

2023 ANNUAL REPORT

The state of the Nation

Summary

presented by Francesco Maria Chelli, acting President of Istat
Friday, 7th July 2023 in Rome - Palazzo Montecitorio



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Introduction

Mister President of the Chamber of Deputies, Government Representatives, Authorities, Ladies and Gentlemen, good morning.

This 31st edition of Istat's Annual Report, a summary of which is offered here, provides a broad information base for analysing the Country's situation at a time characterised by significant opportunities, such as those opened by the National Recovery and Resilience Plan (NRRP), but also by new elements of crisis and uncertainty.

This year's Report adopts a medium- to long-term perspective and illustrates the demographic, social, economic, and environmental transformations that have characterised Italy in recent years. Recognising the interconnections between these aspects, which affect the productive and social fabric in different ways and pace, is necessary not only to confront the complexity of the present, but also to head for a more balanced, sustainable, and inclusive phase of development.

In the various editions of its Annual Report, Istat has often documented the impact of the health emergency on the economy and society and the growing inequalities in incomes and opportunities, also in terms of regional differences in infrastructure endowment and service accessibility and quality. Over the past two years, persistent international crisis factors have led to rising inflation, generating new forms of poverty and new needs for social services.

The 2023 Report looks at the present to single out the levers on which to act to start designing the future again. Accordingly, it focusses its analyses on young people and the most dynamic components of the productive system and civil society, which are vital for promoting a change phase that will take time and new energy to be redesigned.

Being able to meet an ever-increasing demand for information has always been a priority for Istat. It is precisely with this objective in mind that the Annual Report we present today is built, as usual, on high-quality statistical data derived from a plurality of information sources, such as direct surveys, administrative archives, and new sources, including digital ones. This is, however, only the tip of the iceberg of a complex system of statistical production, which also includes technical and administrative support functions performed by qualified and motivated colleagues, whom I take this opportunity to thank.



The macroeconomic picture

The state of national health emergency ended in 2022 (31 March), but elements of high criticality emerged during this year, generating new uncertainties. The sharp rise in energy and primary commodity prices affected economic development in Italy, with significant increases in production costs for businesses and consumer prices for households. Inflationary dynamics eased significantly in early 2023 for production prices, while it remained sustained although gradually decelerating for consumer prices. In May 2023, industrial producer prices fell by 2.3 percent on a monthly basis and by 4.3 percent on an annual basis. In June 2023, the Italian Consumer Price Index (CPI) for the whole nation, including tobacco, had a zero change on a monthly basis, and a 6.4 percent increase on an annual basis. The slowdown in the inflation rate was driven by the trend deceleration of prices of unregulated energy goods (from +20.3 percent to +8.4 percent).

The slowdown in the inflation rate was driven by a trend-based slowdown in the prices of unregulated energy goods (from +20.3 percent to +8.4 percent). In the same month, “core inflation”, net of energy and fresh food, slowed down but remained high (+5.6 percent). As also deepened in this Report, inflationary dynamics continued to spread significantly over some production chains and distribution channels. The evolution of inflation, according to Istat’s forecasts of early June 2023, is set to slow down gradually in the coming years following the fall in energy goods prices and restrictive policies implemented by central banks. A reduction in the dynamics of the deflator of household expenditure is estimated both in the current year (+5.7 percent) and, to a greater extent, in 2024 (+2.6 percent). The erosion of wage purchasing power has been substantial in 2022 and will continue in 2023-2024 if contracts are not promptly adjusted.

The performance of the Italian economy in 2022, however, was positive, both in terms of real growth and employment. GDP recovery continued throughout the year, with an average 3.7 percent year-on-year increase, higher than in France (+2.5 percent) and Germany (+1.8 percent). Growth was sustained by resident household expenditure and the particularly positive trend in gross fixed capital formation (+9.4 percent); this, in turn, was boosted by grants for home improvements and investments in more technologically advanced plants and machinery.

Net foreign demand, on the other hand, made a negative contribution, due to the effects of the energy crisis. On the supply side, the most dynamic sectors were construction (+10.2 percent), trade, public establishments, transport, and telecommunications (+9.3 percent). Industry in the narrow sense remained almost stable, while agriculture declined (-1.8 percent).

The labour market trend has been positive. During 2022 and in early 2023, the increase in employment was accompanied by a decrease in unemployment and inactivity. In May 2023, the employed population (23.471 million) was higher than in spring 2008, before the great recession. The employment rate reached 61.2 percent in May (over two points higher than the average rate in 2008), the unemployment rate dropped to 7.6 percent, and the inactivity level remained



stable at 33.7 percent.

Employment increased for men, women, and all age groups, except for the 35-49 year olds. This age group, in fact, already showed the effects of the gradual decrease in the resident population of the size of cohorts born since the mid-1970s. In relative terms, however, the employment rate also increased among the 35-49-year-olds, as the decline in employment in this age group was less pronounced than in the corresponding overall population.

In the first quarter of 2023, Italy's GDP showed a higher short-term increase (+0.6 percent) than that of the Euro area (-0.1 percent), reflecting an increase in value added in the construction and service sectors (+1.5 percent and +0.8 percent, respectively) and a decline in industry in the narrow sense (-0.2 percent). On the demand side, while the domestic component made a positive contribution to GDP growth, net foreign demand continued to be negative.

According to Istat's forecasts released in early June, albeit conditioned by strong uncertainty, Italy's GDP is expected to grow, both in the current year (+1.2 percent) and in 2024 (+1.1 percent), but at a slower pace than in the previous two years. The increase in GDP will be supported mainly by domestic demand and, to a lesser extent, by net foreign demand, which will benefit from the end of the most acute phase of the energy crisis. Investments will mark a 3.0 percent increase (a lower rate than that recorded in the previous two years), to finally decelerate the following year (+2.0 percent). The slowdown in investment dynamics compared to 2022 is conditioned by the expiration of construction incentives; by contrast, between 2023 and 2024, investments related to the gradual implementation of the NRRP will strengthen.

The demographic outlook and its long-term effects on the Country's ability to grow

On the demographic front, the decline in the number of residents, which started at the end of 2014, continued in 2023, because of largely negative natural change (more deaths than births), increasingly less offset by the positive effects of migration balances. Evidence showed that during the first four months of this year, births have continued to decline, down by 1.1 percent less over the same period of the previous year. Deaths declined by 8.3 percent in contrast to the sharp increase that had dramatically characterised the previous three years.

