

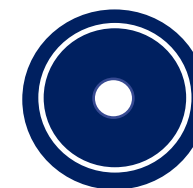
---

## Education

Skills and workforce in the Greek  
labor market

---

## SECTORS IN FOCUS



Alpha Bank Economic Research

July 2024

---

<b><u>Executive summary of the study</u></b>	<b>3</b>	<b><u>Education policies and reforms</u></b>	<b>23</b>
<b><u>The structure of the Greek educational system</u></b>	<b>4</b>	<ul style="list-style-type: none"> <li>▪ Governance and reform directions of the formal education system</li> <li>▪ Key points of the tertiary education regulatory framework</li> <li>▪ Recent reform on the establishment of non-State universities</li> </ul>	
<ul style="list-style-type: none"> <li>▪ The vital role of education to society and the economy</li> <li>▪ Classification of the education sector and ISCED alignment</li> <li>▪ Employment and occupational distribution in the education sector</li> <li>▪ A general overview of the formal education system in Greece</li> </ul>		<b><u>Skills, human capital and future needs of the labor market</u></b>	<b>27</b>
<b><u>Primary and secondary education in Greece</u></b>	<b>9</b>	<ul style="list-style-type: none"> <li>▪ Labor force overview and educational attainment in Greece</li> <li>▪ Skills mismatch between occupations and education</li> <li>▪ Drivers of future skills, qualifications and occupations</li> </ul>	
<ul style="list-style-type: none"> <li>▪ Primary education in public and private institutions</li> <li>▪ Lower secondary education in public and private institutions</li> <li>▪ General upper secondary education in public and private institutions</li> <li>▪ Vocational upper secondary education</li> </ul>		<b><u>Policy recommendations and SWOT analysis</u></b>	<b>31</b>
<b><u>The higher education system in Greece</u></b>	<b>14</b>	<ul style="list-style-type: none"> <li>▪ Policy recommendations for strengthening the education system</li> <li>▪ SWOT analysis of the education sector in Greece</li> </ul>	
<ul style="list-style-type: none"> <li>▪ Post-secondary non-tertiary education</li> <li>▪ Public universities within the Greek tertiary education</li> <li>▪ Breakdown of tertiary education students across fields and genders</li> <li>▪ Age composition of entrants, enrolled students, and graduates</li> </ul>		<b><u>References</u></b>	<b>34</b>
<b><u>Expenditure on education and sources of funding</u></b>	<b>19</b>	<b><u>Appendix: list of abbreviations</u></b>	<b>35</b>
<ul style="list-style-type: none"> <li>▪ Public and private educational expenditure</li> <li>▪ Impact and allocation of the Greek RRF on education and funding sources of public education</li> <li>▪ Financial performance of private educational institutions</li> </ul>			

*Education is pivotal for societal and economic growth, nurturing personal and social development, while equipping individuals with the essential skills to enter and succeed in the labor market. Greece's formal education system must tackle key challenges by a) aligning with market demands, b) prioritizing inclusivity, equity and access to education for all, c) fostering innovation, digital integration and environmental awareness in schools and d) addressing youth unemployment, e) strengthening funding for education and f) fostering entrepreneurship among youth.*

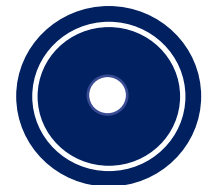
*To address these challenges, it is essential to strengthen the link between the formal education system and the labor market, cultivate a culture of innovation and research within education, encourage collaboration between academia and industry, improve digital literacy, bolster educational funding, encourage youth entrepreneurship, and implement active labor market policies.*

- **The primary purpose of formal education is to impart knowledge and skills in a systematic manner, leading to recognized qualifications or certifications.** The education sector covers formal education tiers aligned with different ISCED levels as well as diverse informal education activities.
- **The decreasing enrollment of students in elementary schools in Greece can be attributed to demographic challenges, some of which were exacerbated by the economic crisis.** This trend is reflected in the overall population decline and the consistent decrease in crude birth rates.
- **The disruptions caused by COVID-19 and subsequent school closures likely negatively impacted student engagement, resulting in a temporary decrease in high-school student enrollment, despite Greece maintaining a relatively low early-leavers ratio compared to other EU-27 countries.**
- **In 2022, 30.5% of the Greek working-age population 15-64 and 45% of those aged 25-34 were university graduates.** Male graduates are prominent in engineering, manufacturing, and construction, while females dominate in education, arts and social sciences.

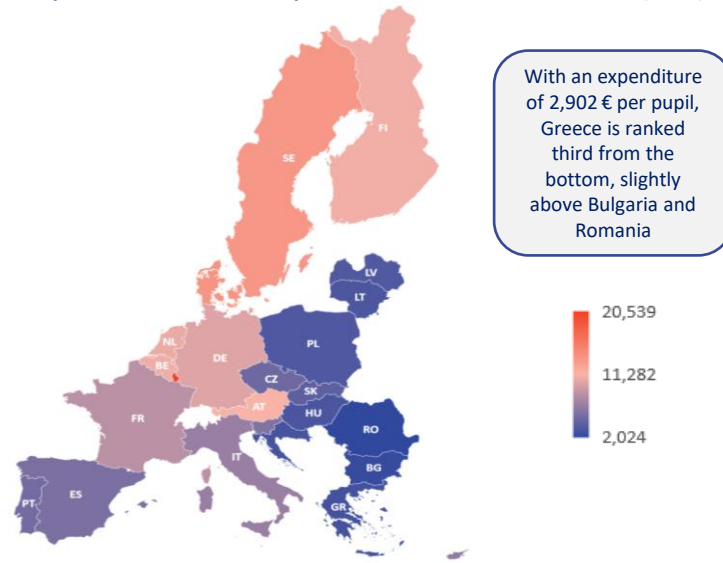
- **In Greece, education accounts for 3.6% of GDP in public spending,** positioning the country as the third lowest spender among EU-27 member states in terms of per student expenditure. This highlights significant hurdles in securing sufficient financial backing for the education system.
- **The age distribution of Bachelor's degree recipients shows that 62% graduate within the 20-24 age range, mirroring the proportion observed across the EU-27.** Additionally, a total of 86% of the graduates are 29 years old or younger.
- **However, one in four enrolled students is over 35, which is the highest percentage in this age cohort among EU-27 countries,** indicating a significant number of older students who take longer to graduate.
- **Greece allocated €8.9 billion to education (2019), with 74% coming from direct public expenditure and 26% from private sources.** Among public expenditure, 55% was allocated to primary and lower secondary, 18% to upper secondary and post-secondary, and 20% to tertiary education.
- **The Greek RRF allocates €2.3 billion towards the digital transformation of education,** encompassing educational reforms, strategies for excellence in universities and innovation, vocational education and training, as well as skill reforms, including the implementation of a new strategy for lifelong skilling.
- **The effectiveness of Greece's reform for non-State universities, set to commence in 2025, depends on rigorous regulations, and oversight mechanisms to ensure both quality and accessibility within private universities.**
- **In Greece, discrepancies between qualifications, skills, and job demands are apparent,** as shown by indicators such as overqualification, mismatch of fields of study, and students' underperformance in international assessments.
- **Greece grapples with the significant challenge of youth unemployment,** consistently ranking among the highest in the EU. Addressing it necessitates the implementation of active labor market policies such as internships, apprenticeships, VET programs, and fostering entrepreneurship among youth.

# The structure of the Greek educational system

---



Public expenditure on education per student in the EU-27 countries (2019)



Source: Eurostat – Education and training. Data processing Alpha Bank

### Formal and non-formal education types

The education sector encompasses a diverse range of knowledge and services spanning various levels and professions. It includes traditional school systems across different tiers and ages, but also lifelong learning programs. Within this domain, formal and non-formal education represent distinct learning experiences, characterized by differences in structure, purpose, and delivery methods. Formal education is highly structured, taking place in public or private schools and universities, and leading to recognized qualifications, degrees and certified diplomas. Non-formal education takes place in diverse settings, ranging from online learning platforms (e.g., Massive Open Online Courses – MOOCs) to learning centers for foreign languages and lifelong learning platforms ([European Youth Foundation, Council of Europe](#)). This report focuses on Greece's formal education system.

Low funding per student underscores Greece's challenges in ensuring the financial sufficiency of its education system.

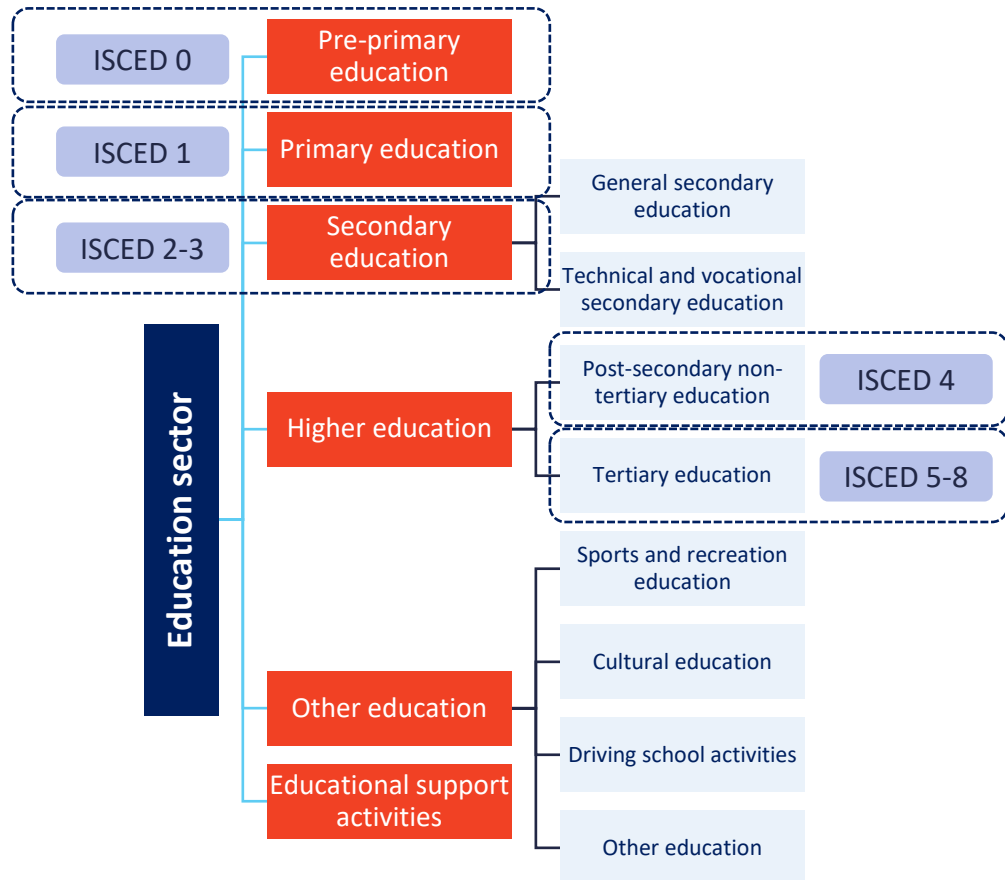
### The importance of education in society and the economy

Education, as a cornerstone of both society and the economy, plays a crucial role in personal and social development. By disseminating essential knowledge, skills, and values, education fosters self-awareness and fulfillment in individuals. Moreover, it equips individuals with the necessary tools to enter and succeed in the labor market. Research has shown that education is instrumental in societal progress, as it cultivates human virtues, promotes civic engagement, and advocates for social equity and justice (Spiel et al, 2018).

The positive correlation between returns on investment in education, human capital and economic growth has been extensively examined. Research indicates that education not only stimulates economic growth and raises living standards and well-being (Schultz 1961, Psacharopoulos 1994, Giambona et al. 2014) but also fosters innovation, technological advancements, and promotes the dissemination of knowledge crucial for adapting to the evolving landscape of information and technology (Obradovic 2009, Hanushek and Woessmann 2020). Furthermore, it has been evidenced that students' scores on science tests display a particularly strong correlation with economic growth (Barro, 2001).

As of 2022, Greece's education sector contributed 5.2% to the economy's Gross Value Added (GVA), marking a decrease from 5.8% in 2012. Additionally, public expenditure per student in Greece remained significantly below the EU-27 average, standing at €2,902 compared to €7,430 (2019). This places Greece as the third lowest spender among EU-27 member-states, notably trailing behind the leading country, Luxembourg, which allocates €20,539 per student. Such disparities highlight the substantial differences in educational funding across EU member-states, with Greece encountering challenges in ensuring sufficient financial backing for its education system (OECD 2020).

The NACE classification system of the education sector and its correspondence with ISCED 2011 levels



Source: Eurostat NACE Rev. 2 Classification, ISCED levels

The education sector covers formal education tiers aligned with different ISCED levels, as well as diverse informal education activities.

