

11. EDUCATION AND TRAINING IN THE PRODUCTIVE ECONOMY

A larger supply of human capital, meaning the fund of knowledge, skills and talent with which individuals are endowed, goes together with higher levels of development. It helps to boost productivity both directly, by increasing the capacity of the labour force, and indirectly, by encouraging the adoption of more advanced technologies. Other indicators of economic and social welfare, such as health conditions or sense of civic duty, improve with higher levels of education. In 2010, among the targets of the Europe 2020 strategy to promote lasting and sustainable growth, the European Commission included reducing the school dropout rate to below 10 per cent and increasing the share of university graduates in the population aged 30-34 to 40 per cent. On both of these fronts Italy's numbers – 17 and 22 per cent respectively – are inconsistent with advanced-country status.

The advantage to be gained in terms of employment and earnings prospects from a higher level of educational attainment is not as great in Italy as in other countries, especially for persons who have just completed an educational cycle. The difficulty of the transition from school to work is a factor, as is the structure of Italy's productive economy, specialized in traditional sectors and dominated by small firms, which does not express a large need for human capital. The weakness of the demand for skilled labour, magnified during the crisis, contributes to reducing the incentives to invest in training and knowledge.

The effectiveness of the most recent actions to improve the education system, pursued by introducing national evaluation standards in a context in which individual schools and universities enjoy growing autonomy, has been undercut by the reform efforts' lack of an overarching approach and by the many measures to restrict spending. Training programmes for adults, including retraining for the unemployed and for workers with less prospects of employment, remain a factor of weakness of the Italian system.

Education and economic growth

The increase in schooling has played a key role in fostering growth since the Second World War. According to data published by the World Bank, in Europe the average number of years of formal education of the working-age population has doubled since the middle of the last century, rising from 5 to 7 between 1950 and 1980 and then to 11 in 2010. This, and particularly the increase in the share of university graduates (from 8 to 21 per cent in the last thirty years), has contributed significantly to the growth in labour productivity.

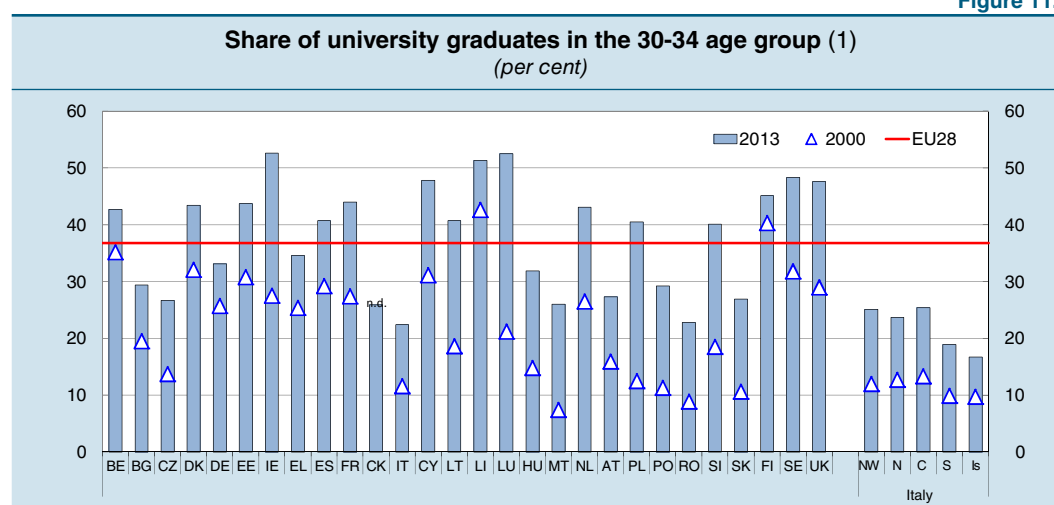
In Italy, up to the end of the 1980s economic growth, driven above all by labour-intensive industries, benefited mainly from higher literacy as a result of the lengthening of compulsory schooling; university education has played a larger role only in the last two decades.

The impact of education extends beyond the merely economic sphere. Better education is associated with better health outcomes, social cohesion and greater law-abidingness.

Italy's human capital endowment: an international comparison and domestic disparities

Between 2000 and 2013 the share of university graduates in the population aged 25-64 rose from 9.7 to 16.3 per cent in Italy and from 19.5 to 28.5 per cent on average in the European Union. In the population aged 30-34, the share in Italy in 2013 was equal to 22.4 per cent, the lowest among the EU countries (36.8 per cent on average) and short of the national objective of 26-27 per cent that the Government had established in the April 2011 National Reform Programme. In no region of Italy did the share exceed 28 per cent; the gap between the Centre and North on the one hand and the South and Islands on the other grew from around 3 percentage points in 2000 to more than 7 in 2013 (Figure 11.1).