Several contingent factors affected demographic trends in 2022: the end of the state of health emergency, which gave new impetus to domestic and international migration; an increase in the number of individuals seeking humanitarian protection from the war in Ukraine; and excessive heat in the summer months, which resulted in a new spike in deaths in the elderly population. As of 31 December 2022, there were 58,851,000 residents in Italy, 179,000 less than at the beginning of the year. Foreign nationals numbered 5,050,257, *i.e.* 8.6 percent of residents, 51 percent of whom were women, slightly up from 2021. As for the natural balance of births and deaths, 2022 was marked by a new record low in



births (393 thousand, under 400 thousand for the first time since the Unification of Italy) and a high number of deaths (713 thousand). In 2022, entries in the Registry Office from abroad amounted to 361 thousand, with a major boost also coming from migration movements due to the war in Ukraine that broke out at the end of February that year. The presence of a stable Ukrainian community (225 thousand registered at the end of 2021) explains why Italy exerted a pull effect on refugees from the war. The slowdown in outflows, which started in the pandemic year, continued in 2022, although there were no constraints on movement. Cancellations from the Registry Office of Foreigners fell to 132,000.

Fertility of the resident population has returned to 2020 levels (1.24 children on average per woman in 2022) but remained below the pre-pandemic period (1.27 in 2019). Persistent low fertility is one of the hallmarks of Italian demographic evolution, which has caused a consistent decline in the number of potential parents in recent decades, in turn, responsible for the sharp decline in births we observe today. In the transition from the generation of parents (“baby boomers”) to that of their children (born in the mid-1990s), numbers have almost halved. The evolution of the average number of children per woman in Italy continues to be influenced by the postponement of the childbearing age. The average age at first childbirth for women living in Italy increased by 12 months from 2010 to 2020, while it remained stable in 2021 and 2022, at 32.4 years.

Regarding longevity, population survival levels in 2022 remained below pre-pandemic levels, with a loss of more than 7 months in terms of average years lived, compared to 2019 among both men and women. The estimated life expectancy at birth was 80.5 years for men and 84.8 years for women. As of 2021, men had recovered about 2.5 months of life expectancy. For women, however, this value remained unchanged compared to 2021.

The slowdown in the growth rate of women’s life expectancy had already started before 2020, but the pandemic reinforced this trend. The impact of the crisis on the health care system, and the resulting difficulty in scheduling medical check-ups and examinations, was more pronounced for women, who are keener on prevention than men.

In 2022, life expectancy at the age of 65 was estimated at 18.9 years for men and 21.9 years for women. The comparison with the previous year shows once again that only men gained (+0.1), while women lost one decimal point. When compared to 2019, a loss of about six months for men and more than eight months for women persisted, further confirming that the pandemic had negative effects, especially among the elderly and the female population.

Despite the high number of deaths recorded in the past three years, (over 2 million 150 thousand), 89.7 percent of which were over 65, the average age of the population rose from 45.7 at the beginning of 2020 to 46.4 in early 2023. As of 1 January 2023, people over 65 were 14.177 million, 24.1 percent - nearly a quarter - of the total population. The number of people over 80 has also grown, reaching 4.529 million and accounting for 7.7 percent of the population. The estimated number of over 100-year-olds reached its highest historical



level, reaching 22,000 units, over 2,000 than in the previous year. Since the beginning of the millennium, their number has tripled. In contrast, individuals of working age (15-64 years), decreased to 37.339 million (63.4 percent). The number of younger people also decreased: children up to 14 numbered 7.334 million (12.5 percent of the total resident population). Forecasts suggest a substantial increase in the so-called “older adults”. By 2041, the population over 80 will exceed 6 million; that of people over 90 will even reach 1.4 million: an unprecedented demographic situation that poses major challenges to the sustainability of the country’s system.

The phenomenon becomes even more critical when analysing the demographic dynamics in the different regions. Inland areas, which were particularly critical in terms of accessibility to services, were characterised by a marked demographic decline and progressive population aging; these phenomena were even accentuated by strong emigration, especially of young people, which was not offset by as many inflows. Demographic decline and aging in the inland areas have been observed since 2011, while in the central areas, the phenomenon has been evident since 2015.

Over the past twenty years, the population living in inland areas has decreased from 23.9 percent to 22.7 percent of the total residents in Italy. At the same time, the ratio of elderly to young people of working age increased. As of 1 January 2023, the inland areas had, on average, 122 residents aged 65 or older for every 100 young people aged 15-34 (it was 73.6 in 2002), but in many municipalities in the Apennine belt this figure exceeded 160; in the central areas this ratio was 116.7 (it was 69.5). The decrease in the young population, thus, has a greater impact on inland areas, especially those in the Centre and South. It risks exacerbating the already well-known elements of fragility in these areas and feeding the spiral of continuous population reduction.

The demographic mechanisms just described are, therefore, already largely implicit in the present age structure. Consider that baby boomers of the 1960s are now essentially out of the range of reproductive ages conventionally set at 15-49 and are about to enter the so-called “third age”.

This shift, combined with longer life expectancy and declining birth rates, will make a determinant contribution to the massive demographic aging to come over the next three decades, with significant effects not only on the social level but also on the growth potential of the economy.

Breaking down the dynamics of per capita GDP, it is possible to pinpoint the effects produced by certain elements of change in the economic, social, and demographic structure on the evolution of the level of economic wealth per inhabitant of Italy and the major EU27 economies over the past two decades. Despite the limits of the method adopted and confirming the central role of productivity as the engine of economic wealth growth, the analysis shows how a gradual process of depowering of per capita GDP growth has begun due to the aging of the population, particularly that of working age. This effect of a demographic nature may be amplified by limited labour force participation,



particularly noticeable among young people and women. This development, admittedly common to other major EU countries, is particularly marked in Italy, not only given its demographic evolution prospects but also the peculiar structural characteristics of its labour market and production system.

The substantial increase in the elderly population will constitute an unprecedented, vast change for Italy. On the qualitative level, action can be taken to improve their well-being, so that longer life horizons can go hand in hand with years lived in good health, autonomy, and a satisfying relationship life.