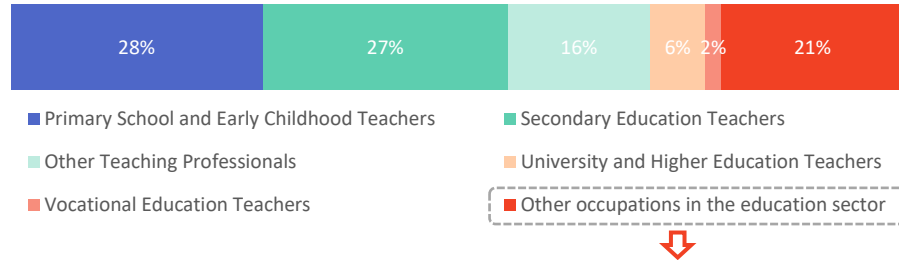
Divisions of the education sector

The educational sector, categorized by the NACE classification, encompasses: a) pre-primary education, b) primary education, c) secondary education, which is further divided into general and technical and vocational secondary education, d) higher education, which includes post-secondary non-tertiary and tertiary education, e) other education, encompassing diverse activities, such as sports and recreation education, cultural education, driving school activities, learning centers offering remedial courses, language instruction, computer training, religious instruction, education not definable by level, and so on, and f) educational support activities, including services like educational consulting, guidance counselling activities and organization of student exchange programs.

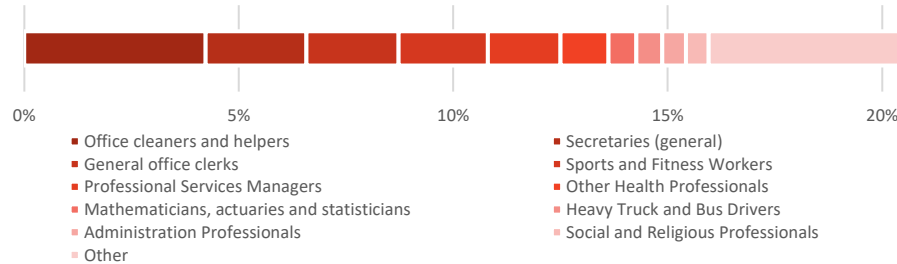
Alignment of education divisions with ISCED levels

The International Standard Classification of Education (ISCED), developed by UNESCO, is a framework used to classify and compare education systems. ISCED 2011 delineates nine education levels based on learning outcomes and duration of education. ISCED level 0 falls under pre-primary education, corresponding to early childhood programs. ISCED level 1 falls under primary education, focusing on foundational skills such as literacy and numeracy. ISCED levels 2 and 3 correspond to lower and upper secondary education respectively. ISCED level 4 denotes post-secondary non-tertiary education, including programs that provide education beyond secondary schooling but do not lead to a degree equivalent to higher education, such as vocational training. ISCED levels 5-8 signify tertiary education. Level 5 includes short-cycle tertiary education, while level 6 encompasses undergraduate university programs leading to a bachelor's degree. Finally, ISCED levels 7 and 8 correspond to a Master's or equivalent level and Doctoral or equivalent level, respectively.

Distribution of occupations (teachers and other professions) in the education sector according to ISCO 2022



Allocation of other non-teaching professions within the education sector (2022)



Source: Eurostat – Education and training

### Employment in the education sector

In Greece, the education sector saw significant growth in employment, with over 373 thousand individuals employed across various professions in 2022. This marked a 9% increase over the past decade and a notable 32% increase over the past two decades. Employment in the education sector accounted for 7.8% of the total workforce in the country, a rise from 6.4% in 2002. Looking within the education system itself, secondary education takes the top spot with 31% of the total employed. Primary education follows closely behind at 28%. Higher education comes in at 11%, with pre-primary education employing 9%. The remaining 22% falls under "other education," while educational support activities make up a very small portion (0.1%).

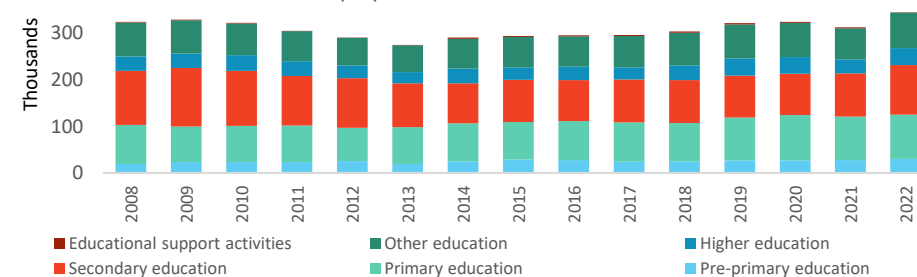
Employment within primary and secondary education institutions comprises over half of the total employment in the education sector.

### Occupations in the education sector

According to ISCO-08 (International Standard Classification of Occupations 2008), teaching professionals encompass: a) university and higher education teachers, b) vocational education teachers, c) secondary education teachers, d) primary school and early childhood teachers and e) other teaching professionals, such as education method specialists, special needs teachers, other language, music or arts teachers and IT trainers.

The breakdown of ISCO illustrates that teaching professionals across all levels constituted 79% of all occupations within the Greek education sector in 2022. Primary school and early childhood teachers represented 28% of the workforce, closely trailed by secondary education teachers at 27%. University and higher education instructors accounted for 6%, while vocational education teachers comprised 2%. Other teaching professionals made up 16% of the sector's workforce. Non-teaching professions, comprising 21% of total employment in the sector, included occupations such as office cleaners and helpers (4%), as well as secretaries, general office clerks, sports and fitness workers, and professional services managers, each representing 2%.

Employment in the education sector



Source: Eurostat – Education and training

### Main stages of the formal education system in Greece



#### Pre-primary and primary education

- Pre-primary schools (kindergarten)
- Primary schools (elementary)

#### Secondary education

- Lower secondary schools (gymnasium)
- Upper secondary schools (high school)

#### Tertiary education

- Universities (AEIs, former TEIs)
- Other institutions (military academies, ecclesiastical academies, etc.)

### Vocational education and training in Greece

Post-lower secondary vocational education and training (EPAs)

Upper secondary vocational education (EPALs)

Post-secondary non-tertiary vocational training (e.g., IEKs)

Primary, secondary, and higher education, general and vocational, in public and private institutions, form the core of the formal education system.

Primary education (ISCED 1), referred to as elementary education in Greece, typically serves students aged 6 to 12 across six grades. This educational stage is accessible through both public and private institutions, and attendance is mandatory. The academic calendar typically spans from mid-September to mid-June. Additionally, following the enactment of Article 33 of Law 4521/2018, pre-primary education (kindergarten) is obligatory for children aged 4 to 6.

Secondary education in Greece is structured into two phases: lower secondary education (ISCED 2), and upper secondary education (ISCED 3). Lower secondary education, known as Gymnasium (middle-school), is compulsory and spans three years, beginning at age 12. Upper secondary education is not obligatory; it starts at age 15 and extends over three years. Public and private schools offer general and vocational high school options. Upon graduation, students can choose to pursue higher education. The curriculum emphasizes core subjects like Greek language, mathematics, science, history, and social studies in both primary and secondary education ([Eurydice.eu](http://Eurydice.eu)). Additionally, there are vocational post-lower secondary institutions like public vocational apprenticeship schools (EPAs) under the Manpower Employment Organization (OAED), and upper secondary vocational high schools (EPALs).

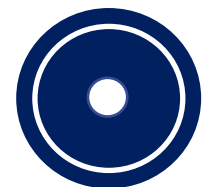
Higher education comprises post-secondary non-tertiary education (ISCED 4), either vocational or general, and tertiary education (ISCED 5-8). Tertiary education encompasses universities (AEIs), including the Athens School of Fine Arts, former technological institutions (TEIs), the School of Pedagogical and Technological Education (ASPETE), as well as other establishments like military academies, ecclesiastical academies, schools for dance and theater, tourism institutions, and training schools for petty officers and policemen. New legislation (4521/2018, 4559/2018, 4610/2019, and 4589/2019) required the consolidation of former TEIs into existing AEIs or the creation of new university entities.

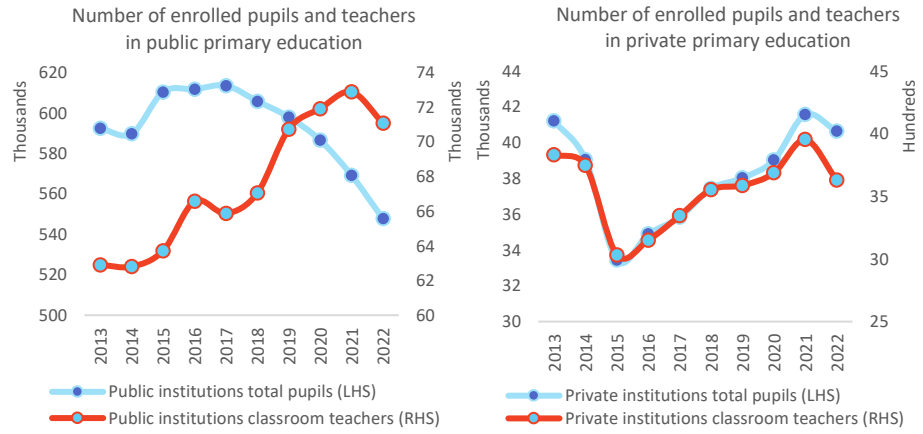
Source: [Eurydice.eu](http://Eurydice.eu)



# Primary and secondary education in Greece

---

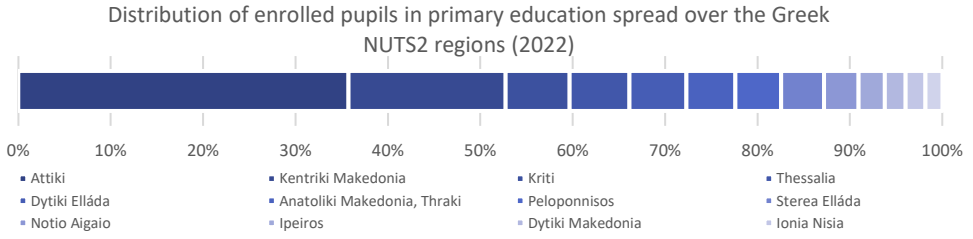




The declining enrollment numbers in elementary schools can be attributed to the demographic challenges and lower birth rates faced by Greece.

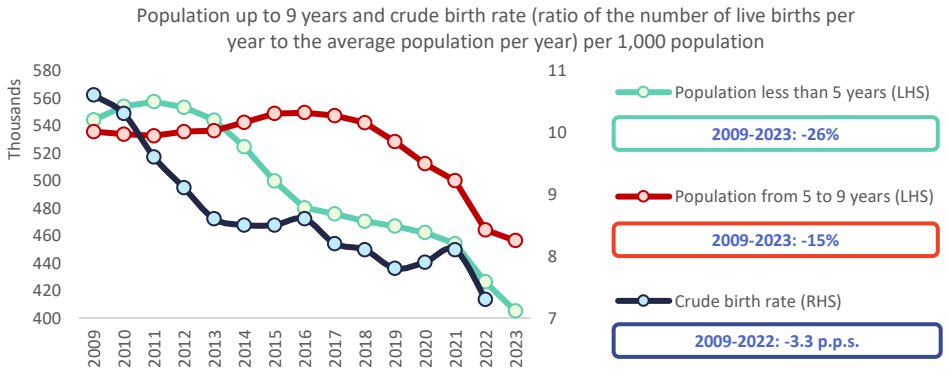
**Student enrollment in primary education institutions**

Primary school typically spans six grades, following government-set curricula in public and private institutions. In elementary education, the total number of students dropped from 649.2 thousand in 2017 to 588.4 thousand in 2022, with 36% residing in Attica, followed by Central Macedonia (17%), Crete (7%), and Thessalia (6.5%). Among students, 93% attended public schools, while 7% attended private schools. Between 2017 and 2022, there was a decrease of 65.7 thousand students enrolled in public schools, while private school enrollment saw a rise of 4.8 thousand students, partially mitigating the overall decline in student numbers. In 2022, the pupil to teacher ratio stood at 13% and 9% in public and private schools, respectively.



**Demographic challenge, crisis-driven brain drain and declining student numbers**

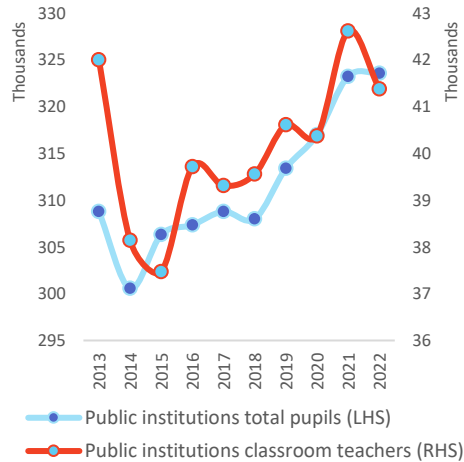
The decline in elementary school enrollment in Greece can be largely attributed to a combination of demographic challenges, with the economic crisis of 2009 serving as a primary catalyst. This crisis, coupled with subsequent factors such as brain drain, declining birth rates, and the departure of immigrant students during the crisis, created a ripple effect that ultimately contributed significantly to the decline observed in enrollments (IOBE 2018).



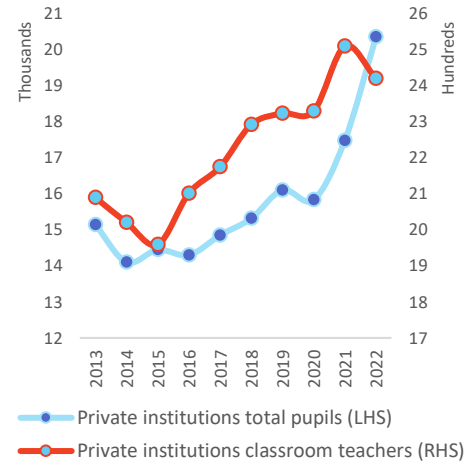
Evidence indicates a substantial decrease in Greece's overall population by 6% from 2009 to 2023. Moreover, there was a consistent decrease in the crude birth rate during this period, dropping from 10.6 births per 1,000 people in 2009 to 7.3 births per 1,000 people in 2022. Consequently, there was a notable 26% decline in the population of children under 5 years old, from 543.8 thousand in 2009 to 404.9 thousand in 2023. Similarly, the number of children aged 5 to 9 years, corresponding to elementary school age, decreased by 15%, from 535.3 thousand in 2009 to 456.2 thousand in 2023.