Figure 11.1



Source: Eurostat, *Labour Force Survey*.

(1) The figure for Croatia for 2000 is not available. For Italy, the data are broken down by macro-region: North-West (NW), North-East (NE), Centre (C), South (S) and Islands (Is).

Though gradually declining since 2005, in 2013 the share of young people aged 18-24 with at most a middle-school diploma and not in education or training still stood at 17 per cent, 5 percentage points above the European average and 7 points above the Europe 2020 strategy's target.

Between the 2003-04 and 2012-13 academic years, the number of first-year students in Italian universities fell from 339,000 to 270,000. The reduction largely regarded persons aged 23 and over (down by 48,000), but from 2009-10 onwards it also involved those aged 18-20 (down by 15,000). In the last three years the share of university students in the population aged 18-20 (which contracted by 20,000)

decreased from 14.1 to 13.5 per cent, notwithstanding a slight rise in the number of new high-school graduates.

The participation of adults in training, though ever more necessary owing to radical technological change and the lengthening of life expectancy, is also modest.

A disparity is also observed in the level of achievement of those taking part in formal education. For primary school, the PIRLS and TIMSS surveys conducted for the last time in 2011 by the International Association for the Evaluation of Education Achievement found that Italian pupils had practically the same level of achievement in literacy as their peers in the European Union but underperformed in mathematics. Larger gaps with respect to the other countries emerge in secondary education: despite significant improvements between 2006 and 2009 followed by marginal gains in the next three years, the 2012 PISA surveys show Italian students aged 15 lagging considerably behind their peers in the OECD area. The weaknesses are greater in the field of mathematics and science and in the South and Islands: according to the recent Invalsi achievement tests, the gap between the results of students in the North and those of the same age in the Mezzogiorno, which at the beginning of their school careers also reflects the legacy of the differential in educational attainment of their parents, tends to widen in the course of their studies.

Lower levels of participation in formal education and of achievement are inevitably reflected in the logical-analytical and cognitive skills of the adult population. The results of the PIAAC survey of adult skills for 2012 ranked Italy last in language skills and next to last in numeracy among the 23 participating OECD countries; Japan, the Netherlands and the Nordic countries held the top positions.

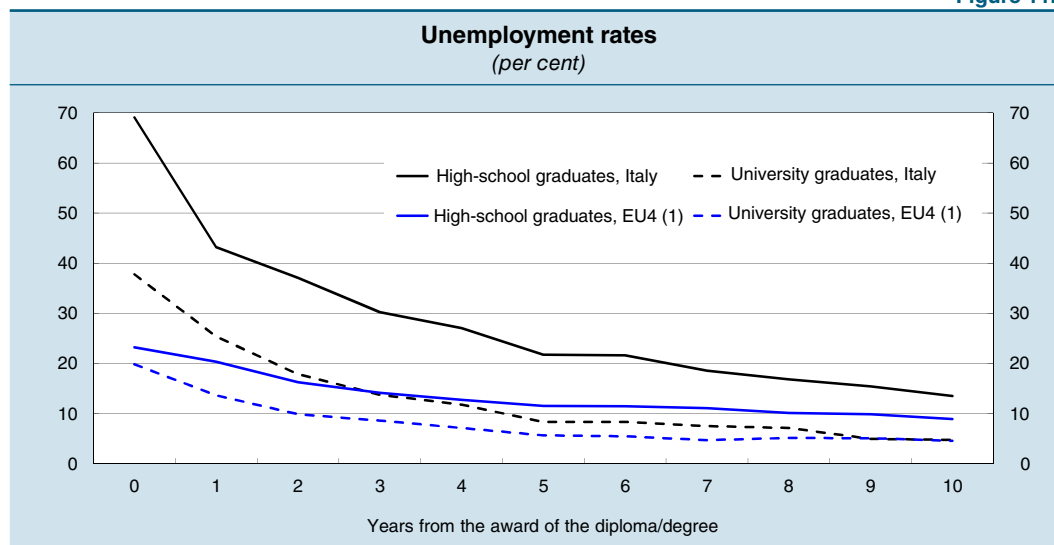
Individual returns to education and the role of labour demand

According to the Eurostat Labour Force Survey, in 2012 the probability of being in work of Italian university graduates aged 25-64 was 9 percentage points higher than that of high-school graduates of the same age, not unlike the difference in Spain, France, Germany and the United Kingdom. However, in the 25-34 age group the employment probability for university graduates was 5 percentage points lower than for high-school graduates in Italy, whereas it was 10 percentage points higher in the other main European countries. This chiefly reflects the longer actual duration of university studies, a longer transition from education to work, and the choice of fields of study with less immediate prospects of employment. In Italy, moreover, the use of less stable employment contracts is more common among young university graduates than among high-school graduates.