Young people to be the driving force for change and renewal in the country

Youth participation in the economic and social life of the country is crucial to ensure a more inclusive and sustainable development model, economic growth, and the very balance of the welfare system. The Next Generation EU Programme recognises the centrality of the “youth” factor in addressing future challenges arising from the demographic, digital, and ecological transition. Demographic forecasts, however, show that young people will be an increasingly less available resource in Italy’s future. To escape from this situation, it is essential to promptly and radically reverse the trend, unfortunately, inveterate in our country, of dissipating the energies and skills of the new generations.

In 2022, nearly one in two young people (47.7 percent of the 10 million 273 thousand 18–34-year-olds) showed at least one sign of deprivation in one of the key domains of well-being (Education and Work, Social cohesion, Health, Subjective well-being, Territory). In this set, more than 1.6 million (or 15.5 percent of the 18–34-year-olds) were multi-deprived, that is, they showed signs of deprivation in at least 2 domains. Levels of deprivation and multi-deprivation were consistently highest in the 25-34 age group, the most vulnerable one, consisting of those entering adult life and facing such crucial milestones, like entering the labour market, leaving the family of origin, starting an independent life, entering a union, and choosing to become parents. An analysis of multi-deprivation confirmed that for most young people, reaching these milestones was increasingly an obstacle race. The postponement of such milestones has been, indeed, the most common reaction of generations entering adulthood over the past decades. On the other hand, precarious and fragmented work experiences and low social mobility have compromised many young people’s opportunities to realise their aspirations and discouraged their active participation at various levels, political, social, and cultural.

In Italy, the intergenerational transmission mechanism of poverty is more intense than in most European Union countries: nearly one-third of adults (25-49 years old) who are at risk of poverty, indeed, used to live in financially challenged households when they were 14 years old.



With a view to welfare as a social investment, Istat's Annual Report analyses some items of public spending aimed specifically at the early stages of children's and young people's lives. The ratio of public spending on education to GDP reveals Italy's lower commitment to this function, compared to the largest economies of the EU27 (4.1 percent of GDP in Italy in 2021 compared to 5.2 in France, 4.6 in Spain and 4.5 in Germany), and in general compared to the average of the EU27 countries (4.8 percent). Data on social protection spending show that all countries are markedly focussed on functions covering the risks of adult and older generations, rather than protecting the youngest. Italy spends a very small share of GDP on social benefits to households and minors, amounting to 1.2 percent compared to 2.5 percent in France and 3.7 percent in Germany.

Reducing the intergenerational gap is a cross-cutting priority of the NRRP, which includes investments aimed at improving youth employment levels and quality, reducing early school leaving, and improving skill levels. Within this framework, two interventions are particularly relevant in terms of resources allocated: the Nursery and Kindergarten Plan and Early Childhood Education and Care Services (4.6 billion euro), and the School Building Safety and Refurbishment Plan (3.9 billion euro).

In 2021, childcare coverage in Italy was 28 percent of total resident children, while the European target for 2030 was 50 percent. Nearly 5 percent of Italian children under the age of three attended kindergarten as pre-schoolers - although the service was not expected to be adapted to the specific needs of 2-year-olds - due to the greater accessibility of these schools, their greater spread throughout the territory, and their much lower costs compared to nursery schools.

As regards school buildings, most state school buildings do not yet meet all safety requirements: certifications are in place in just under 40 percent of cases. Regarding reachability by public transportation, a significant disadvantage is observed in the South and Islands: 14.8 percent of the buildings considered are poorly reachable, either by school bus or public transport means (7.8 percent in the Centre and 5.7 percent in the North). Slightly more than one-third of school buildings, both state and non-state, are free of physical barriers and, therefore, accessible to pupils with disabilities, with an almost 8-point gap between northern and southern regions, to the disadvantage of the latter. Only 16 percent of schools have "visual signage" for students with deafness or hearing loss, while "relief maps and tactile guiding paths", necessary to make spaces accessible to students with vision impairment or low vision, are present in only 1.5 percent of schools.

The opportunity to start up and run economic activities independently is a concrete way to enhance the initiative and innovation skills of younger generations. In 2020, enterprises led by young people (under 35) were just over half a million and accounted for 11.7 percent of total industry and services. The share of youth entrepreneurship declines as firm size increases. Businesses run by people under 35 are more recent: in over half of the cases, they were established less than two years ago. Young entrepreneurs were mostly active in health care and social assistance, where they accounted for 19.4 percent



of businesses in the sector; in arts, sports, entertainment, and recreation (17 percent); and in accommodation and food services (16 percent).

46.5 percent of total youth enterprises were in the North, where half of our country's enterprises typically were based, but it is in the South and Islands area that the incidence of youth-led enterprises was highest: 13.9 percent in the South and 13.2 percent in the Islands, respectively, compared to 10.1 percent in the North-east. In the South and Islands, over half of youth-owned businesses were active in the trade, accommodation and food, and health care and social assistance sectors, compared to 36.7 percent in the North-west.

Population decline, education, and labour market

The effect of the gradual population aging is already being seen now in the education system and the labour market and will be even more widespread and pronounced in the future.

Between 2021 and 2050, Italy's resident population is estimated to shrink by nearly 5 million, with a substantial change in the age structure. This is likely to occur as early as in the 2021-2041 period when residents in the under-24 age group will drop by about 2.5 million (-18.5 percent) and those between 25 and 64 by 5.3 million (-16.7 percent). The effects of population decline will be highly differentiated between geographical areas and between urban and rural settings. Forecasts suggest that all regions in the South and Islands will experience larger declines in population than the national average both among the under-25s and the 25-64-year-olds. The population contraction in Sardegna and Basilicata in the 0-24 age group, for example, is estimated to exceed 30 percent. In the 2021-2031 decade, the population is expected to reduce by 1.8 percent in cities (from 20.8 million to 20.5 million), 5.5 percent in rural areas (from 10.1 million to 9.5 million), among them, 9.1 percent in inland areas.

Considering the change in the 0-24-year-old population and its impact on the education system, in 2041 it is expected that there will be a reduction of 5.3 percent in the 0-5 age group, over 25 percent in the 11-18 age group (in secondary education), and just under 20 percent in the age groups in primary (6-10 years) and university education (19-24 years). For the 25-69 age group, representing the working-age population, the reduction will be 12.3 percent also due to the trend toward raising retirement age.

