Institute for Hellenic Growth and Prosperity

The Greek Economy: Current State and Perspectives

INSTITUTE FOR HELLENIC GROWTH AND PROSPERITY

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Executive Summary:

In late 2023, the IHGP Report "The Greek economy: Looking back and charting the way forward" examined economic and political developments between 2012 and 2022 in Greece with references to the MacKinsey, Pissarides and OECD reports. It provided a relevant summary and analysis, beginning with recommendations that were brought forward by prominent think tanks, committees, and international organizations. It addressed the evolution of macroeconomic indicators and discussed structural changes in the Greek economy. IHGP offered its own recommendations for improving the economy and some suggestions for the Greek educational system. These were designed to address changes in economic conditions and market demand.

The present IHGP update examines the latest economic and political developments between 2023 and 2024. It provides relevant summary, analysis, addresses the evolution of macroeconomic indicators and discusses structural changes and perspectives in various sectors of the Greek economy.

Summary of Principal Findings:

The IHGP studied the Current State of Affairs in various Greek economic sectors, considering the necessary transformations of the Greek economy towards full engagement with the Digital Revolution while strengthening traditional industry sectors. Its conclusions - in summary- are as follows:

- in the area of Agrifood, the new EU Common Agriculture Policy (CAP) Plan heralds a transformative production model, focusing on innovation, technology adoption, and young entrepreneurship to boost competitiveness. It emphasizes securing fair farmer incomes while prioritizing the sustainable development of rural areas and reducing agriculture's environmental footprint,
- in the area of Tourism, the sector holds immense potential for growth, driven by its rich cultural heritage, natural beauty, and strategic initiatives such as EU-funded programs and sustainable tourism in protected areas. Maritime and yacht tourism, as well as senior and health tourism, present lucrative opportunities to diversify offerings and attract high-value visitors.

- in the area of Agrifood-tourism a unified national gastronomic identity, coupled with investments in agritourism and thematic tourism programs, has the potential to make Greece a global leader in culinary tourism, benefiting both sectors significantly,
- in the area of Shipping, the sector is facing several key challenges on the path to maintaining its global leadership and securing future viability. Key challenges include a) Environmental concerns and regulatory compliance, b) rapid technological change, c) shortage of skilled and talented personnel, and d) political unrest, imposed sanctions and geopolitical tensions,
- in the area of Logistics and Transport, three main restraining factors in business activity continued to be related to the weaknesses of the public sector. Inefficient public administration is in first place, followed by the functioning of the judiciary. In third place are the discontinuities observed in state functioning. Next are the obstacles raised by the tax regime, namely its frequent changes and high taxation,
- in the area of Energy, it has become evident that Greek electricity generation relies almost equally on fossil fuels and renewable sources of energy, while wind power generation in Greece remains a dominant contributor,
- in the area of Banking, Greek banks have redefined themselves as central pillars of economic progress at a pivotal moment as Greece prepares to tackle new challenges in competitiveness, and the twin transitions to a digital and a greener economy,
- on the area of Housing, the combination of low wages and escalating property prices has made homeownership a difficult quest for most Greeks, contributing to a particularly challenging situation for Greek citizens, but the rise in supply will eventually lower the prices making the situation better.
- in the area of Capital Markets, the Greek stock market has experienced sustained growth, reflecting the strong performance and optimistic outlook for the Greek economy, while local and national investors have regained confidence in Greece, following years of skepticism.

In addition, IHGP focused on the prospects to the strengthening certain sectors of the Greek economy that have a significant growth and enjoy comparative advantages and can upgrade Greece's position in international competition. Its conclusions - in summary- are as follows:

The Draghi Report's implications for Greece: This report's relevance to Greek economic growth *per se* is rather limited, for a variety of reasons related to the report's core-periphery approach and the idiosyncratic characteristics of the Greek economy. More specifically, Greece's productivity issues are mainly related to its ageing population, public sector inefficiencies, the slow judicial system, education system rigidities, and fiscal policy constraints. In that respect, both the Pissarides Commission 2020 report and the McKinsey 2012 report (updated in 2017), offer more suitable recommendations to guide the Greek economy towards economic growth and improved debt management.

Closing the Innovation Gap in Greece: Bridging the innovation gap will require a comprehensive approach that balances local needs with global best practices. Strengthening the foundations of the innovation ecosystem through investments in education, infrastructure, and private-sector partnerships, while fostering a culture of adaptability and resilience, will be key to ensuring Greece's long-term economic competitiveness.