Source: Eurostat – Education and training, Population demographics

Number of enrolled pupils and teachers in public lower secondary education



Number of enrolled pupils and teachers in private lower secondary education



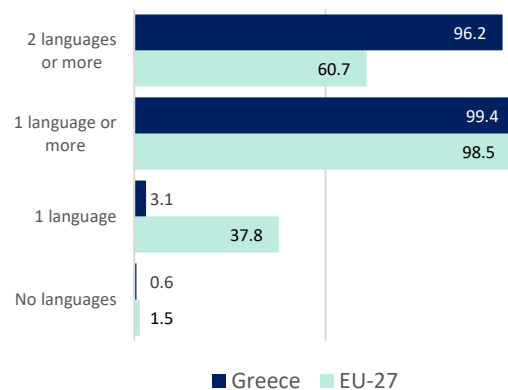
At the lower secondary educational level, Greece offers one of the highest average numbers of foreign languages taught per pupil across the EU-27.

### Student enrollment and teaching staff in public and private middle schools

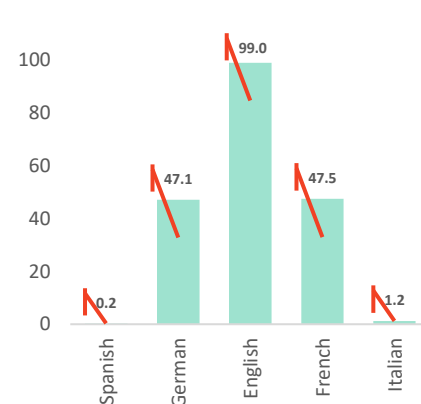
Enrollment in Gymnasium (middle school), the three-year lower secondary level of education, is automatic following primary school and is compulsory for students aged 12–15. Students must possess a Primary Education School Certificate or its international equivalent, with no entry exams required. There are various types of Gymnasiums in Greece aside from the standard middle school, including special middle schools, evening middle schools, ecclesiastical, experimental, music, art and model middle schools. The middle school curriculum covers modern Greek language and literature, ancient Greek language, mathematics, physics, chemistry, biology, geology, geography, history, religious studies, home economics, and more.

Gymnasium enrollment has increased by 6% between 2013 and 2022, with over 343 thousand students enrolled, 94% of whom attend public schools and 6% private institutions. The number of students in private middle schools has risen by 34% during this period, reaching 20.3 thousand. Correspondingly, the number of teachers in private middle schools has increased by 16% from 2013 to 2022, totaling 2.4 thousand, while in public schools, there were 43.8 thousand teachers, resulting in a teacher-to-pupil ratio of 13%.

Percentage (%) of pupils in lower secondary education by number of languages studied (2022)



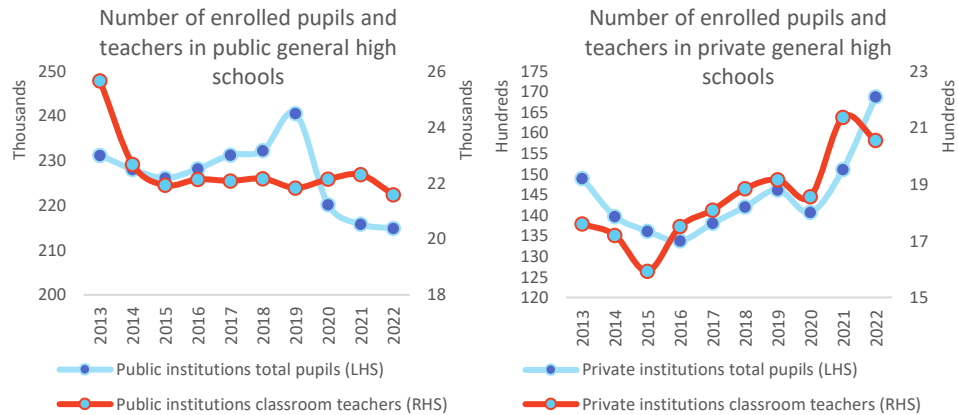
Percentage (%) of pupils by language studied in the Greek lower secondary education (2022)



Source: Eurostat – Education and training

### Languages taught in lower secondary education

Greece boasts one of the highest average numbers of foreign languages taught per pupil at the lower secondary educational level. Specifically, nearly all middle school students (99.4% in 2022) receive instruction in at least one foreign language, and 96.2% are taught at least two foreign languages, compared to 98.5% and 60.7% respectively in the EU-27. This is followed mainly by French (47.5%) and German (47.1%), with fewer students studying Italian (1.2%) and Spanish (0.2%).



Source: Eurostat – Education and training

### Student enrollment in general high-school

In 2022, Greek high school enrollment exceeded 231,000 students, with 214,800 in public schools and 16,900 in private schools. This marked a 9% decline in high school enrollment from 2019 to 2022, with a decrease of 23,470 students. The impact of COVID-19 and subsequent school closures may have affected student engagement, especially among those without adequate material infrastructure for online learning (OECD 2021). Additionally, enrollment in private high schools slightly declined in 2020 but increased by 2,800 students in 2022, partially offsetting the decline of over 5,300 students observed in public schools that same year.

Despite the decline in student enrollment during the COVID-19 school closures, Greece maintained a relatively low early leavers ratio (3.7% in 2023), which has consistently been below the EU-27 average since 2012. The term “early leavers” refers to individuals aged 18-24 who have completed at most the lower secondary education and are not pursuing further education or training. In Greece, this ratio was previously above 10% until 2013, indicating that one in ten young people had completed only their compulsory lower secondary education.

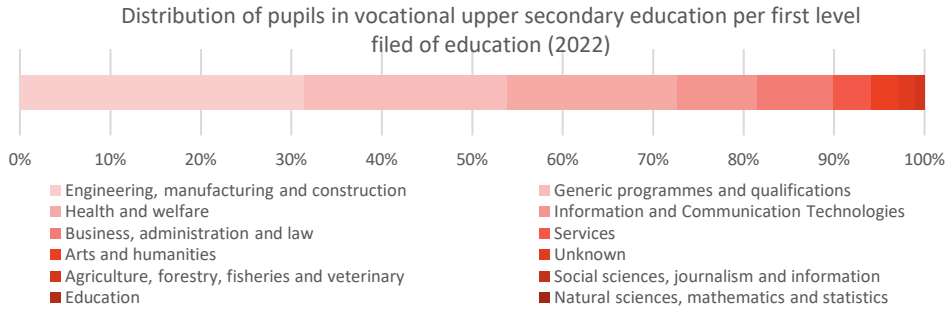
Despite the observed reduction in student enrollment during the COVID-19 school closures, Greece maintains a relatively low early leavers ratio.

### Upper secondary education

Upper secondary school, also known as Lyceum or High School, offers non-compulsory education over a duration of 3 years. Eligible students up to 20 years old must have a Lower Secondary Education School Certificate to enroll. Upon successful completion of the third grade, graduates of the Lyceum are conferred with a lyceum certificate. The grading system utilized in the Lyceum operates on a 20-point scale. Various types of high schools exist, among others including General Lyceum, Vocational Lyceum, Special Lyceum, Music Lyceum, Model Lyceum, Art Lyceum, Experimental Lyceum, General Lyceum of Cross-Cultural Education, Evening General or Vocational Lyceum, and Ecclesiastical General Lyceum. Lyceums aim to prepare students for higher education, whether at universities or vocational schools, as well as for the workforce.

### General high schools

General High Schools provide a comprehensive curriculum spanning various subjects such as languages, mathematics, sciences, humanities, foreign languages, computer science, and arts. In the second grade, students select between two study tracks known as Orientation Groups. By the third grade, students choose one of three Orientation Groups known as Streams, which comprise: a) Humanities studies, centered on ancient Greek, history, and Latin; b) Science and health studies, emphasizing mathematics (for science studies), biology (for health studies), physics, and chemistry; c) Economics and computer studies, encompassing mathematics, computer science, and economics (Ministry of Education, Religious Affairs and Sports). After graduating, students can take Pan-Hellenic Examinations in their chosen Orientation Group subjects, along with Modern Greek Language and Literature. These exams evaluate students' knowledge and determine their eligibility for Greek university admission.



Source: Eurostat – Education and training

### Vocational high schools (EPALs) and the Hellenic Qualifications System (HQF)

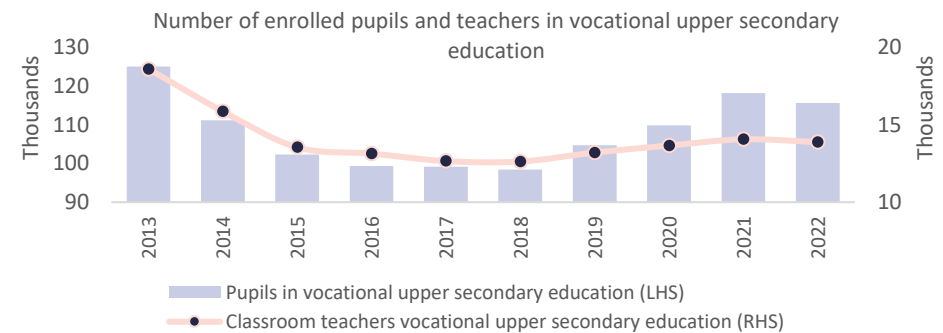
Vocational high schools, known as EPALs, were regulated with Law 3475/2006 and are part of the formal education and training system, designed in relation to the European Credit System for Vocational Education and Training (ECVET). Their primary focus is the development of practical skills, equipping students with both theoretical knowledge and sought-after competencies in a specific field to prepare them for employment in targeted sectors or professions. Open to graduates of lower secondary education and those who have completed the first year of general high school, EPAL offers a one-year "apprenticeship class" for further skill enhancement and additional qualifications. Upon successful completion of practical training and certification exams, their diploma is elevated to level 5 according to the Hellenic Qualifications System (HQF), a national framework categorizing qualifications based on learning outcomes. This system, consisting of eight levels, mirrors Greece's formal education and training structure, evaluating proficiency in diverse domains (EOPPEP, CEDEFOP 2022).

EPALs differ from EPAS or SEK. EPAS schools, administered by the Vocational Training Schools of the Public Employment Service (DYPA/OAED), follow a Dual VET system, integrating theoretical classroom teaching with practical workplace training and are classified as level 4 in the HQF. SEKs resemble EPAS but are overseen by the Ministry of Education.

### Vocational high schools aim at the development of practical, in-demand skills.

Vocational schools serve as the primary providers of vocational upper secondary education, spanning three years and commencing at age 15. In 2020, Greece had 455 public institutes, alongside just 4 private ones (ELSTAT), some acknowledged as model vocational schools. Enrollment in vocational high schools fell to 116,000 in 2022 from almost 125,000 in 2013. The teacher-to-student ratio in these schools was 12% in 2022, translating to one teacher for every eight students.

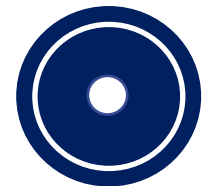
Vocational high school students engage in both general education subjects, such as mathematics, physics, Greek language, history, gymnastics, ICT, religion, foreign language, and civil education, alongside vocational studies aligned with the International Standard Classification of Education: Fields of Education and Training (ISCED-F 2013) framework. These vocational fields encompass various sectors, with 38% focusing on engineering, manufacturing, and construction, 22% on health and welfare, 11% on information and communication technologies, 10% on business, administration, and law, 5% on services (including personal services, travel, tourism, leisure, hair and beauty services, and transport services), 4% on arts and humanities, and 1% on agriculture, forestry and fisheries (primarily crop and livestock production) (2022).