The effects of these generational imbalances on the labour market are already evident. The aging process of the labour force in the 15-64 age group has been faster than that of the population in the same age group: in 2022 the average age of the labour force was 43.6, compared to 42.0 for the total population. The growth of as many as 349,000 employed people aged 65 and over - doubled as a direct result of the delayed retirement age following the 2011 retirement system reform (known as the Fornero reform) - contributed to an increase in the number of employed people by 784,000 between 2004 and 2022. In addition, the overall growth in employment in the same period was not equally recorded



across the territory: employment increased by more than 1 million in the North and Centre, while it decreased by nearly 300,000 in the South and Islands.

Concerning the employment rate, the disadvantage of younger age groups stands out: the employment rate among the 15–34-year-olds has decreased since 2004 by 8.6 percentage points (43.7 percent in 2022), while it has increased by 19.2 points for the 50–64-year-olds (61.5 percent in 2022).

Over the 1993–2022 period, the activity rate of the population aged 15–64 increased by about 6 percentage points (65.6 percent in 2022), solely due to the increase in female participation, which grew almost twice as much (56.5 percent), while the male activity rate remained essentially unchanged (74.7 percent). The gender gap has thus narrowed in all age groups but remained considerable: it exceeded 20 percentage points in 2022 but was lower in the 15–34 age group (12.6 percentage points).

Several factors combine to explain the steady increase in female labour market participation and retention even after maternity leave: cultural changes, rising levels of education, the tertiarisation of the economy, and, in recent years, also the raising of the retirement age. The growth of women's employment in our country has been almost constant, only interrupted by periods of crisis, particularly in 2020, when the sectors most affected were those with a larger female representation. In 2022, the number of employed women increased by nearly one million compared to 2004, against a reduction of 154,000 men, and the ratio of women to the total workforce increased from 39.4 to 42.2 percent. Despite this progress, the gap with the EU27 average (46.3 percent) remained wide. Italy continued to be, along with Malta and Greece, one of the European countries with the lowest female participation in employment. Moreover, when considering the female employment rate, the distance with the EU countries as a whole over the last decade is considerable: for the 25–64-year-old cohort, in 2022, the share of employed women in Italy was 57.3 percent, compared to 71.2 percent for the EU27, 14 percentage points lower, which is reduced to 4.7 in the case of women with a university degree.

Education plays a particularly important role in boosting women's employment: the employment rate of female university graduates aged 25–64 is more than double that of women with at most upper secondary education (80.2 percent versus 36.3 percent). Investment in education also reduces geographical gaps: the wide gap in the employment rate of people aged 25–64 to the disadvantage of the South compared to the North (-22.7 points) narrows significantly among university graduates (-12.6 points).

In the South and Islands area, the educational qualification attained plays an even more decisive role in women's employment: the share of 25–64-year-old employed women reaches 70.3 percent among female university graduates while it stands at 20.7 percent among women with low educational qualifications. Again, the wide North-South gap (-28.7 percentage points) decreases among female university graduates (-14.7 percentage points).



Women's participation in the labour market is very much related to family burdens, the availability of childcare and care services for children and fragile household members (disabled, dependent, elderly), as well as cultural patterns. In 2022, the employment rate of the 25-49-year-olds was 80.7 percent for women living alone, 74.9 percent for those living in a couple without children, and 58.3 percent for mothers. Again, the disadvantage gap between mothers and childless women narrowed significantly for women with higher educational qualifications. For female university graduates, the employment rate exceeded 70 percent, regardless of their role in the family (except that of daughters), and in all geographical areas.

The higher the woman's educational qualification, the lower the share of couples in which the man is the sole breadwinner: it drops significantly from 47.4 percent of couples where the woman has at most a lower secondary school degree to 9.6 percent where the woman has a university degree.

Thus, a very heterogeneous picture emerges, with the employment rate of women aged 25-49 ranging from a minimum of 21.4 percent of mothers with low educational qualifications in the South and Islands to a maximum of 92.7 percent of university-graduated women living on their own in the North.

The non-participation of young people and women in the labour force further increases the negative effect of demographic decline on the size and structure of the working-age population.

In the 30-34 age group, that is likely to have completed postgraduate studies and overcome any delay in obtaining a university degree, 12.1 percent of people claim they have never worked. This incidence varies widely by gender, geographical area, and, above all, education level: among university graduates, it is about one-third as high as among those with at most a lower secondary school diploma (7.0 percent versus 21.4). The positive effect of educational qualification is most evident among women (7.5 percent of women aged 30-34 have never worked against 38.3 percent of their peers with lower secondary school education at most) while it is minor among men (6.2 compared to 8.5 percent). Lack of work experience makes subsequent integration difficult, with the risk of being excluded or being forced to take less qualified jobs. In 2022, 9 percent of individuals (about 1.2 million) of the population aged 50-64 have never worked, and most of them (91 percent) were women. This gender gap - with important economic implications and potential social exclusion - also varied widely across the territory and by level of education: in the South and Islands, 46.1 percent of 50-64-year-old women with at most a lower secondary school diploma have never worked, compared with 3.4 percent of female university graduates of the same age.

Education, therefore, remains one of the main solutions for increasing labour market participation and reducing gender gaps in employment. Women in Italy are, on average, better educated than men and stand out for a lower dropout rate. 60.3 percent of men aged 25-64 have an upper secondary school degree (65.7 percent among women) and only 17.1 percent have attained a tertiary



degree (compared to 23.5 among women). In 2022, the dropout rate among 18-24-year-olds was 13.6 percent for boys (it was over 20 percent in 2012) and 9.1 percent (down from 14.3 percent) for girls, which is +2.5 and +1.1 points above the EU27 average values, respectively.

The phenomenon of NEET, young people who are not in education, employment, or training, affects girls (20.5 percent) more than their male age peers (17.7 percent), the 25-29 age group (one in four people), residents of southern regions (27.9 percent), and foreign nationals.

These latter present a rate (28.8 percent) higher than that of Italians aged 15-29 by almost 11 percentage points, and this distance doubles in the case of girls (37.9 versus 18.5 percent).

The negative effects on the labour force of the strong reduction in the resident population of study and working age expected in the next 20 years may be offset by an increase in education and labour market participation rates. In particular, increasing the quality of education and training and a greater orientation toward the skill needs of society and the production system will help improve the quality and consequently the productivity of human capital.