Innovation Ecosystem developments in Greece: In 2024 Greece is classified by the European Innovation Scoreboard as a "Moderate Innovator," ranking 24th of 27 EU member states with a

summary innovation index of 77.5 vs the EU average of 27 countries. The country has made a significant improvement of 16 positions since the base year of 2017, highlighting the progress made in the past 7 years.

Growth in ICT and Cybersecurity in Greece: In 2024, Greece's sectors of Information and Communications Technology (ICT) and Cybersecurity have experienced notable expansion, spurred by targeted government initiatives, increased private investments, and strong backing from the European Union (EU). Sustained investment and adherence to EU regulations will be essential to maintaining this positive trajectory and fostering a secure, resilient digital ecosystem for all involved.

Sustainability at a glance in Greece: In the latest, Sustainable Development Report 2024, on the performance of the Sustainable Development Goals (SDGs) in the 193 UN countries, issued in June 2024, Greece scores 78.7 out of 100, slightly above the regional average (77.2 for OECD countries) and is placed 29th globally. Overall, the rating for Greece in the 2024 SDR, indicates limited progress with remaining or significant challenges for most SDGs.

Research in Greece: There is an urgent need to fund scientific research. The central objective should be to secure and strengthen Greece's potential (i.e. people and research infrastructure), to promote and facilitate healthy, innovative, research-intensive entrepreneurship and to highlight the role of science in society by implementing flagship actions that respond to major societal challenges.

Contents

Section I: Current State of Affairs

1. Greek Macro Developments Overview

1.1 Basic Macroeconomic Trends

Given the multipolar features of the international system, Greece's economy in the forthcoming years will need to continue its structural reforms within an unstable economic and geopolitical environment. The performance of the Greek economy in 2024 has shown that despite the global disturbances close to the geographical position of the country (war in Ukraine, conflict in Gaza) progress can be made if it will remain focused on implementing the structural reforms that both the private and public sector need.

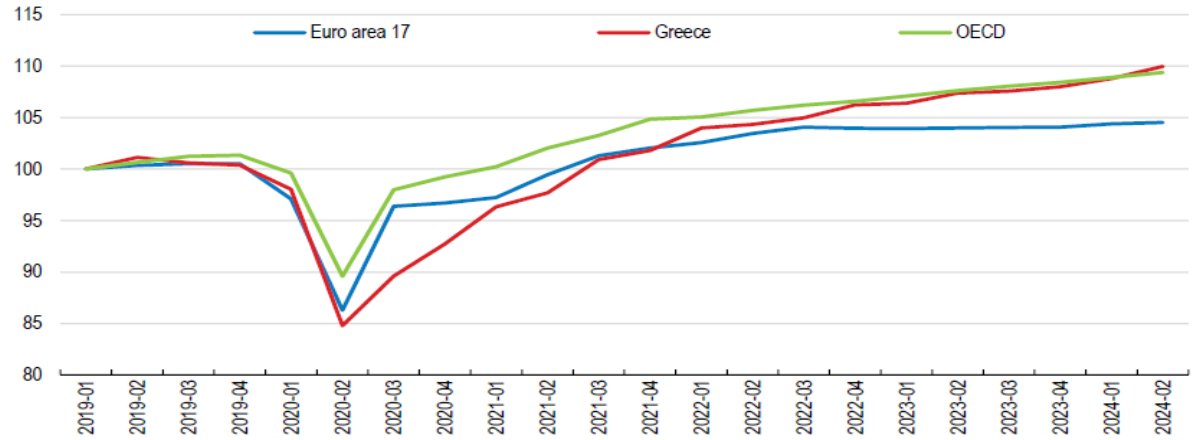


Figure 1.1: Evolution of Real GDP Index (Euro area, Greece, OECD), 2019Q1=100, (Source: OECD Economic Outlook)

In this context, Greece's GDP has followed a dynamic upward trend after 2021-Q4 surpassing the corresponding average of Euro area, while data for the second quarter of 2024 shows that Greece's GDP index is even higher than OECD's (Figure 1.1). Table 1.1 confirms the positive outlook of the Greek economy as the growth rates are expected to remain above 2%. More importantly, we observe that the predictions for 2026 show a 2.5% increase in real GDP. Further, when it comes to the spending contributors in GDP, we observe a major redistribution in favor of the more productive elements. Specifically, investment spending is expected to increase by 7.5% in 2024, 8.8% in 2025 and 9.5% in 2026. Exports are expected to increase by 3.3% and 2.7% in 2025 and 2026 respectively, reflecting an improvement in the country's competitiveness. On the other hand, private consumption growth is expected to stabilize around 1.3% between 2025 and 2026. The same trend is observed with imports that will stabilize around 3% after a rapid 6% growth rate in 2024. As a result, the unemployment rate is projected to drop to less than 10% in 2025 and inflationary pressures will decline reaching an average of 2.1 % by 2026.