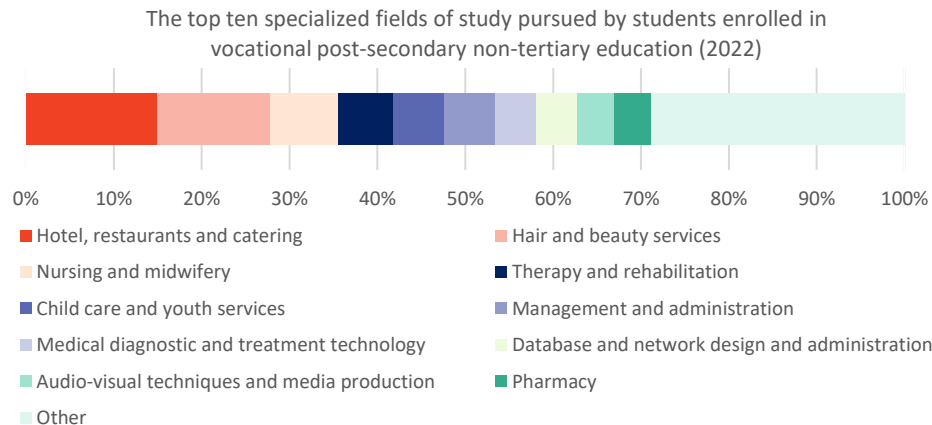
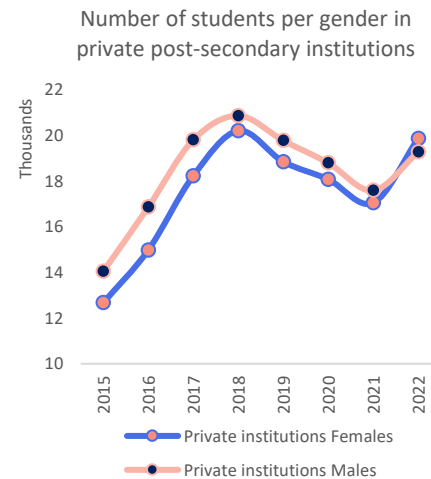
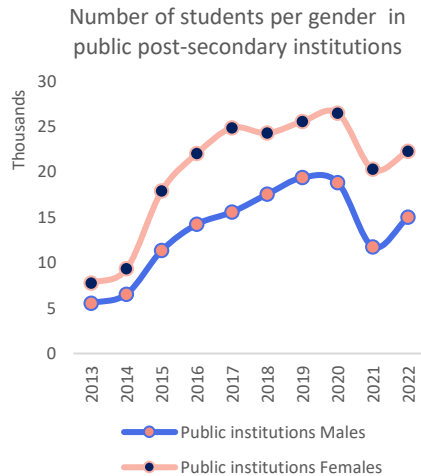


Source: Eurostat – Education and training

# The higher education system in Greece

---





\*Short-cycle tertiary education (ISCED level 5), primarily vocational and aimed at equipping students for the job market, is not integrated into the education systems of Greece, Bulgaria, Estonia, Lithuania, Romania, or Finland ([ec.europa.eu](http://ec.europa.eu)).

Source: Eurostat – Education and training

Post-secondary education is encompassed within higher education, yet remains separate from tertiary education.

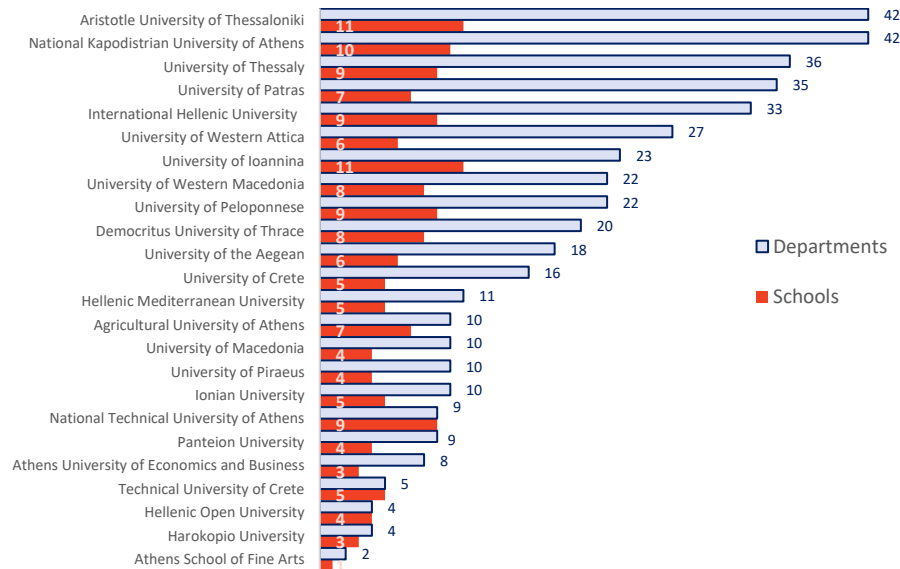
In Greece, the post-secondary non-tertiary education system (ISCED 4\*) is part of the formal education system, providing vocational training beyond upper secondary school, without conferring academic degrees like universities. It serves as an avenue for skill development, catering to students seeking practical qualifications for employment in various sectors. Both public and private post-secondary institutions attract similar numbers of students. In 2022, private institutions enrolled 39.1 thousand students, surpassing the 37.3 thousand in public institutions. Notably, there's a significant gender gap, especially in public institutions, with female students outnumbering males by over 7 thousand.

### Vocational training institutes

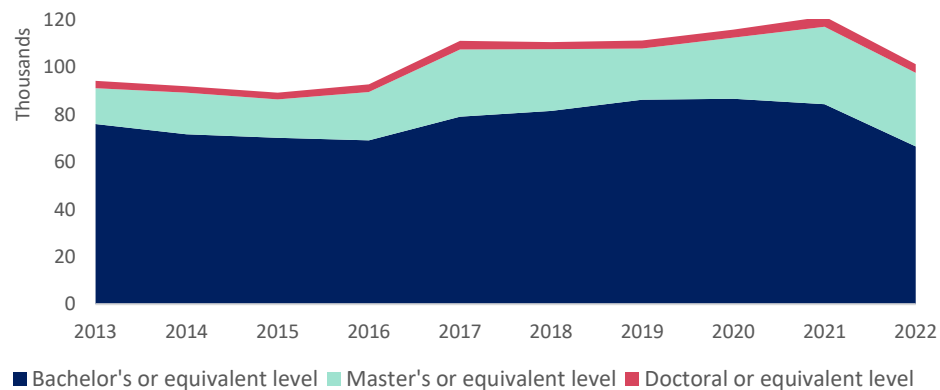
In Greece, vocational training institutes (like IEKs) dominate post-secondary non-tertiary education, offering specialized, hands-on technical education across various fields. Typically lasting up to 2 years, they provide industry-focused training leading to recognized vocational qualifications. Out of the selected fields, 36% of the enrolled students in 2022 had chosen personal services, such as hotel, restaurants and caring studies (15%) or hair and beauty services (13%). Three out of ten students picked studies related to health and welfare, such as nursing and midwifery (8%), childcare and youth services (6%) or therapy and rehabilitation (6%), while 9% undertook lessons in business and administration.

It is important to distinguish colleges from vocational training institutes. Colleges in Greece are private entities which also typically fall under the post-secondary non-tertiary education (ISCED 4). Although they award certificates and degrees like IEKs, these are not considered equivalent to university degrees. Meanwhile, vocational institutes focus on shorter, job-specific training leading to national certificates. Colleges often provide broader academic programs, potentially with international recognition through collaborations with foreign universities.

Greek public Universities, sorted by Department number (at the end of the academic year 2020/2021)



New entrants of students in tertiary education by degree level



Source: ELSTAT, Eurostat – Education and training

The influx of new students into tertiary education is increasing, especially in terms of the demand for Master's degrees among female students.

### Greek public universities

The tertiary education sector in Greece comprises a wide array of public institutions offering diverse undergraduate and postgraduate programs (ISCED levels 5-8). There are 24 higher education institutions categorized as universities, including the Aristotle University of Thessaloniki and the National and Kapodistrian University of Athens (NKUA), as well as two technical universities: the National Technical University of Athens and the Technical University of Crete.

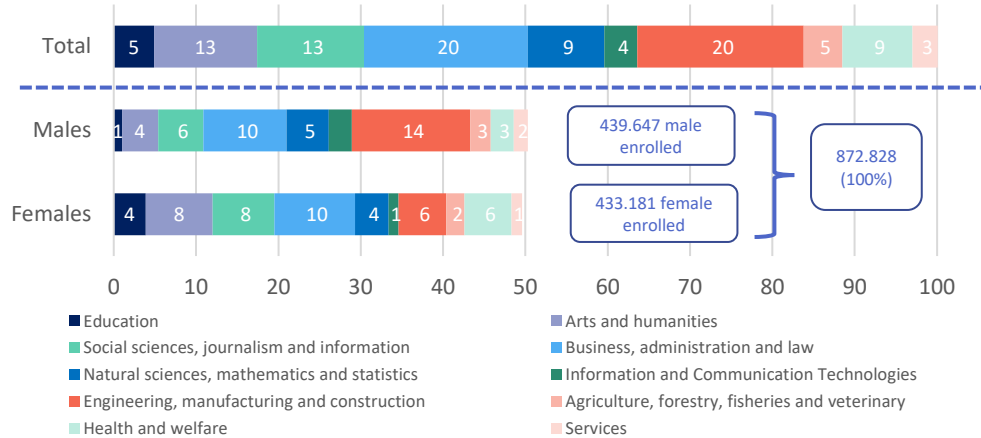
The former Technological Educational Institutes (TEIs) have merged with existing tertiary institutions (e.g., the TEI of Epirus merged with the University of Ioannina), or they have formed new entities such as the University of Western Attica, which was established through the merger of the TEIs of Athens and Piraeus. The list of universities also includes institutions like the Hellenic Open University (HOU) and the International Hellenic University, which merged with three former TEIs (the TEI of Thessaloniki, the TEI of Central Macedonia, and the TEI of Eastern Macedonia and Thrace). Tertiary education also encompasses institutions that are not classified as universities, such as the ASPETE school - which is set to be integrated into NKUA- along with Merchant Marine Academies, Military Academies, Art Schools, and Ecclesiastical Academies.

### New entrants in the tertiary education

In 2022, the number of new students entering tertiary education decreased by 17% compared to 2021, a decline partially linked to the lockdown effects of the pandemic. At the Bachelor's level, there were 66,555 new students, with men comprising 45% and women 55% of this group. At the Master's level, there was a significant increase of 104% in new entrants from 2013 to 2022, highlighted by a 129% rise in the number of women. PhD enrollments in 2022 surpassed 3,500, with men representing 51% and women 49% of the total.



Distribution (%) of male and female enrolled students in the tertiary education (levels 5-8) per large category of educational field (2022)



Male graduates are prominent in engineering, manufacturing and ICT, while females dominate in education, arts and social sciences.

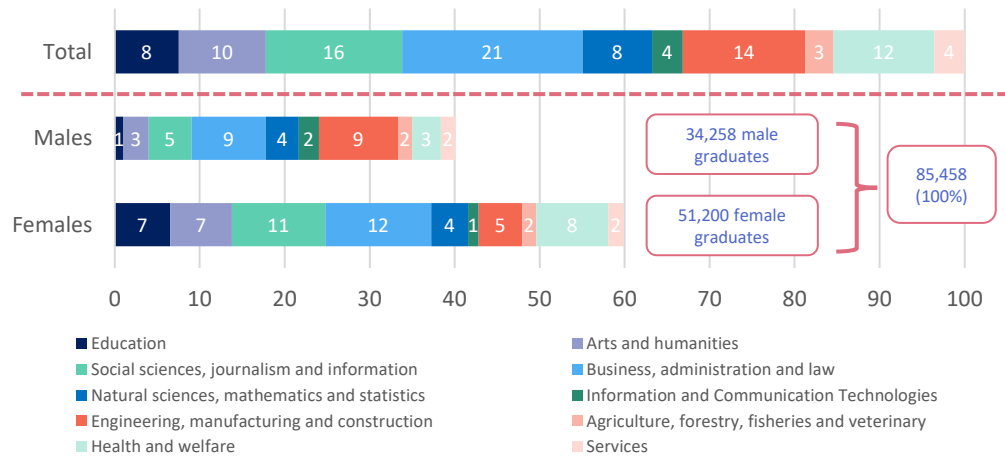
Enrolled students in the Greek tertiary education

In 2022, Greek universities\* totaled 872,828 enrolled students across all ages and regardless of their year of entrance, up by 33% since 2013. Among the 737,000 Bachelor's students, males accounted for 52% and females for 48%. In Master's programs, females took the lead at 62%, marking a remarkable 131% surge from 2013 to 2022, compared to a 93% increase in male enrollment. Doctoral programs had a male-female split of 52% to 48% among the 32,900 enrolled students. In terms of Bachelor's students, one-third were based in Attica, 19% in Central Macedonia, 10% in Western Greece, and 7% in Crete.

Graduates and fields of specialization

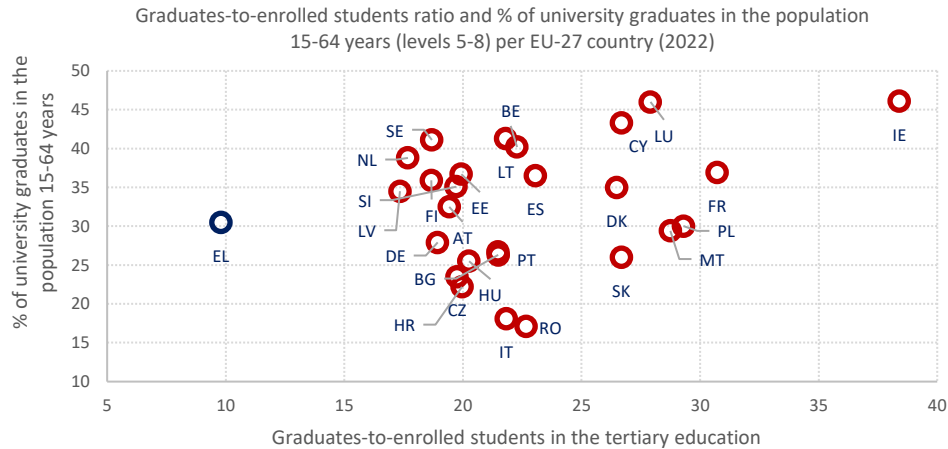
In 2022, the total number of graduate students across tertiary education levels in Greece amounted to 85,458. Among them, bachelor graduates totalled 57.7 thousand, with 42% men and 58% women. At the master's level, there were 25.6 thousand graduates, with 36% being men and 64% women. Field-wise across all tertiary levels, 21% specialized in business, administration, and law, 16% in social sciences (which include economics, political sciences, sociology and psychology), journalism, and information, 14% in engineering, manufacturing and construction, 12% in health and welfare, 10% in arts and humanities, and 8% in natural sciences, mathematics and statistics, as well as in education.