Analyses show that higher education attainment offers better employment opportunities and higher labour income. The employment rate of university graduates is 30 points higher than that of individuals with at most a lower secondary school diploma in the 25-64 age group. This difference reaches 35 points in the South and Islands and 44 among women. In addition, university graduates earn on average about 2.5 times the net income of workers with at most a lower secondary school diploma (2.8 times in the EU27).

Over the 2011-2022 period, skilled employment - the set of all those carrying out a profession in the first three major groups of the ISCO-08 classification (legislators, entrepreneurs, senior management, and highly specialised intellectual and technical professions) - grew much less in Italy than in other major EU economies (less than 1 percentage point as against 4.7 in the EU27), and now accounts for 36 percent of the total (as in Spain), while in Germany and France the figures are close to 47 and 49 percent, respectively.

In 2022, human resources in science and technology (people employed in skilled occupations or with tertiary education) accounted for nearly half of the working population aged 25-64 in the EU27, 8.4 points higher than in 2011, compared with just 37.4 percent in Italy, where they grew by only 2.8 points. The incidence ranged from about 40 percent in the North-west and the Centre to 30.5 percent in the Islands. It reached 40.8 percent among people younger than 35, and 34.5 percent in the 55-64 age group.

Although the share of 25-34-year-olds with at least upper secondary education increased by 6 percentage points over the past decade, reaching 78 percent in 2022, it remains 7.4 points below the European average (if the 25-64 age group is taken into account, the gap reaches 16.5 points). Over the past decade, the



share of early school leavers aged 18-24 remained significant (11.5 percent in 2022), but the gap with the EU27 average has narrowed significantly (from 4.7 percentage points to only 1.9).

Almost one in 10 young people with an upper secondary school diploma has lower skills in Italian and mathematics than second-year students in the same cycle. As for the difference between expected and achieved skills and knowledge (implicit dispersion), learning differences are confirmed both by gender (for girls it is 4.6 points lower than for boys) and, above all, by geographical area: in the South and Islands area, the share of implicit dispersion is close to 20 percent in Campania, while it is less than 2 percent in Trentino-Alto Adige/Südtirol.

In the 2021/22 academic year, the ratio of students enrolled in university courses to the target population aged 19 grew by 10 percentage points over the 2011/12 academic year to 56 percent, with the share of women stable at around 55 percent. About 30 percent of the enrolments are in science and technology-oriented courses (STEM disciplines). In 2020, the ratio of university graduates to the total population aged 20-29 was almost in line with the European average: bachelor's degrees accounted for 31.3 per thousand (34.3 for the EU27), up 7 points from 2013; master's degrees accounted for 21.1 per thousand in Italy and 22.1 per thousand in the EU27; finally, graduates (of any level) in STEM disciplines in 2020 accounted for 16.5 per thousand (1.9 points below the EU27 average).

In Italy, in 2021 the expatriation rate of 25-34-year-old university graduates, known as the “brain drain”, amounted to 9.5 per thousand among men and 6.7 per thousand among women. The 2019-2021 average migration rates of young university graduates to foreign countries suggest losses of skilled resources in all provinces, with higher values than the national average migration rate (-5.7 per thousand) in the North (particularly Aosta, Trieste, Gorizia, Udine, Verbania, Asti, and Sondrio, areas where border geographic location also plays a key role) and in the Islands (Palermo, Enna, and Oristano). Below-average outward migration rates are recorded in the metropolitan areas of Bologna, Firenze, and Roma (all around -3 per thousand). Migration rates of young university graduates among Italian provinces show a clear spatial direction: the gain in human capital is evident for all northern and central provinces. They record, indeed, largely positive migration rates to the detriment of the South and Islands area, where the loss of human capital due to internal mobility is net and persistent.

The mid-long-term demographic perspective is characterised by the low availability of human resources in the youngest age group of the population. This worsens the mentioned current problems of underutilisation of human capital with particular regard to the emigration of young graduates and NEETs. The empowerment of young people in terms of skills and knowledge will therefore be essential to reverse this trend and enable our country both to face the challenges of the ecological and digital transition and to activate innovation processes in the Public Administration and small and medium-sized enterprises.



Environmental critical issues and ecological transition

Concern about climate change is growing and widespread among our citizens. More than 70 percent of the population, most of whom are young people aged 20-24, list climate change or the increase in the greenhouse effect as the country's main concerns. The youngest, between the ages of 14 and 19, are the most sensitive to the issue of biodiversity defense.

Gender differences in environmental orientation can be seen in the adoption of sustainable behaviours, which are more prevalent among women, both when it comes to curbing water and energy waste and, especially, in purchasing behaviours.

These concerns are also fuelled by the frequency and intensity of extreme weather events, which increase the risk of disasters related to hydrogeological disruption and drought, with dramatic consequences in terms of human lives and economic damage. 2.2 percent of Italy's resident population lives in areas at high or very high landslide risk and 11.5 percent in areas at medium to high flood risk. In addition to the consequences of climate change, several unresolved environmental emergencies persist at the national and local levels. From pollution to water resource waste, land depletion and consumption, and atmospheric emissions, all jeopardise the three dimensions of water, land, and air.

The scarcity of non-renewable natural resources, among which water is one of the essential elements, poses a threat to the sustainability of social life and production processes. Reduced rainfall, accompanied by rising temperatures, has lowered the average annual availability of water resources, which in the 30 years between 1991 and 2020 contracted by 20 percent compared to the average of the 30 years between 1921 and 1950. Water availability reached its all-time low in 2022, nearly 50 percent less than in the 1991-2020 period. A persistent state of disruption of the water infrastructure adds to this serious problem. In 2020, 42.2 percent of the water fed into drinking water distribution networks did not reach end users. Such a considerable amount would be enough to meet the water needs of more than 44 million people for a year if we estimate consumption of 215 litres per inhabitant per day, which is equal to what is delivered daily in drinking water distribution networks.

In 2020, the most critical situations were found in the Centre and the South and Islands, mainly in areas included in the Apennine and insular hydrographical districts. Drought and water supply problems heavily affected the most recent agricultural year, causing the national economic accounts to show a reduction in production, value-added and employment in the agricultural sector. The decline in production volumes in 2022 affected all production sectors except fruit and floriculture.