Table 1.1: Annual growth rates of major indicators (Greece) (Source: OECD, Economic Outlook 116)

	2023	2024	2025	2026
Real GDP	2.3	2.3	2.2	2.5
Private consumption	1.8	1.8	1.2	1.4
Government consumption	2.6	-2.4	1.0	0.9
Investment	6.6	7.5	8.8	9.5
Exports	1.9	0.7	3.3	2.7
Imports	0.9	6.0	3.3	2.8
Unemployment rate (% labour force)	11.1	10.1	9.4	8.9
Inflation (harmonised CPI)	4.2	3.0	2.7	2.1
Government balance (% GDP)	-1.3	-0.8	-0.6	-0.7
Government primary balance (% GDP)	1.5	2.4	2.4	2.4
Public debt (% GDP)	163.9	157.3	152.2	148.1

According to the Autumn 2024 Economic Forecast for Greece (European Commission, 2024), the employment rate increased to 54.9% in seasonally adjusted terms in the second quarter of 2024 but remains one of the lowest in the EU. The unemployment rate fell to 9.5% in August, albeit remaining one of the highest in the EU. Vacancy rates increased further in the first half of 2024, especially in construction, tourism and high-skill sectors. Employment growth is set to continue, although at a slower pace as skills mismatches and structural bottlenecks, among others, such as the lack of child and elderly care solutions, or the tight regulatory framework for part-time employment, limit the increase in labor supply. The unemployment rate is forecast to decline to around 9.0% by 2026, its lowest level in a decade. Real wages per employee are set to rise by 1.1% on average per year over the forecast horizon also supported by a reduction in social security contribution.

