that focusing on early-career earnings would lead to underestimating the lifetime returns to skills by about 30 percent. Put differently, returns to skills are actually larger than was suggested by previous evidence.

8.) Discussion whether high returns to skills are desirable from a normative viewpoint

High returns to skills are not necessarily desirable because they typically come along with high income inequality. The example of the Nordic countries (high skills but low returns to skills) shows that societies can prosper also without high returns to skills. These countries are also among those with the highest participation rates in adult education in Europe.

9.) Discussion of what cognitive skills in PIAAC actually measure

Cognitive skills as measured in PIAAC are likely a proxy for a person's general ability, and they do not so much reflect job-specific skills.

It was suggested to include a measurement of job-specific skills in the next round of PIAAC (starting around 2020).