Economic growth, from a sustainable development perspective, must also be mindful of the material depletion resulting from the complex of economic activities. This requires efficiency or, even better, circular economy measures aimed at progressively reducing resource exploitation per unit of output. This phenomenon is known as decoupling and involves the breaking of a fixed and constant relationship over time between economic growth and the use of non-



renewable natural resources. Beginning in 2008 and ending in 2013, there was a gradual decline in material consumption, both per capita and relative to GDP, resulting in more sustainable economic growth. This positive trend then stabilised in subsequent years, only to show a slight reversal in the most recent period (2019-2021).

Greenhouse gas emissions continued to decline in Europe: in 2019, before the setback due to pandemic-induced mobility restrictions and the contraction of manufacturing activities, they were 24 percent lower than in 1990. Italy was among the five EU-27 countries that made the largest contribution to this reduction, being responsible, along with Germany, Romania, and France, for two-thirds of the EU's net emissions reduction over the past 30 years.

As far as mobility is concerned, the difficulty of households in using public transport is confirmed in our country, which leads to a high degree of reliance on private motoring. Approximately one-third of households are dissatisfied with public transportation: in 2019, before the pandemic, 33.5 percent lamented difficult or even most difficult connections in the area where they lived; this is the worst figure in the past decade (29.5 percent in 2010). The share of those who habitually use private transportation to commute to work (74.2 percent) also remains high, in contrast to the low share of students who use only public transportation to travel to school or college (28.5 percent). In 2021, there were 39.8 million cars on the road in Italy, 673 per 1,000 inhabitants. Among EU countries, only Poland and Luxembourg exceed this per capita value, which in other major EU countries stands at much lower levels (583 in Germany, 571 in France, and 525 in Spain). Vehicle traffic strain on the environment, however, is not only determined by its size, but also by the composition of the vehicle fleet, and can be mitigated by low-emission vehicles, if in adequate numbers. In contrast to the motorisation rate, the index of pollutant potential associated with vehicles on the road, calculated on the basis of fuel type and emission class, shows a decreasing trend in recent years: between 2015 and 2021, it fell from 170 to 124 across Italy.

This positive trend affected all geographic areas and could also be observed in metropolitan and provincial capital cities. In the Italian cities, therefore, passenger cars on the road continued to increase, but vehicle fleet composition improved in terms of emissions pollutants. However, in the urban centres in the South and Islands, the polluting potential remained higher than average (146).

Concerning air quality, in the EU27, long-term exposure to PM_{2.5} particulate matter has shown a gradual but significant decrease between 2006 and 2020 (-39.5 percent), reaching 11.2 µg/m³ in 2020, a value just above the Interim Target set by the WHO. A similar trend, supported by pandemic response measures, was observed in Germany, France, and Spain, which achieved values even better than the EU27 average. In Italy, on the other hand, where exposure levels were even higher than 25 µg/m³ until 2011, improvement has been slower, reaching 15 µg/m³ in 2020.

The evolution described above largely explains the differences between Italy



and other major European countries in terms of PM_{2.5}-related mortality. Between 2005 and 2020, while in Germany, France, and Spain estimates of premature deaths from PM_{2.5} more than halved (dropping from 81 to 35, from 64 to 25, and from 82 to 38 deaths per 100,000 inhabitants, respectively), Italy's progress was much slower (from 124 to 88). Between 2021 and 2022, two of the ten most polluted cities in Europe were Italian: Cremona ranked fourth, and Padova ninth.

In 2021, progress in municipal separate waste collection slowed (64.0 percent, up one percentage point from 2020); in the three years before the pandemic, it was growing by an average of 2.9 and still failed to reach the national target of 65 percent set for 2012. Within the European context, in 2020, Italy achieved 51.4 percent of municipal waste recycling, exceeding the EU27 average (49.2 percent) and ranking among the top seven countries, yet below Germany (70.3 percent) and Austria (62.3 percent). On the waste disposal side, in 2021 the percentage of municipal waste sent to landfills continued to decrease (19 percent), two-thirds less than the 2004 value (59.8 percent), but with strong criticalities in the geographical breakdown.

The protection and enhancement of urban green areas is one of the solutions that help increase ecosystem biodiversity and, more generally, improve the sustainability of urban systems and their resilience to potential environmental adversities. Over the past 10 years, the amount of land for urban forestation has steadily increased (+22.2 percent). Urban and peri-urban forestation, that is, the creation of new-forested areas with natural development and a CO₂-absorbing function, is expanding in capital cities; it contributes to improving climate conditions by mitigating the “heat island” effect that is characteristic of cities. The total surface of urban green areas has been steadily increasing on average by 0.3 percent per year since 2011 (+0.6 percent in metropolitan capitals). However, differences in the availability of green areas are considerable: the largest proportion is found in north-eastern capitals (62.2 m² per inhabitant), and the lowest in the Islands (19.3).

Over the 2000-2020 period, Italy recorded the largest growth rate in forest areas (+4.0 percentage points) compared to the EU27 (+1.8 percentage points), followed by France (+3.6), Poland (+1.0) and Germany (+0.2). As far as marine protected areas are concerned, the level reached by Italy in 2022, amounting to 13.4 percent of the sea areas included in the national territory (compared to the EU27 average of 8.2 percent), ensured a good coverage, in line with the European Commission's request: from 2018 to 2020, our country tripled the number of protected waters (from 3.8 percent in 2018 to 7.2 in 2019 and 13.4 in 2020).

The increase in the use of renewable energy sources is considered a priority in the energy transition process. Between 2011 and 2021, the share of photovoltaics rose from 13.0 percent to 21.5 percent (+8.5) of the total energy produced from renewable sources. Second, comes wind power, which increased from 11.9 to 18.0 percent (+6.1) and third bioenergy (+3.3, from 13.1 to 16.4 percent). In contrast, hydro and geothermal renewables decreased by 16.2 percentage points (from 55.2 to 39 percent) and 1.7 points (from 6.8 to 5.1 percent), respectively.



The share of energy from renewable sources to total gross energy consumption has been growing steadily in the EU27 since 2004: from 9.6 percent in 2004 to 17.4 percent in 2014, to 21.8 percent in 2021, with a slight decline over 2020. In that year, this share was above 22 percent, reaching and even exceeding the target set by the European 2020 Strategy of 20 percent.