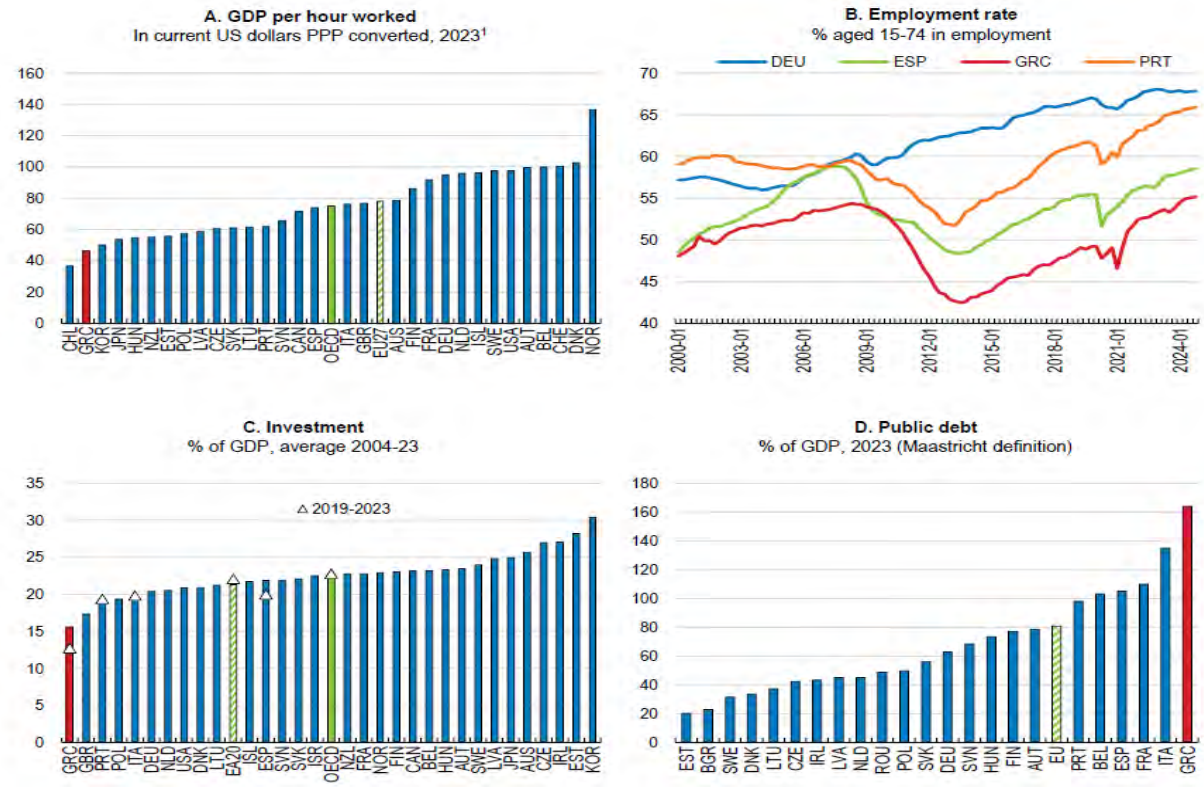


Figure 1.2: Key indicators of Greek economy. Source: OECD (2024), Economic Outlook: Statistics and Projections (database).

Figure 1.3: Unemployment rate, Source: IMF

Figure 1.4: Real GDP growth, red line and Inflation rate, average consumer prices (blueline) (Annual percent change), Source: IMF

Table 1.2: Main macroeconomic indicators (Greece). Source: European Commission, Autumn 2024 European Economic Forecast

	2021	2022	2023	2024	2025	2026
Real economy			*(percent change)*			
Real GDP	8.7	5.7	2.3	2.1	2.3	2.2
Domestic demand incl. inventories	7.2	7.7	1.8	3.4	2.6	2.3
Private consumption expenditure	5.1	8.6	1.8	1.8	1.7	1.7
Government consumption expenditure	1.8	0.1	2.6	0.9	1.1	0.7
Gross fixed capital formation	21.7	16.4	6.6	7.4	8.9	7.1
Exports of goods and services	24.4	6.6	1.9	2.3	3.7	3.5
Imports of goods and services	17.4	11.0	0.9	5.0	4.1	3.5
Contribution to growth			*(percentage points)*			
Domestic demand (excl. inventories)	6.7	8.2	2.7	2.5	2.7	2.4
Foreign trade	0.9	-2.6	0.4	-1.4	-0.4	-0.2
Changes in inventories	1.0	0.2	-0.8	1.0	0.0	0.0
Inflation			*(percent change)*			
GDP deflator	1.4	6.5	5.9	3.5	2.4	2.2
HICP	0.6	9.3	4.2	3.0	2.4	1.9
Labour market			*(percent change, unless otherwise stated)*			
Unemployment rate (% of labour force)	14.7	12.5	11.1	10.4	9.8	9.2
Employment	5.1	2.4	1.2	1.1	0.9	0.8
Compensation per employee	1.6	1.8	3.7	4.1	3.2	3.0
Labour productivity	3.4	3.2	1.1	1.0	1.4	1.4
Unit labour costs	-1.7	-1.4	2.5	3.1	1.7	1.5
Public finance			*(percent of GDP)*			
General government balance	-6.9	-2.5	-1.3	-0.6	-0.1	0.2
Total revenue	49.8	50.4	48.2	48.1	47.4	47.8
Total expenditure	56.7	52.9	49.5	48.7	47.5	47.6
General government primary balance	-4.5	0.0	2.1	2.9	2.9	3.2
Gross debt	197.3	177.0	163.9	153.1	146.8	142.7
Balance of payments			*(percent of GDP)*			
Current external balance	-6.6	-10.2	-6.2	-5.4	-5.9	-5.7
Ext. bal. of goods and services	-7.5	-9.6	-4.7	-4.4	-4.5	-4.5
Exports goods and services	40.3	49.0	43.7	43.4	43.3	43.7
Imports goods and services	47.8	58.7	48.4	47.8	47.7	48.2
Memorandum item			*(EUR bn)*			
Nominal GDP	184.6	207.9	225.2	238.0	249.5	260.7