Distribution (%) of male and female tertiary education graduates (levels 5-8) per large category of educational field (2022)



Gender distribution varies within specific fields. Men strongly outnumber women in ICT studies, as well as in engineering, manufacturing and construction (65% men to 35% women in both fields in 2022). Conversely, women dominate men in education (86% women to 14% men), arts and humanities, health and welfare (71% women to 29% men in both fields), but also in social sciences, journalism, and information (69% women to 31% men), and in business administration and law (59% women to 41% men).

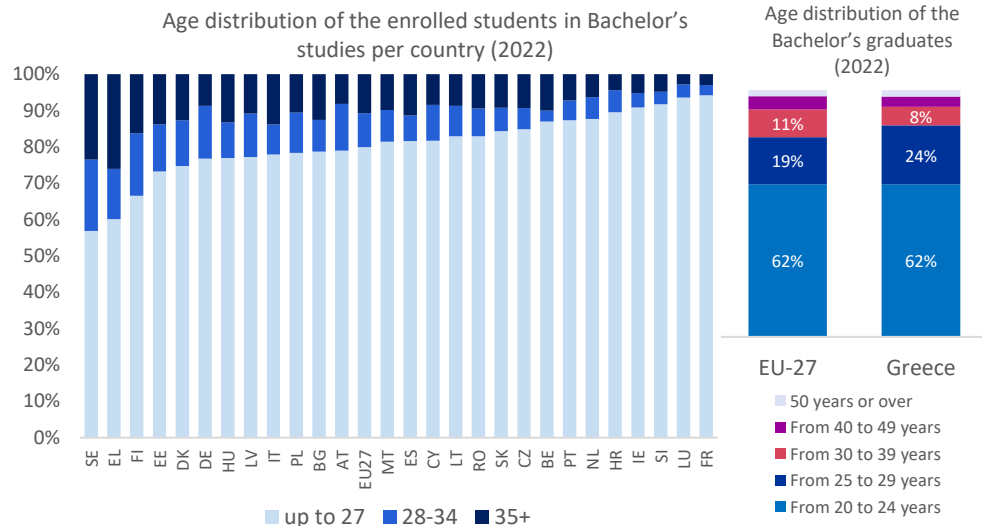
\*All universities and tertiary education schools, hereafter referred to as universities for quick reference  
Source: Eurostat – Education and training



Although 86% of Bachelor students graduate by age 29, a quarter of enrolled students are over 35 years, significantly prolonging their graduation.

### Age structure of university entrants and graduates

Regarding the age of new entrants into Greek universities at the Bachelor's level in 2022, a substantial majority (84%) are aged 17-19 years, while 7% fall within the 20-24 age bracket. The age distribution of Bachelor's recipients shows that 62% graduated within the 20-24 age range, mirroring the proportion observed across the EU-27. Notably, the percentage of females graduating on time (68%) surpasses that of males (53%). Furthermore, one-quarter of students graduate between 25 and 29 years old, with the remaining 14% completing their degrees at ages exceeding 30 years.



Despite the fact that 86% of the graduates are up to 29 years old, a percentage over the EU-27 average of 81% for 2022, and the fact that the ratio of university graduates relative to the working age population 15-64 is also similar to the EU-27 average (30% in 2022), there are still discrepancies in the number of older students, commonly known as "eternal" students, who remain enrolled without ever graduating or graduating after a prolonged period of study.

### Age structure of enrolled students and prolonged university enrollment

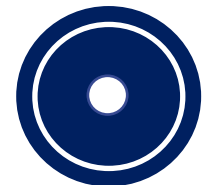
In 2022, 60% of enrolled Bachelor's students in Greek universities were aged up to 27 years old, leaving 40% over the age of 28. Notably, there was another 26% of enrolled students, nearly 192 thousand, who were over 35 years old, marking the highest percentage of this age cohort among EU-27 countries. This high proportion of older students who remain officially enrolled without graduating contributes to Greece having the lowest ratio of graduates to enrolled students in the EU, at 7.8% for Bachelor's level (19% in the EU-27), and at 9.8% for all levels of tertiary education (EU-27: 24%) in 2022. This is due to various reasons, including academic difficulties, adverse circumstances, health issues, changes in preferences, studying abroad, entering the job market, and others (HAHE 2023).

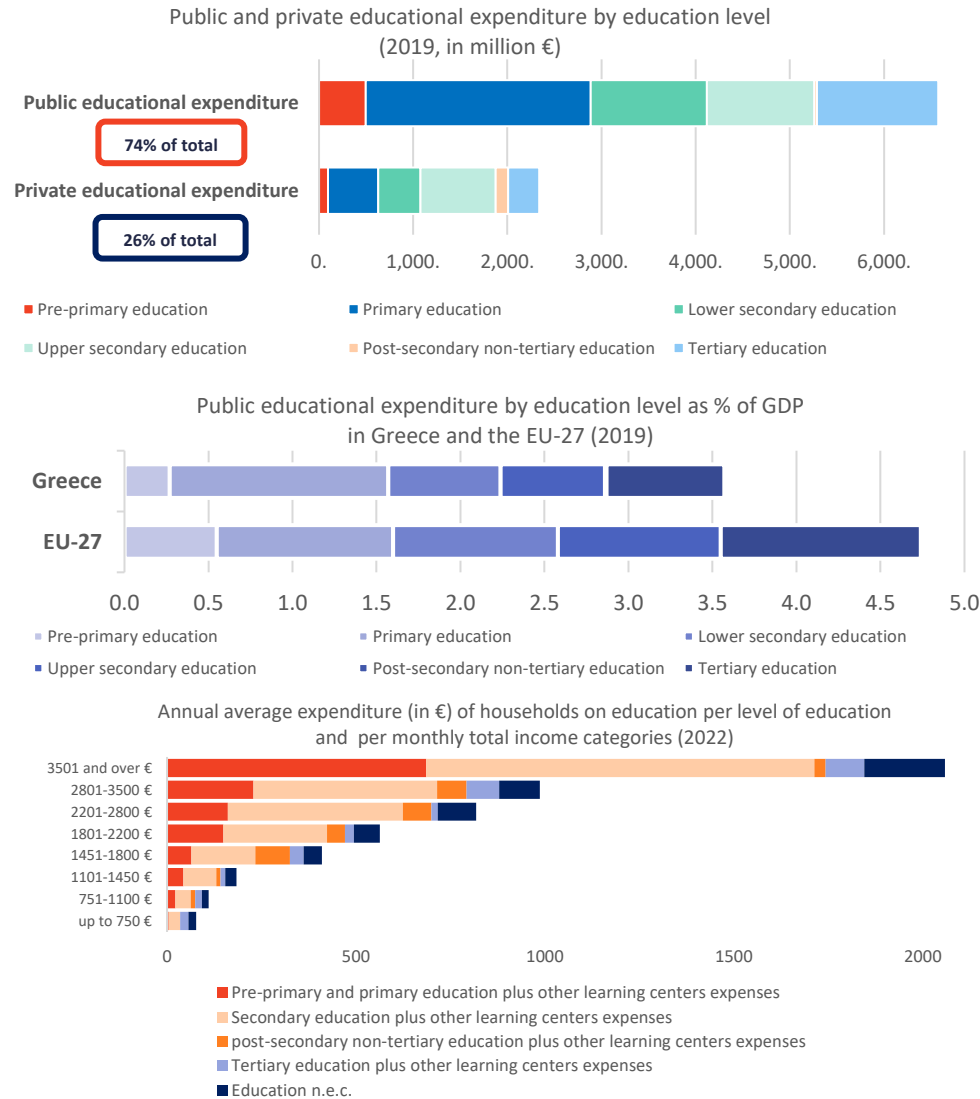
\* HAHE (2022) defines as "active" the students who are enrolled in up to the n+2 year for a 4-year Bachelor program, or up to the n+3 year for 5-year and 6-year programs.

Source: Eurostat – Education and training

# Expenditure on education and sources of funding

---





Source: Eurostat – Educational expenditure, ELSTAT-EOP

Greece ranks second to last in education spending as a percentage of GDP and last in the EU for average, per student expenditure on tertiary education.

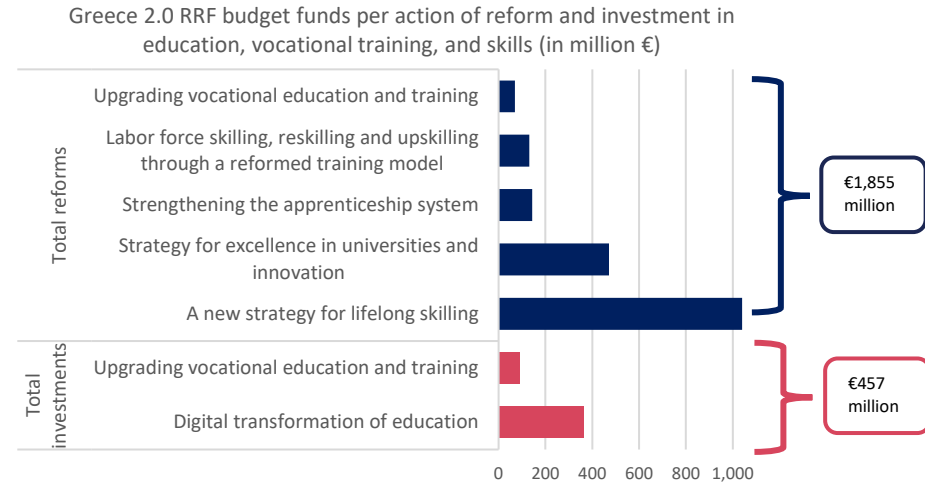
Public and private educational expenditure

In 2019, Greece allocated €8.9 billion to education, with 74% (€6.6 billion) sourced from direct public expenditure and 26% (€2.3 billion) from private funds. Public spending on education amounted to 3.6% of GDP, ranking Greece second to last among EU-27 countries, which averaged 4.7% (2019). The €6.6 billion public expenditure for education was distributed as follows: 8% to pre-primary education, 36% to primary, 36% to secondary (19% to lower and 17% to upper secondary), and 20% to tertiary education. Conversely, the allocation of the €2.3 billion of private expenditure gave more weight to primary (27%), and secondary education (53%), followed by post-secondary education (6%), with 14% directed towards tertiary education.

In terms of the average (per student) expenditure, this stood at €3,056 for pre-primary, €3,790 for primary and lower secondary, €2,754 for upper secondary and post-secondary, and only €1,780 for tertiary education. Greece's low average expenditure for tertiary education positions it at the bottom among EU countries in terms of public average spending on university education.

Average household expenses for educational purposes

Households are significant contributors to private education expenditure. ELSTAT's Household Budget Surveys for education expenses encompass private school fees, remedial courses from learning centers, foreign language tuition, private lessons, fees for school excursions, and Master's program fees. In 2022, the annual household expenditure on education amounted to €657, reflecting a 13% increase since 2019 but a 15% decrease from 2012 to 2019. Moreover, the wealthier households tend to allocate a greater amount to education expenses compared to lower-income households, indicating a positive correlation between income level and educational expenditure.



Source: Ministry of Finance. (2021). *Greece 2.0. National Recovery and Resilience Plan*

### Education and skills in Greece 2.0 RRF

Greece 2.0, part of the European Recovery and Resilience Facility, allocates €5.2 billion (16.6% of its grants) to the third pillar of employment, skills, and social cohesion. Within this, €2.3 billion is for education, vocational training, and skills. This includes investments (€457 million) and reforms (€1,855 million). Specifically, €365 million is for investments in the digital transformation of education, encompassing content, infrastructure, and services, while €471 million is earmarked for educational reforms and strategies for excellence in universities and innovation. Moreover, €1,476 million is allocated to reforms and investments in skills development and vocational education and training (VET). These include VET investments, such as the provision of laboratory equipment (€92 million), upgrading VET reforms (€70 million), and other reforms that cover the implementation of a new lifelong skilling strategy (€1,040 million), the strengthening of the apprenticeship system (€143 million), and the enhancement of the labor force through a reformed training model (€131 million).

Education, vocational training, and skills of Greece 2.0 prioritize the enhancement of human capital and increased employment opportunities.