The Italian energy and environmental promotion system has contributed to the achievement of important goals through incentives. In the 2016-2021 period, more than 61 billion euros were granted to businesses, households, and other beneficiaries under the main incentive systems related to the production of electricity from “renewable and assimilated sources”.

Among the incentive instruments, the mechanism dedicated to solar photovoltaic systems, the so-called Conto Energia (CE), is the one that has attracted the most resources, peaking in 2017 at around 6.2 billion euros. In 2021, a total of 5.9 billion euros was paid out for the CE. Private companies (53,000) mainly located in Lombardia, Trentino-Alto Adige/Südtirol, Lazio, and Emilia-Romagna were the biggest beneficiaries in terms of amounts received, while consumer households accounted for the largest number (over 350,000).

The ecological transition, which has already started in Italy with a large set of incentives for the adoption of new technologies and more sustainable behaviours, needs to be strengthened by making further structural investments, such as those envisaged in the NRRP, and, above all, its impact at the economic and social level needs to be more thoroughly explored. In the medium term, the ecological transition process is bound to radically change energy sources and prices. Due to the unequal impact of changing energy prices, however, it cannot be taken for granted that the costs and benefits of this process will be equally distributed among different segments of the population. It is therefore important to look at the ecological transition from a broader perspective, also considering the effects produced at the social level, according to an approach called Just Transition, a more equitable ecological transition.

Fighting energy poverty is a key feature in the European Commission’s recent Just Transition strategies. In Italy, in 2022, 17.6 percent of households at risk of poverty admitted that they were unable to heat their homes adequately, and 10.1 percent claimed to have bill payment arrears. These values are high, although lower than the European average and those of France and Spain. Among the largest EU27 economies, only Germany showed a lower incidence for both indicators.

Households with excessively high energy expenses and those whose income, net of energy expenses, fell below the poverty line were 8.9 percent of Italy’s residents and 27.1 percent of those receiving the social bill bonus, designed to mitigate the social impact of rising energy commodity prices. In 2022, the average amount of social bonuses (related to both electricity and gas expenditures) was estimated at 992 euros per beneficiary household; over 90 percent of the total value of paid bonus expenditures was for the poorest households, those belonging to the first two-fifths of income. Households still in energy poverty after receiving the bonus dropped from 27.1 to 25.1.



The analysis of actions and measures for ecological transition taken by public institutions in provincial capitals and metropolitan cities highlights significant differences between geographic areas. In the 2019-2020 period, social or environmental reporting was more prevalent in southern capitals (nearly 34 percent). Green public procurement (GPP) procedures are more frequently adopted in the North (27.6 percent), outpacing the South and Islands by 9 percentage points. The lack of experienced and trained staff, particularly in the South (70.1 percent), stands out among the difficulties faced by public administrations of provincial capitals and metropolitan cities in developing green procurement.

The evolution of the production system between resilience and innovation

In recent years, the persistence of high uncertainty and the uninterrupted succession of health, economic, political and environmental crises put the Italian production system under great strain. As already described in the macroeconomic framework, the performance of the Italian economy in the 2021-2022 biennium was positive overall, and firms in industry and services contributed significantly to it. If on the one hand firms had shown a high degree of resilience to external shocks, on the other hand, some persistent structural features had reduced their growth potential in terms of value added, productivity, and investment.

In comparison with major European countries, Italy is characterised by a strong manufacturing vocation, with over a third of the added value of industry and market services produced in this sector. The manufacturing system has a significant export propensity, higher than that of other European partners in the small and medium-sized enterprise segments, but significantly lower in the large ones, which on average realise less than half of their turnover in international markets. With less than a 1 percent share of medium-large enterprises, the Italian production structure appears highly fragmented compared to the EU27 average. Compared to other major economies, Italian micro-enterprises are also less efficient, as shown by the level of apparent labour productivity (less than 28 thousand euros per employee).

Over the past decade, the Italian production system stood out among the major countries of the EU27 for poor dynamics in apparent labour productivity, accompanied by lower growth in labour costs and in general a weak propensity for innovation, both in quantitative and qualitative terms. For all manufacturing enterprises, the most exposed to international competition, there was an improvement in sales profitability during the reporting period; the intensity of fixed investment, after a period of significant growth from 2013 to 2018, showed a slowdown.

Concerning the composition of investments in the manufacturing industry, those with higher knowledge content, *i.e.* in the area of intellectual property products (including Research & Development - R&D), continue to suffer in Italy



compared to what can be observed in major EU27 economies, while the share of investment in machinery and equipment, which also includes ICT products, has declined over the 2011-2020 period.

In the context of demographic decline and the limited participation of women in the labour force, female entrepreneurship can play an important role in the economic development of the country. In 2020, there were 1.2 million women-owned businesses in Italy (27.6 percent of the total) and they were characterised by a prevalence of sole proprietorships (64.1 percent vs. compared to 58.8 of those run by men), a lower average number of employees than male-owned firms (only 2.9 percent have 10 or more employees, compared with 5.1 for male firms), and a lower than average age of enterprise. Such enterprises operate mostly in the services sector (68.9 compared to 51.1 percent of male enterprises), most markedly in health care and social assistance (12.4 and 5.5 percent), professional, scientific, and technical activities (20.1 and 17.2 percent) and accommodation and food services (9.2 and 6.4 percent).

Among export enterprises, the differences between female- and male-led enterprises are accentuated: out of a total of more than 110,000 enterprises, only 15 percent are run by women. Although they are on average larger in size than domestic market-oriented firms only, women-owned export firms are generally smaller than men-owned ones; only 5.5 percent have at least 50 employees (men-led ones account for 9.3 percent). As to the value of exports, the differences are particularly striking: women's businesses account for 8.1 percent of the value of exports, corresponding to just under 33 billion.

Technological and production characteristics concerning energy use make Italy one of the lowest energy-intensive countries in Europe, which has mitigated the negative effects of the sharp rise in energy prices. The most energy-intensive sectors within the Italian production system are transportation, manufacturing, and water supply. Istat's analyses based on input-output tables showed that the Italian sectors most exposed to increases in energy commodity prices are the following: coke and refineries; food and beverages; metallurgy and metal products; chemicals; rubber, plastics, and non-metallic minerals; machinery; and motor vehicles. These industries are the front door for shocks that then propagate to the entire production system.