By contrast, the employment advantage of university graduates emerges after the completion of studies: at three years' distance, the unemployment rate is 25 per cent in Italy (14 per cent for university graduates, 30 per cent for high-school graduates) and 14 per cent on average in the European countries considered (10 per cent for university graduates, 14 per cent for high-school graduates; Figure 11.2).

According to the Eurostat survey on income and living conditions (EU-SILC), in 2010 the annual gross income from payroll employment of a university graduate exceeded that of a high-school graduate of the same age by 33 per cent in Italy and 43 per cent in the other major European countries (by 15 and 26 per cent respectively in the 25-34 age group).

Figure 11.2



Source: Eurostat, *Labour Force Survey*.

(1) Average of France, Germany, the United Kingdom and Spain.

Compared with the average of the OECD countries participating in the PIAAC survey, the return on human capital in terms of hourly wages, even when measured on the basis of the cognitive skills actually possessed and controlling for the level of educational attainment, is lower in Italy and increases more slowly during individuals' working career.

A synthetic measure of the economic advantage associated with achieving an educational qualification is provided by the internal rate of return to education, obtained by comparing the present-day value of individual benefits, in terms of higher pay and greater probability of employment, with that of the costs, both direct and in terms of foregone earnings. According to the latest OECD estimates, in Italy the annual return on a university degree is 8 per cent for a man and 7 per cent for a woman, higher than the average returns on financial assets but some 5 percentage points lower than the average figure for the other euro-area countries.

The more limited return to human capital in the Italian labour market is due at least in part to the strategies adopted by firms, whose demand for skilled labour is curbed by specialization in traditional, labour-intensive sectors, by the small scale of companies and by the institutional and regulatory framework. Using the classification of the International Labour Organization, based on the skills actually required for the performance of each occupation, the Eurostat *Labour Force Survey* indicates that in 2012 low-skilled occupations accounted for 65.3 per cent of total employment in Italy and high-skilled occupations for 15.4 per cent, significantly different from the average figures for the four other major European countries, namely France, Germany, Spain and the United Kingdom (56.8 and 23.8 per cent respectively; Table 11.1). In Italy, it is more common for specialized occupations to be filled by workers with no more than a high-school diploma (28.6 per cent against 17.9 per cent on average in the four other countries).

Firms' scant demand for skilled labour is also seen in the comparatively modest resources allocated to on-the-job training. This reflects the fragmentation of Italy's

productive fabric, in which small firms do not necessarily have an in-house training capacity, and workers' lack incentives to acquire new skills in a context in which wages are often entirely set by national labour contracts.

Table 11.1

Composition of employment (per cent)								
	Italy		EU4 (1)		Italy		EU4 (1)	
	2007	2012	2007	2012	2007	2012	2007	2012
	Share of high-skilled occupations (2)				Share of ICT occupations (2)			
Total economy	17.8	15.4	22.7	23.8	24.0	20.9	23.8	24.0
Agriculture	12.9	1.4	7.3	5.8	4.5	3.0	6.3	7.8
Industry excl. construction	8.3	6.8	17.6	18.1	25.2	22.9	29.3	34.1
Construction	6.9	5.8	10.9	12.4	15.2	24.2	15.9	32.0
Services	22.7	19.8	26.0	26.6	25.9	20.9	24.0	21.6
<i>By worker's level of education</i>								
Primary	8.2	1.4	7.5	4.1	7.3	6.1	9.1	8.8
Secondary	11.9	9.3	11.7	9.4	32.0	24.9	20.5	18.3
Tertiary	57.4	56.0	51.8	53.4	41.4	37.4	40.4	40.0
Source: Eurostat, <i>Labour Force Survey</i> . (1) Average of France, Germany, the United Kingdom and Spain. – (2) OECD definitions based on the International Labour Organization's ISCO classification. ICT occupations involve the production or use of information and communication technology.								