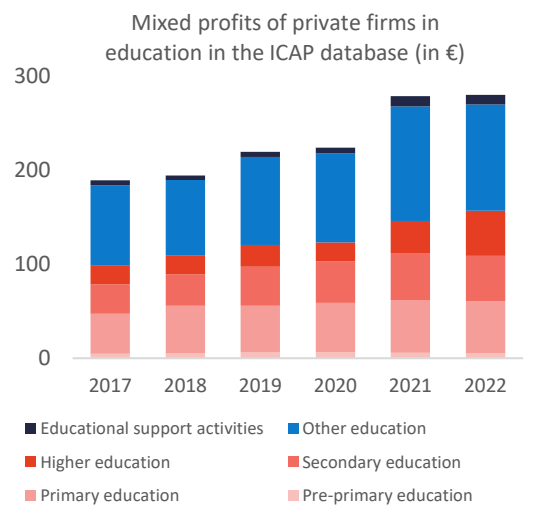
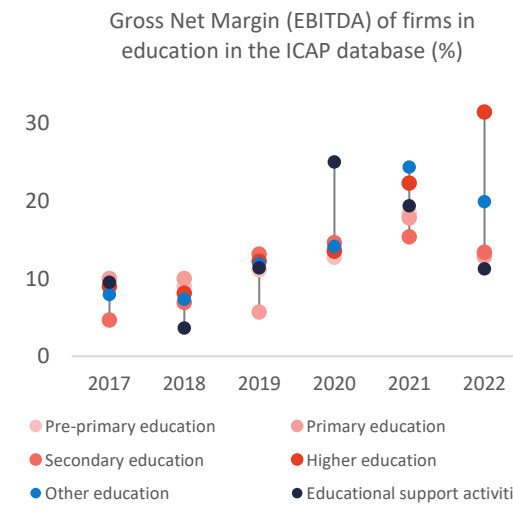
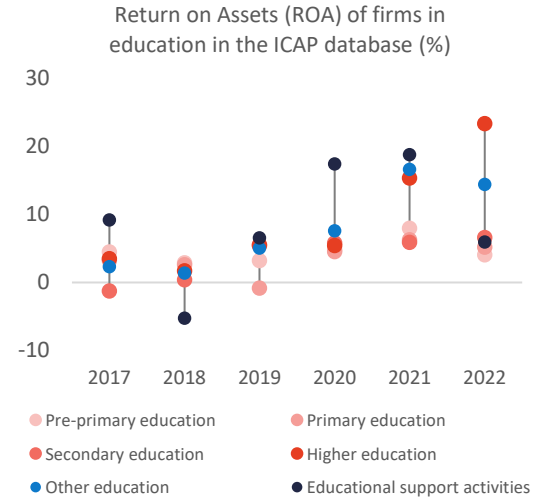
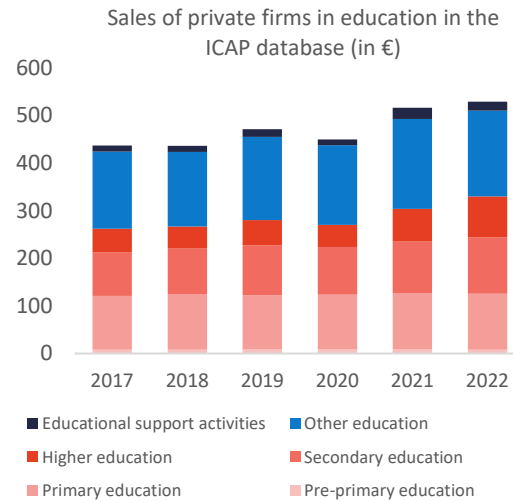
### Breakdown of funding sources of the public education in Greece

The primary funding source for public education across all levels is the Central Government through the state budget, divided into the ordinary budget, covering operational expenses, and the Public Investments Budget, which finances the construction of new schools and equipment provision. Public investments draw funding from national and EU sources, such as the National Strategic Reference Framework (ESPA). Government expenditure supports education also via small intergovernmental transfers to municipalities, covering expenses such as pupil transportation and school repairs. Other funding sources include property sales revenue, donations, inheritances, etc. ([Eurydice.eu](http://Eurydice.eu), IOBE, 2013).

### Funding of the tertiary education and the role of ELKE in Universities

Tertiary education secures funding from sources like investment grants, donations, inheritances, and tuition fees for Master's and doctoral programs. State budget allocation for tertiary education follows an 80-20 split: 80% based on objective criteria like enrollment and program costs, and 20% based on achievement and quality metrics such as graduate-to-entrant ratio, feedback on education quality, and research evaluation, with emphasis on academic staff funded by the European Research Council ([Eurydice.eu](http://Eurydice.eu), [Minedu.gov.gr](http://Minedu.gov.gr)).

Special Accounts for Research Funds (ELKE) play a crucial role in financing research activities at Greek universities. ELKE are special accounts of universities typically financed through a combination of sources and managed by the Ministry of Education and Religious Affairs. They distribute research funding to universities based on various criteria, such as the number of researchers, the university's research proposals and others. Universities' funding via the ELKE supports various research activities, including salaries for research staff, research projects and equipment, postgraduate studies and PhD programs.



**Market concentration in the private education sector is relatively low.**

ICAP's financial database, Dataprisma, utilizes data from around 500 private institutions, covering diverse education levels, except tertiary institutions as there are no private entities. Among these institutions, 74% are under "Other education," while 18% are in pre-primary, primary, and secondary education, 4% in post-secondary education, and another 4% in educational support activities.

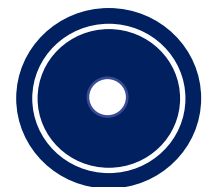
In 2022, total revenues across the five subsectors rose slightly to €529.6 million, marking a 2% increase from 2021 and a notable 21% increase from 2017, amidst the Greek economic crisis. Institutions that belong to "Other education" generated 1/3 of the total sales in 2022, while the private elementary schools, gymnasiums and high-schools 46% and post-secondary institutions another 16%. Mixed profits saw a modest 1% rise to €279.9 million in 2022 compared to 2021, reflecting a 48% increase from 2017. The EBITDA margin slightly decreased in most sectors in 2022 compared to 2021, except for post-secondary institutes, which had the highest ratio at 31.5%, followed by other education institutes at 19.9%. Additionally, higher education institutes showed increased ROA (Return-On-Assets) of 23% and ROE (Return-On-Equity) of 113% in 2022, indicating efficient asset utilization and effective profit generation from shareholder equity. ROA of primary and secondary education institutes stood at 5.2% and 6.6% respectively in 2022.

Market concentration in the private education sector is relatively low. The top 10 companies contributed 1/3 of total revenues in 2022, while the top 20 companies represented nearly half of them, indicating that no single company or small group of companies dominate the market share significantly. Major institutions include Metropolitan College, IEK AKMI, IEK DELTA, Ellinogermaniki Agogi, Kosteas - Geitonas School, Moraitis School, and Doukas School. Notably, non-profit institutions, like the American College of Greece (DEREE), the Hellenic-American Educational Foundation or the American Farm School are not included in the ICAP database.

Source: ICAP Dataprisma company database

# Education policies and reforms

---



### The European Education Area framework

The European Education Area (EEA) is a framework introduced by the European Commission in 2017 to promote collaboration and coherence in education systems across Europe. It aims to create a unified space for education characterized by high quality, inclusivity, and mobility, transcending national borders within the EU.

This involves meeting seven specific targets. By 2025, the goals include ensuring 60% of recent Vocational Education and Training (VET) graduates engage in work-based learning, and at least 47% of individuals aged 25-64 participate in learning activities annually. By 2030, objectives consist of reducing low-achievers in various subjects among 15-year-olds, decreasing early school leaving rates, increasing higher education qualifications among 25-34-year-olds to 45%, and ensuring 95% participation in early childhood education for children aged 3 to compulsory primary education age (EC 2021).

### The highly centralized governance structure of Greece's educational system

Greece's educational system operates under centralized control, overseen by the Ministry of Education, Religious Affairs, and Sports. This ministry manages public schools, sets national curriculum standards, administers university entrance exams, appoints educators, handles educational finances, and supervises related services. Educational strategies and objectives are established through parliamentary laws and government regulations.

The Ministry develops and implements policies and initiatives, with the Institute for Educational Policy serving as a key advisory body for primary, secondary, and post-secondary education. Regional education directorates ensure strategy implementation and adherence to directives, while primary and secondary education directorates oversee schools within their jurisdictions. Additionally, various other ministries, including labor, social affairs, culture, sports, interior, tourism, health, and national defense, contribute to diverse educational matters.

The educational regulatory framework in Greece prioritizes the quality of education by addressing a broad spectrum of educational issues.

### Upgrading the school, strengthening VET, increasing digitalization in education

Recent reforms address critical issues, such as structural changes, curriculum development, and teacher evaluations. Under Law 4823/2021, Greece implemented a new curriculum framework aimed at modernizing and enhancing the quality of education, focusing on interdisciplinary learning, critical thinking skills, and digital literacy. School curricula are revised, and schools are granted greater autonomy in organizing teaching, enhancing transparency, and involving teaching staff in decision-making roles. The evaluation of school units since 2022 includes the assessment of teaching staff to enhance public education quality. In 2022, Greece initiated its version of the OECD's Programme for International Student Assessment (PISA) to improve the education system, alongside the introduction of skills workshops for essential 21st-century skills.

Moreover, despite various reform efforts, vocational education and training (VET) still faces challenges in attracting students. These efforts have involved implementing common quality standards for apprenticeships and VET curricula, creating new governance structures, and expanding apprenticeship programs. However, there remains a need to further align VET with labor market trends, such as updating occupational profiles and optimizing the national mechanism for assessing labor market demands (OECD, 2020).

Post-COVID-19, with the imperative for digital infrastructure due to school closures and the launch of the RRF for digital education transformation, there has been a concerted effort to integrate technology into education. This includes supplying digital resources, fostering digital literacy, and enacting laws like 4961/2022 (Emerging ICTs) and 4727/2020 (Digital Governance) to enhance the integration of technology in teaching and learning processes, improve digital literacy among students and educators, and ensure data security and privacy.



### European Strategy for Universities

The European Union has adopted a comprehensive strategy for tertiary education systems among its member states, known as the European Strategy for Universities, established in 2022. This strategy aims to elevate the quality, competitiveness, and international presence of universities throughout Europe. It focuses on advancing excellence in teaching and research, fostering innovation and entrepreneurship, promoting collaboration and mobility among universities, and bolstering universities' role in addressing societal challenges. This strategy is embedded within various EU initiatives, such as the European Higher Education Area (EHEA) and the European Research Area (ERA) (EC 2022).

### Key points of the tertiary education governance in Greece

Universities in Greece operate within a legal framework outlined in the Greek Constitution and relevant legislation. According to Article 16 of the Greek Constitution, higher education is exclusively provided by institutions that are legal entities of public law. While universities have autonomy, they are supervised by government bodies, primarily the Ministry of Education, Religious Affairs, and Sports, to ensure compliance with regulations and standards. The state provides funding to universities through the government's budget. Universities are responsible for managing these funds effectively, including budgeting, spending, and financial reporting. Universities have the authority to design and implement academic programs, set admission criteria, hire academic staff, and award degrees. However, these activities must align with national regulations and standards. Regulatory bodies, such as the Hellenic Authority for Higher Education, play a role in monitoring and ensuring the quality of education and research within universities. This includes assessing academic programs, evaluating faculty performance, and accrediting institutions. Universities admit students based on criteria set by law, including performance in national examinations (panhellenic exams) and specific admission requirements for each academic department or faculty.

Universities in Greece operate within a legal framework outlined in the Greek Constitution and relevant legislation.

### Upgrading of the quality of studies, and transparency of operations

Law 4957/2022 aims to advance higher education operations by fostering competitive and contemporary academic programs through a diverse range of studies across various faculties. The Law also introduces a Greek 'Erasmus' program for international exchange, emphasizing stronger links between academia and the job market. Additionally, it tackles prolonged student enrollment with measures, including deregistration for students exceeding the designated study duration, starting from the academic year 2024-2025.

### Protection of universities premises

In 2019, Law 4623 terminated the long-standing institution of university asylum, initially established by Law 1268/1982 and further protected by Law 3549/2007. University asylum prohibited law enforcement agencies from entering university grounds and was originally instituted as a symbolic gesture to strengthen democracy in the aftermath of the dictatorship, safeguard academic freedom, and promote the free exchange of ideas (Kakarelidis, G., & Georgiadou, N.). In 2021, Law 4777 was enacted to enhance security and safeguard university premises, allowing for police intervention if required ([capital.gr](https://www.capital.gr), [kathimerini.gr](https://www.kathimerini.gr)).

### Evaluation and accreditation of universities

The evaluation of Greek universities was initially introduced by Law 3374/2005. However, this evaluation process was replaced by accreditation procedures under Law 4009/2011. Accreditation involves an external evaluation conducted by the Hellenic Authority for Higher Education, established as an independent administrative body by Law 4653/2020. This process involves external evaluation based on predetermined quantitative and qualitative criteria and indicators aligned with quality assurance standards in the European Higher Education Area.

### Other key issues addressed in the reform for non-State universities

The reform for private universities underscores the reinforcement of higher education institutions and the improvement of their international competitiveness through various measures. Firstly, it aims to enhance their autonomy and economic independence, streamlining governance processes for greater efficiency. Moreover, the promotion of digital transformation and optimal asset utilization are key strategies to bolster institutions. In terms of funding, significant changes are proposed, with 70% to be allocated based on factors like student enrollment and program duration, while 30% will hinge on efficiency and quality metrics, diverging from the current 80-20 split.

To foster internationalization, the reform advocates for offering first-cycle programs in foreign languages to foreign students, encouraging global engagement. Additionally, financial support to initiatives like "Study in Greece" aspire to boost the international visibility of Greek universities. Finally, the reform also focuses on upgrading specific universities, such as Democritus University of Thrace and Hellenic Open University, through expansions, mergers, and modernization efforts.

### Criticism and examples of other countries

The success of Greece's reform hinges on its implementation. Effective regulations and oversight are essential to ensure quality and accessibility in private universities. Adequate public funding for state universities also remains critical. Examples from other countries offer insights; for instance, the UK features a blend of public and private universities, with some private institutions highly esteemed. In contrast, Germany prioritizes a robust public university system, with private universities playing a minor role. However, concerns persist regarding private universities' role and efficiency, including potential disparities in quality compared to public institutions, increased tuition fees limiting student access, and the risk of a more market-driven tertiary education system neglecting academic exploration.