Some business segments proved more resilient during crises and were more competitive in subsequent phases. In particular, Italian firms with a high degree of participation in global value chains performed better than other firms in terms of productivity, regardless of firm size. The analysis of enterprises by internationalisation profiles shows that in 2019 about nine thousand enterprises, 13 percent of total internationalised enterprises, belonged to foreign or Italian multinational groups, activating more than 70 percent of exports and about 80 percent of imports. Firms with more complex forms of internationalisation show higher labour productivity, even more so if they belong to multinational groups. In 2019, Italian enterprises also showed a good degree of diversification of origin markets for imported intermediate goods, which offset the damage from international trade disruptions during the pandemic emergency.



During 2020, the health emergency led to a decrease in the propensity for innovation in products and processes and a decline in innovative investment in industrial and service enterprises. Nevertheless, innovative firms continued to invest in R&D, the largest item among the expenditures that enterprises face to introduce innovations (50.6 percent of total expenditures) and whose percentage share increased by 13.7 points compared to 2018.

Innovation capacity positively affects both the productivity and profitability of firms. Economic performance is higher in innovating firms than in non-innovating firms, regardless of firm size. Large industrial firms, however, especially those active in R&D, are the ones showing the highest levels of productivity. Virtuous innovation behaviour goes hand in hand with a greater export propensity, which particularly benefits medium-sized R&D firms.

In Italy, public funding granted to the private sector under tax credits to promote investment in research and innovation has grown over time, from 0.03 percent of GDP in 2015 to 0.19 percent in 2019, while declining in 2020 (0.13 percent). Beneficiary enterprises were mostly in the manufacturing sector, with a higher incidence in exporting enterprises and multinationals. The share of beneficiary microenterprises was smaller and remained below 4 percent throughout the period. The share of beneficiary units in the South and Islands area was lower than in the North throughout the reporting period; yet the share of benefit obtained by Southern enterprises increased steadily between 2015 and 2020, from 9.6 percent to 24.9 percent.

Tax incentives for R&D investment had a positive effect on productivity growth also for innovative companies accessing the incentive for the first time; for less technological companies, this effect was even greater.

About the tourism sector, which is strongly recovering after the pandemic, it is interesting to analyse the attractiveness of the best-known destinations in Italy and abroad. Istat has identified 22 territorial “Tourist Brands”, *i.e.* “places corresponding to a typical tourist context, commonly recognizable and known in the collective imagination for the environmental, cultural, and landscape elements that distinguish it and make it unique as a destination and market segment”. In 2022, all the 22 Italian “Tourism Brands” recorded an increase in incoming flows compared to 2021, and more than half realised tourist volumes above or at least in line with pre-pandemic ones. Moreover, the “tourist brands” recorded accommodation rates and a number of tourist presences per inhabitant well above the national average.

In the years of the economic crisis and health emergency, the non-profit sector has played a central role in responding to the needs of citizens and responding promptly to social needs. The digital transition can represent a growth opportunity for these institutions, which operate in multiple areas of activity, although smaller in economic size and with a less complex organisational model than businesses. Most nonprofit institutions have already undertaken digitisation, mainly by acquiring basic infrastructure and investing in application systems to improve services to users and facilitate the pursuit of the institutional mission.



The economic growth of enterprises increasingly combines with the need to strengthen the sustainability of production processes, under conditions already complicated by increasing pressure on raw material costs. By 2022, nearly 60 percent of manufacturing enterprises and half of the units active in market services had taken measures to strengthen the sustainability of production processes. The propensity to invest in this direction increases with enterprise size and is highest in the North area. Using energy from renewable sources and improving energy efficiency emerge as the most relevant activities in planning future actions. Environmental sustainability, including the adoption of low-impact products and processes, is a central goal in enterprises performing innovation activities, particularly in the industrial and construction sectors and in larger units. In the 2018-2020 period, 40 percent of innovative enterprises introduced one or more eco-sustainable innovations. Among them, enterprises that have invested in innovative energy-efficient technologies show a productivity advantage, especially if they have invested in R&D.

The agricultural sector is still lagging in the adoption of sustainable innovations compared to other sectors of the Italian production system: enterprises making investments in innovation and adopting eco-friendly practices account for just 4.5 percent of the total. However, one can detect important signs of change taking place.

Younger and larger farms, in fact, are three times more likely to undertake innovation. The adoption of innovative practices among organic farms also leads to a significant improvement in their productivity and profitability conditions.

Overall, the Italian production system has shown a high degree of resilience to external shocks, enabling the country to recover pre-crisis production levels and regain its position in international markets. Although there are some peculiar characteristics, not only in terms of business structure but also business models that are not always geared toward increasing productivity, the most dynamic enterprises have shown that they can undertake virtuous models based on increased participation in international value chains, adoption of innovative strategies, and sustainability-oriented investment planning. This has enabled them to achieve wider benefits than other firms in terms of economic growth and profitability.

Year after year, Istat's Annual Report observes the country and portrays its transformations, achievements, new ferments, unresolved problems, and unanswered questions, with attention, participation, and respect, and with increasingly accurate tools. The data and statistics in this portrait are our knowledge contribution to citizens, civil society, institutions, and the daily governance of Italy.

They are tools that policymakers can use to support development processes and identify, where needed, difficulties and their causes. They are tools that serve to enhance, and sometimes even discover, the potential resources of the country - and I am referring, first and foremost, to young people - as we wanted to highlight in this edition of the Report.



Above all, they are tools needed to reduce inequalities of opportunity and skills, which penalise the youngest; inequalities of access to services, mainly affecting women and the oldest; income inequalities, resulting in lower welfare or poverty for thousands of households; and inequalities between geographical areas, which add up to all the others.

Many of these unfortunately entrenched inequalities have grown, and to best approach them it is necessary to strengthen our detection, analysis and knowledge systems to provide a robust and effective basis for analysis, and interventions to counter them.

Again, like every year, Istat - and I am referring to the community of women and men who enable this Institute to operate - does and will continue to do its part, providing the data and statistics needed to govern the complexity of the economy, society, land, and environment.

Thank you for your attention.



The 2023 Annual Report in Italian is available in **digital version** on the website www.istat.it

By scanning the QRcode you can directly access the full volume and its additional contents: infographics, dynamic graphs, interactive webmaps, summary and presentation of the President of Istat.