These findings suggest that negative feedback effects between the demand for and supply of human capital are amplifying the shortcomings. The propensity to invest in new technologies and thus the demand for skilled labour are restrained by firms' difficulty in recruiting highly educated workers, and the resulting lower return to investment in human capital then limits the incentives of young people to accumulate it.

The functioning of the education and training system in Italy

The efficacy of an education and training system depends on the complex interaction of multiple factors. Some of these concern the amount of resources allocated to the system, others, often hard to measure, the overall organization of schools and universities, which in turn affects teachers' motivation and incentives.

Childhood services. – In 2011 around 27 per cent of the population under age 3 benefited from daycare, nursery schools and other education services in 2011, 3 percentage points more than in 2007 but still below the European target of 33 per cent.

Despite the financing of the Special Plan for the Development of Early Childhood Social and Education Services (Law 296/2006), Istat data show that only half of the children in nursery school were enrolled in public nursery schools or schools operated under a convention. In the Bank of Italy's intermediate survey on Italian households, the main reasons cited for recourse to private facilities at this level, unlike at the

subsequent levels of schooling, were the insufficient number of places available and the short school day.

The school system. – In 2011 public spending on early childhood, primary and secondary education amounted to 3.5 per cent of GDP (4.3 per cent including university education), one of the lowest levels since the start of the 1990s and less than in the four other major EU countries. Including the private component, at purchasing power parity annual expenditure per pupil on schooling in Italy in 2010 was higher than the average of the EU countries belonging to the OECD for early childhood and primary schools but lower for secondary education (\$8,607 against \$9,471).

For a given amount of expenditure, the effectiveness of a school system reflects a variety of factors, such as the quality and motivation of teachers, the organization of studies, teaching techniques and hours, and the infrastructure endowment.

The current system of teacher recruitment does not feature significant mechanisms to preserve staff quality. Public competitions for teaching positions are sporadic, and the consequent use of seniority of registration in the lists of aspiring teachers as the sole selection criterion has slowed the rejuvenation of staff and merit-based permanent hiring. The prospect of delayed appointment to a permanent position, after a prolonged period of precarious employment that does not envisage evaluation of teaching skills and performance, has created mechanisms of adverse selection in the profession. Additional investment by teachers in training and refresher courses is discouraged.

The introduction of post-graduate courses of specialization in secondary education, provided for by Law 341/1990 but not activated until the period from 1999 to 2008, did not affect the method of teacher recruitment. Initially conceived as a path of training and privileged access to the profession, these courses became de facto an additional channel for gaining a permanent position. By contrast, the revival of public competitions for the selection of the teaching corps pursuant to Ministerial Decree 82 of 24 September 2012 does mark a change.

The university system. – In 2010 annual spending per university student at purchasing power parity amounted to \$9,580 in Italy, 25 per cent less than the average of the EU countries belonging to the OECD; Italy's lower per capita expenditure is due in part to the large number of students who continue to be enrolled after not completing their studies within the normal span of time. In Italy, participation of the private sector does not make up for the deficiency of public funds, in part because of the lack of targeted programmes such as student loans, which could help families sustain the costs of education. The number of scholarships is modest (8.6 per cent of the student population in the 2012-13 academic year) and insufficient to cover all eligible students (one in five was excluded).

In addition to commanding a smaller volume of financial resources, students at Italian universities are also disadvantaged by the smaller number of faculty members compared with other advanced countries: at Italian universities there are 19 students per teacher, against an OECD average of 16.

Recruitment procedures, whose ability to select the most meritorious teachers was the subject of a hot debate, were reformed by Law 240/2010. The new procedure calls for periodic academic certification at national level in order to ensure minimum

standards of quality, followed by hiring procedures decided autonomously by each university. In this second phase, the actual selection of the most highly qualified staff depends on making full use of evaluations of the quality of research and eventually, teaching.

Adult training. – The need for those who have completed their formal education to update their skills conflicts with the limited volume of resources allocated to adult training, and particularly the paucity of investment in active policies for the re-skilling of persons who have lost their jobs, taking into account the demand for skills in the labour market.

Law 92/2012 (the Fornero reform), Decree Law 34/2014 and Draft Enabling Act S. 1428/2014 have delegated the Government to reform the system of active labour market policies and have made changes to contracts involving training, such as trainee and apprenticeship contracts. The European Youth Guarantee programme is to finance interventions, for the two years 2014-15, to create job and training opportunities for youths aged 15-29 within four months of their becoming unemployed or leaving formal education.