Despite facing criticism, the reform strives to enhance the efficiency and international competitiveness of Greek higher education institutions.

### The reform for non-State universities in Greece

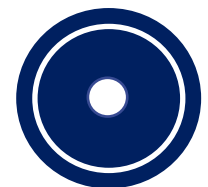
The reform for private universities, implemented by the Law 5094/2024, is scheduled to take effect in 2025, along with proposed changes to Article 16 of the Greek Constitution. This reform pertains to the establishment and operation of non-State, non-profit university legal entities in Greece, affiliated with public or private higher education institutions accredited in an EU member state or another country. These entities will be solely dedicated to offering education across various academic cycles and will be directly linked to their parent institutions through equity participation or academic cooperation agreements. Diplomas awarded by these entities will be recognized by the Greek state.

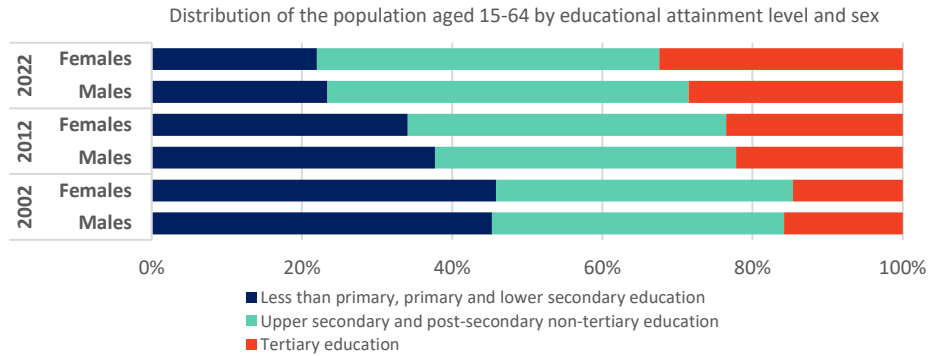
To obtain operating licenses, university legal entities must meet specific criteria, including having at least three schools with at least one faculty in each school certified in the originating country. Top-ranking universities worldwide may qualify with one school and one faculty. They must also ensure an adequate number of teaching, administrative, and technical staff, as well as independent facilities, with additional secondary facilities in the same regional unit.

Enrollment in the first cycle of studies is open to Greek or foreign citizens holding leaving certificates from general or vocational upper secondary schools, as well as participants in Greek university entrance exams meeting the minimum entrance requirements. It also extends to holders of leaving certificates from recognized foreign secondary education schools in Greece, international baccalaureate certificate holders, and foreign citizens with leaving certificates from their country's upper secondary schools. Additionally, holders of recognized diplomas from the first cycle of studies at recognized Greek and foreign higher education institutions are eligible for enrollment in the second and third cycles of studies.

# Skills, human capital and future needs of the labor market

---

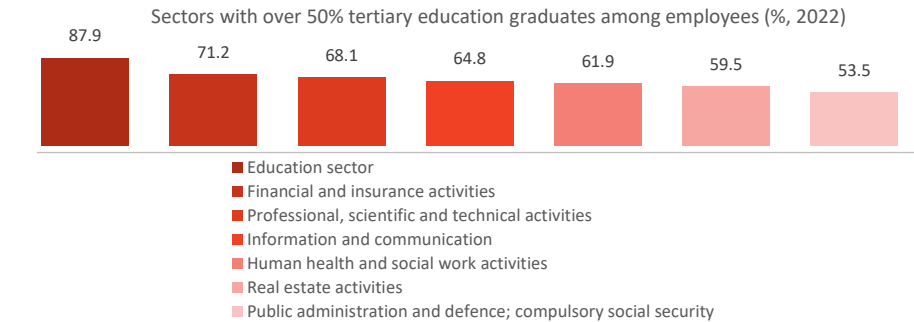




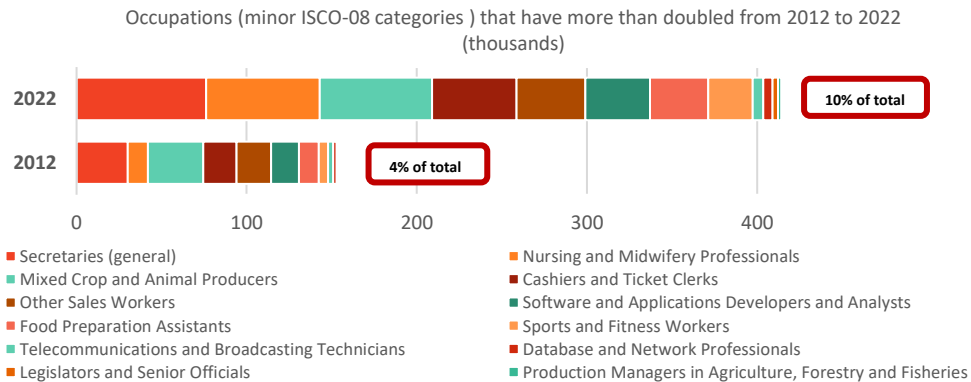
In 2022, 30.5% of the Greek working-age population 15-64 and 45% of those aged 25-34 were university graduates.

### Educational attainment of the workforce

As of 2022, Greece's labor force aged 15-64 reflects a distribution similar to that of the EU-27 concerning educational attainment. There has been a steady rise in the proportion of individuals with upper secondary and tertiary education in Greece. In 2022, 22.7% of the labor force (24.9% in the EU-27) held at most a Gymnasium diploma, down from 45.6% a decade earlier. Meanwhile, 46.8% had attained upper secondary and post-secondary education, up from 39.2% in 2002. Notably, from 2002 to 2022, the percentage of university graduates among the working-age population (15-64) doubled to 30.5% (same as that of the EU-27). Among those aged 25-34, the tertiary graduate ratio reached 45% in 2022, higher than the EU-27 average of 42%.



Additionally, in 2022, 70% of university graduates secured employment within 3 years after graduation (48% in 2012), although the respective ratio for those with up to post-secondary education was much lower (47%). Within various economic sectors, those witnessing an over 50% proportion of tertiary graduates in 2022 include education, financial and insurance activities, professional, scientific, and technical activities, ICT sector, human health and social work activities, real estate activities, and public administration.

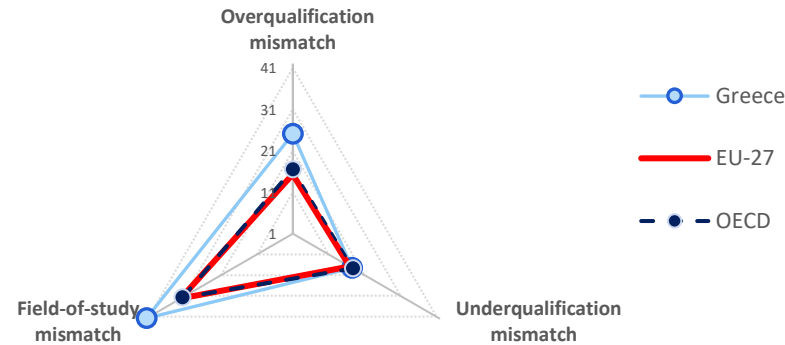


### Top in-demand occupations

Between 2012 and 2022, twelve occupations doubled in number, rising from 4% to 10% of the labor force. Among them are ICT occupations, such as software and applications developers and analysts (133% increase), telecommunications and broadcasting technicians (110% increase), and database and network professionals (178% rise). Additionally, professions within the food chain, (mixed crop and animal producers, food preparation assistants, production managers in agriculture, forestry, and fisheries) have also seen substantial growth.

Source: Eurostat, LFS, ELSTAT

Qualification or field-of-study mismatch with job requirements (% , 2019).



Source: OECD, skills database

### Education, skills and economic growth

Education is essential for economic growth as it cultivates knowledge and skills, shaping human capital, a vital driver of development. Human capital directly boosts economic growth as it acts as a factor of production and influences innovation capacity. Additionally, human capital indirectly impacts economic growth by affecting factors like physical capital, technology transfer, and management practices (Leoni, 2023; Valero, 2021).

The OECD classifies skills and knowledge into distinct categories, encompassing arts and humanities, attitudes, business processes, cognitive skills, communication skills, digital skills, law and public safety knowledge, physical skills, production and technology knowledge, scientific knowledge, social skills, resource management, medicine knowledge, and training and education. According to OECD skills dataset (2019), Greece exhibits a surplus of skills across many categories. Notably, production and technology knowledge, business processes, resource management, and physical skills demonstrate the highest surplus. On the contrary, training and education, law and public safety knowledge, and cognitive skills, exhibit significant skills shortages.

Education-occupation mismatch can have implications for individual career satisfaction, productivity, and overall labor market efficiency.

### Position of Greece in international skills metrics

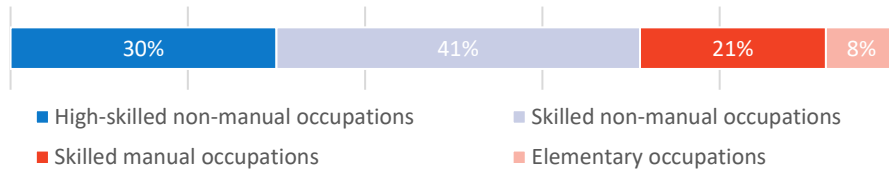
PISA, the OECD's Programme for International Student Assessment, evaluates the knowledge and skills of 15-year-old students in math, reading, and science every three years. It aims to offer globally comparable data on student performance to aid countries in enhancing their education systems and policies. Greece's performance in PISA, participating in 2000 for the first time, has consistently fallen below the OECD average, indicating that the education system is not preparing at the fullest the students for real-world challenges and future achievements. The most recent assessment in 2022 indicates a decline in proficiency among Greek students in mathematics, reading, and science compared to the 2018 assessment, placing the country in a historic low average performance in three subjects (PISA, Greece 2022).

Greece is also marked by skills mismatches, as indicated by various qualification indicators. Overqualification occurs when individuals have qualifications beyond job requirements, while underqualification indicates a lack of necessary skills. Mismatches can also occur when individuals work in fields unrelated to their training. According to OECD data from 2019, Greece ranks second highest in the EU-27 for overqualification (25.1%), trailing only Portugal, and fourth highest among OECD countries, while underqualification (17.5%) aligns with the OECD and EU averages. Greece also leads OECD countries in field-of-study mismatch indicator, at 41.7%, surpassing both EU-27 and OECD averages. CEDEFOP's indicators reveal that Greece has the highest EU overqualification rate for tertiary graduates aged 25-34, at 38.5%, with men (42.8%) more affected than women (42.8%). CEDEFOP underscores the concern that highly educated individuals in jobs requiring lower skills may signal inefficiencies in higher education public resources. Overqualified graduates may also experience lower wages and job satisfaction compared to peers in roles aligned with their qualifications.

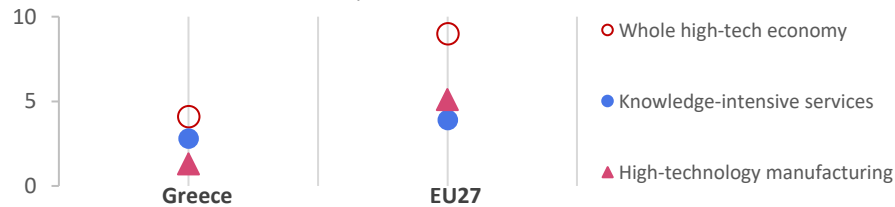
Most requested skills in online job advertisements in Greece in 2022 categorized per ESCO level 2\* (% of total)



Distribution (%) of total job openings in Greece by occupational skills in the period 2021-35



Projections of employment share of high-tech economy in Greece compared to EU-27 in 2035



\*ESCO is classification system that organizes skills, qualifications, and occupations for the EU's labor market and education. ESCO 2 denotes the most detailed classification level.

Source: CEDEFOP

The most sought-after skills in online job postings in Greece encompassed a variety of digital proficiencies.

### Top skills and job openings across different skill levels of occupations

CEDEFOP offers insights into both current and anticipated skill demands within Europe's labor market. In Greece, data from 2022 highlighted the most sought-after skills in online job advertisements, categorized by ESCO. These included the use of digital tools, like collaboration and content creation (35%), problem-solving (27%), networking (26%), sales and procurement (26%), administrative tasks (18%), and organization and planning (16%). Additionally, prominent skills encompassed various other digital and ICT abilities, such as data analysis (12%), programming (10%), and information assessment (7%).

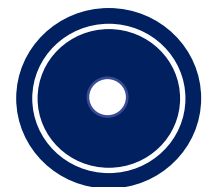
CEDEFOP's indicators include total job openings, comprising net employment change and replacement needs across four broad occupational groups based on skills categories. In Greece (2021-2035), 41% of openings are for skilled non-manual jobs, primarily in sales and personal services. High-skilled non-manual roles account for 30%, with teaching, health, legal, social, and cultural professions being predominant. Skilled manual positions, including agricultural workers and drivers, constitute 21% of job openings, while 8% are for elementary occupations.

### High-tech economy employment

CEDEFOP's high-tech employment indicator measures the proportion of individuals in manufacturing and services engaged in high-tech, knowledge-intensive activities. By 2035, Greece's projected high-tech employment is anticipated to be 4.1%, below the EU-27 average of 9%. Knowledge-intensive services account for 2.8% (EU-27: 3.9%), and high-tech manufacturing for 1.3% (EU-27: 5.1%). Greek high-tech employment growth for 2022-2035 is forecasted at 4.7% (EU-27: 15.4%), more prominent in construction, energy supply, finance, wholesale & retail, accommodation, food services, and ICT sectors.

# Policy recommendations and SWOT analysis

---



### Aligning the education system with market demands

The Greek market experiences mismatches between qualifications, skills, and job requirements, as evidenced by indicators of overqualification, field-of-study mismatch, and low performance of Greek students in international assessments. Addressing this issue requires a more cohesive connection between the formal education system and the labor market, with interventions across all levels of education to reduce future mismatches and enhance the performance of Greek students. Effective solutions include revising school curricula to align with evolving societal and employment needs, incorporating courses on environmental and climate change awareness, improving student support services, and providing comprehensive teacher training and support programs.

### Enhancing innovation and digital integration in schools

Promoting innovation and research in education demands supporting research initiatives, fostering academia-industry collaboration, and incentivizing innovative teaching methods and educational technologies. Following the increased reliance for remote learning due to COVID-19 and the needs for blended learning approaches, the education system could greatly benefit from investing in digital infrastructure, improving internet connectivity and ensuring widespread access to devices for students and teachers (Nikolakaki 2021).

### Strengthening funding for education

Given Greece's heavy reliance on public spending for education and its ranking among countries with the lowest expenditure on education as a percentage of GDP, the country faces underfunding issues in its education system. This problem is particularly acute in tertiary education, where Greece's low average expenditure places it at the bottom among EU countries. However, the large number of total enrolled students in Greek universities exacerbates the issue, producing distorted ratios as it includes non-active students, thereby reducing the average spending per tertiary student.

**Policies must focus on aligning education with market needs, prioritizing access to education for all, and tackling youth unemployment.**

### Prioritize inclusivity, equity and access to education for all

Research suggests that certain households, particularly those in remote, rural areas, or children from migrant or lower-income families face challenges in accessing education (Yousaf et al 2020, OECD 2021, [Center for Global Development](#)). The drop in high-school student enrolment during the COVID-19 lockdowns could underscore this pressing issue. To ensure engagement for all students, targeted policies are necessary to support marginalized and disadvantaged groups, including those in remote areas, migrant children, and students with disabilities, through provisions like transportation assistance, language support, and material resources like computers.

### Addressing youth unemployment

Greece also grapples with the significant challenge of youth unemployment rates, consistently ranking among the highest in the EU (26.7% for ages 15-24 in 2023), and low youth employment rates (50.5% for ages 20-29 in 2022, the second lowest after Italy). Moreover, many young people are neither employed nor in education or training, even among tertiary graduates, highlighting a disconnect between education and employment. Addressing this issue requires active labor market policies such as internships, apprenticeships, or VET.

### Fostering entrepreneurship among youth

Entrepreneurship stands as a viable avenue for young people, offering a means to combat unemployment. The Global Entrepreneurship Monitor underscores Greece's insufficient focus on entrepreneurship education both within formal schooling and post-education contexts (GEM 2024). Despite higher involvement among younger people (aged 18-34) and tertiary graduates, Greece ranks as the 4th lowest among 46 economies in new start-up creation (2023).



## STRENGTHS

- A significant proportion of the workforce, especially young people, holds tertiary education qualifications.
- Significant uptick in enrollment for Master's and Doctoral programs.
- Greece is distinguished by its high number of foreign languages taught per pupil in lower secondary education.
- Advancements in digitalization of education and the implementation of distance learning initiatives.
- Female students show a notable increase in tertiary education, which is more pronounced in the Master's level.
- Evaluation and accreditation of Greek universities.

## WEAKNESSES

- Highly centralized educational system across all levels, allowing institutions limited degrees of freedom.
- Prolonged graduation for many enrolled students in the tertiary education.
- Consistently low average student performance in PISA assessments.
- Significant discrepancies between skills acquired and job requirements.
- Challenges in vocational and educational training.
- Curricula occasionally emphasizing memorization rather than critical thinking.



## OPPORTUNITIES

- Utilizing Greece's historical and cultural richness as a valuable educational resource to nurture national identity.
- RRF funds allocation to education, vocational training, and skill development.
- Regulatory emphasis on the upgrading and digitalization of schools.
- Revising school curricula to align with evolving societal needs, sustainability and environmental and climate change awareness.
- Develop essential skills to equip students for the labor force.
- Surge in pursuit of ICT related occupations.
- Non-state universities as an opportunity to mitigate shortcomings in public universities and encourage healthy competition.
- Encourage entrepreneurship as a post-study career path for young people.

## THREATS

- Demographic challenges, including brain-drain and low birth rates ratio.
- Insufficient funding of public expenditure on education.
- Economic downturns and high unemployment rates, especially among young people.
- Disparities in access and opportunities within the education system.
- Potential disruptions to normal school and university operations due to events like another global pandemic.

### Articles and reports

Barro, R. (2001). *Education and economic growth*. The contribution of human and social capital to sustained economic growth and well-being, OECD.

CEDEFOP.

– (2023). *Skills forecast - Greece*.

– (2022). *European Inventory of NQFs*.

Council of the European Union. (2021). *Strategic framework for European cooperation in education and training towards the European Education Area and beyond (2021-2030)*.

European Commission. (2022). *European strategy for universities*.

Giambona, F., Porcu, M., and I. Sulis. (2014). *Does Education Affect Individual Well-Being? Some Italian Empirical Evidences*. Open Journal of Statistics, 4, 319-329

Global Entrepreneurship Monitor. (2024). *GEM 2023/2024 Global Report*.

Hanushek, E. and Woessmann, L. (2020). *Education, knowledge capital, and economic growth*. The economics of education, Second edition, Ch.14.

Hellenic Authority for Higher Education.

– (2023). *Annual Report on the Quality of Higher Education*.

– (2022). *Manual of quality indicators*.

International Labour Office. (2012). *International Standard Classification of Occupations*.

IOBE. (2013). *Public and private education: a comparative analysis*.

Kakarelidis, G., and N. Georgiadou. (2023). *Academic asylum, academic freedom, and police jurisdiction in law enforcement at framework regarding the structure and the operation of higher education institutions*.

Law 4009/2011. *Structure, operation, ensuring quality of studies and internationalization of higher education institutions*.

Law 4521/2018. *Establishment of West Attica University and other regulations*.

Law 4559/2018. *University of Ioannina and Ionian University*.

Law 4589/2019. *Synergies of National and Kapodistrian*

*University of Athens, Agricultural University of Athens and University of Thessaly with TEIs of Thessaly and Central Greece*.

Law 4610/2019. *Synergies of universities with TEIs and access to tertiary education*.

Law 4623/2019. *Regulations regarding digital governance*.

Law 4653/2020. *Hellenic Authority for Higher Education - Special Accounts for Research Funds of higher education institutions, research and technological institutions*.

Law 4727/2020. *Digital governance - Electronic communications*.

Law 4777/2021. *Admission to tertiary education - Protection of academic freedom - Upgrading of academic environment*.

Law 4823/2021. *Upgrading school – Strengthening teaching staff*.

Law 4957/2022. *New horizons for higher education institutions: Enhancement of quality, functionality and connection of higher education institutions with society*.

Law 4961/2022. *Emerging information and communication technologies - Strengthening digital governance*.

Law 5094/2024. *Strengthening public universities - Operational framework of non-profit branches of foreign universities*

Leoni, S. (2023). *A historical review of the role of education: from human capital to human capabilities*. Review of political economy, Advance online publication.

Ministry of Finance. (2021). *Greece 2.0. National Recovery and Resilience Plan*.

Nikolakaki, E. (2021). *Digitalization in primary education*. Master Thesis, Technical University of Crete.

Obradovic, S. (2009). *Education and economic growth*. Lex ET Scientia International Journal, 1, 377-385.

OECD.

– (2020). *Education policy outlook - Greece*.

– (2021). *Education at a glance*.

– (2023). *Education at a glance 2023 - Greece*

– (2023). *PISA 2022 results - Factsheets - Greece*.

Psacharopoulos, G., (1994). *Returns to investment in education: A global update*. World Development, 22, 1325-1343

Spiel, C., Schwartzman, S., Busemeyer, M., Cloete, N., Drori, G., Lassnigg, L., Schober, B., Schweisfurth, M. and Verma, S. (2018). The contribution of education to social progress. *International Panel on Social Progress, (ed.) Rethinking Society for the 21st Century*. Cambridge University Press, pp. 753-778.

Schultz, T. (1961). *Investment in Human Capital*. The American Economic Review, 51, 1-17.

Stochasis.

– (2023). *Primary and secondary formal private education*.

– (2024). *Tertiary private education*.

Valero, A. (2021). *Education and economic growth*. CEP Discussion Papers, dp1764, Centre for economic performance, LSE.

UNESCO. (2015). *International Standard Classification of Education*.

Yousaf, F., Shehzadi, K. and Parveen, Z. (2020). *Reasons for being out of school: implications for education policy*. Global Educational Studies Review, V(III), 273-293.

### Databases and URLs

CEDEFOP

ELSTAT

Eurostat

ICAP – Dataprisma

OECD

[capital.gr](http://capital.gr)

[Center for Global Development](http://Center for Global Development)

[Esco](http://Esco)

[ec.europa.eu](http://ec.europa.eu)

[European Youth Foundation, Council of Europe](http://European Youth Foundation, Council of Europe)

[Eurydice.eu](http://Eurydice.eu)

[kathimerini.gr](http://kathimerini.gr)

[Minedu.gov.gr](http://Minedu.gov.gr)

**ASPETE:** School of Pedagogical and Technological Education

**EBITDA:** Earnings Before Interest, Taxes, Depreciation and Amortization

**ECVET:** European Credit System for Vocational Education and Training

**EEA:** European Education Area

**EHEA:** European Higher Education Area

**ELKE:** Special Account for Research Funds

**EOP:** Household Budget Survey

**EPA:** Public vocational apprenticeship school

**EPAL:** Upper secondary vocational high school

**ERA:** European Research Area

**ESCO:** European Skills, Competences, Qualifications and Occupations

**EU:** European Union

**GDP:** Gross Domestic Product

**GEM:** Global Entrepreneurship Monitor

**GVA:** Gross Value Added

**HAHHE:** Hellenic Authority for Higher Education

**HOU:** Hellenic Open University

**ICT:** Information and Communication Technologies

**IEK:** Post-secondary non-tertiary education vocational institution

**ISCED:** International Standard Classification of Education

**ISCED-F:** International Standard Classification of Education-Fields of education

**ISCO:** International Standard Classification of Occupations

**LFS:** Labour Force Survey

**NACE:** Statistical classification of economic activities in the European Community

**OAED:** Manpower Employment Organization

**OECD:** Organization for Economic Cooperation and Development

**PISA:** Programme for International Student Assessment

**ROA:** Return of Assets

**ROE:** Return on Equity

**RRF:** Recovery and Resilience Fund

**TEI:** Technological Educational Institute

**UN:** United Nations

**UNESCO:** United Nations Educational, Scientific and Cultural Organization

**VET:** Vocational Education and Training

Dr. Panayotis Kapopoulos  
Chief Economist  
[panayotis.kapopoulos@alpha.gr](mailto:panayotis.kapopoulos@alpha.gr)

Dr. Foteini Thomaidou  
Senior Economist, Head of sectoral studies  
210-5178966  
[foteini.thomaidou@alpha.gr](mailto:foteini.thomaidou@alpha.gr)

Spyridoula Kati  
Research Economist, MSc  
210-5178968  
[spyridoula.kati@alpha.gr](mailto:spyridoula.kati@alpha.gr)

ECONOMIC RESEARCH  
ALPHA BANK  
1, Korai Street  
GR 105 64 Athens  
T +30 210 517 8963, F +30 210 348 7873  
Email: [alphabankeconomicresearch@alpha.gr](mailto:alphabankeconomicresearch@alpha.gr)  
Web site: [Economic analyses | ALPHA BANK](#)

#### Disclaimer

*This report, issued by Alpha Bank, is provided for information purposes only. The information it contains has been obtained from sources believed to be reliable but not verified by Alpha Bank and consist an expression of opinion based on available data at a particular date. This report does not constitute an advice or recommendation nor is it an offer or a solicitation of an offer for any kind of transaction and therefore factors such as knowledge, experience, financial situation and investment targets- of each one of the potential or existing clients- have not been taken into consideration and have not been tested for potential taxation of the issuer at the source neither for any other tax consistency arising from participating in them.*

*Furthermore, it does not constitute investment research and therefore it has not been prepared in accordance with the legal requirements regarding the safeguarding of independence of investment research. Alpha Bank has no obligation to review, update, modify or amend this report or to make announcements or notifications in the event that any matter stated herein, or any opinion, projection, forecast or estimate set forth herein, changes or is subsequently found to be inaccurate. Eventual predictions related to the evolution of the economic variables and values referred to this report, consist views of Alpha Bank based on the data contained in it.*

*No representation or warranty, express or implied, is made as to the accuracy, completeness or correctness of the information and opinions contained herein, or the suitability thereof for any particular use, and no responsibility or liability whatsoever is accepted by Alpha Bank and its subsidiaries, or by their directors, officers and employees for any direct or indirect damage that may result from the use of this report or the information it contains, in whole or in part. Any reproduction or republication of this report or part thereof must mention Alpha Bank as its source.*