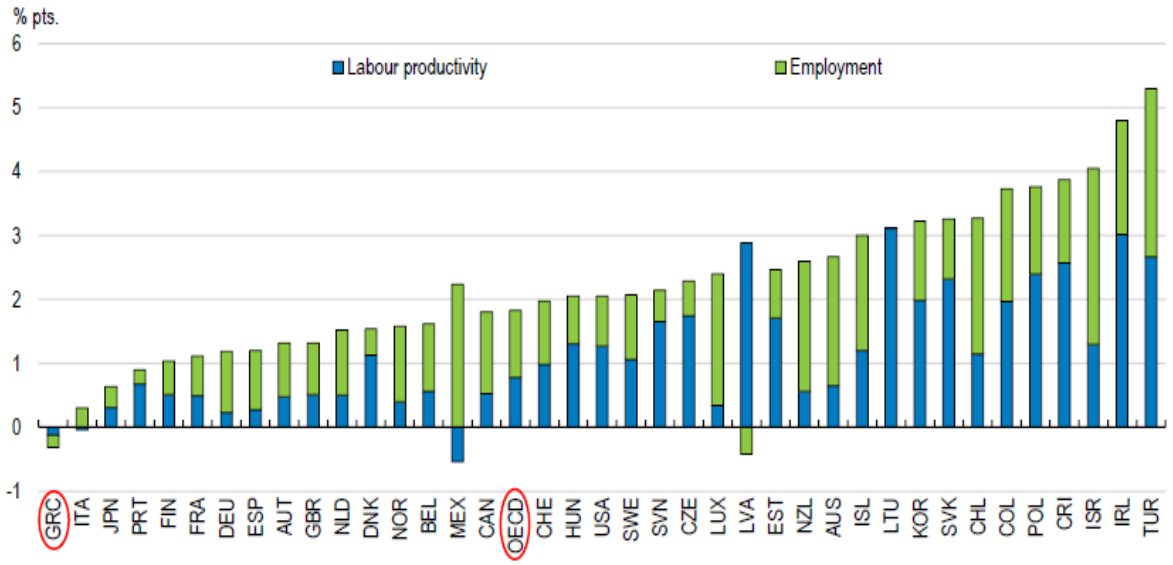


Figure 1.5: Annual contributions to real GDP growth, 2003-23. Source: OECD (2024), Economic Outlook: Statistics and Projections (database). Note: Labor productivity is defined as real output per worker.

Despite the recent rebound, real GDP growth has been weak during the last two decades, with negative contributions from labor productivity and employment (Figure 1.5). The weakness in labor productivity growth has been explained by weak investment which has led to lower capital stocks per worker. To boost GDP and accelerate investments through firm growth, OECD suggests the following actions:

a. Ensure the effective and timely consultation of stakeholders on new draft legislation and regulations, including by avoiding emergency legislation.

b. Formalize and accelerate the review of existing business regulations in cooperation with businesses and union representatives.

c. Consider establishing a regulatory sandbox on digital technologies, such as the proposed EU AI Act, to promote regulatory experimentation and foster innovation

d. Support knowledge networks, clusters and strategic partnerships, including with foreign firms and organizations, for example by promoting access to knowledge-intensive business services for micro firms.

e. Require regulatory impact assessment to consider more effective alternatives to regulations, including `do nothing' options, and to evaluate the impact on innovation and on competition of all new primary legislation and subordinate regulations. Ensure that civil servants involved in producing assessments possess the necessary skills and capacities

1.2 Fiscal Performance and Debt

The combination of higher growth rates along with fiscal discipline (government deficit lower than 1% of GDP and strong primary surpluses as % GDP from 2024 onwards) has led to a rapid decrease of the debt-to-GDP ratio from 209.4% in 2020 to 163.9% in 2023. According to the Post-Program Surveillance Report (Autumn 2024) of the European Commission, government debt is expected to decline in the short term and stay on a downward trajectory in the medium and long term as long as prudent fiscal policies are maintained. General government debt is projected to continue its downward trend, falling to 146.8% in 2025. According to the baseline scenario the debt ratio is expected to fall to 119.1% of GDP by 2035. According to the debt sustainability analysis, Greece faces low risks in the short term, high risks in the medium term and low risks in

the long term. The need to finance public debt will be close to 10% of GDP for the period 2024-2026, thereafter increasing to reach 15.5% of GDP in 2033, 13.8% in 2034 and 14.4% in 2035. Driven by factors such as solid growth rates, fiscal discipline, modest financing needs, its large cash buffer and the low-interest rate sensitivity of the debt, the country's capacity to serve the debt remains strong, despite the increasing financing costs due to the expected higher geopolitical uncertainty.

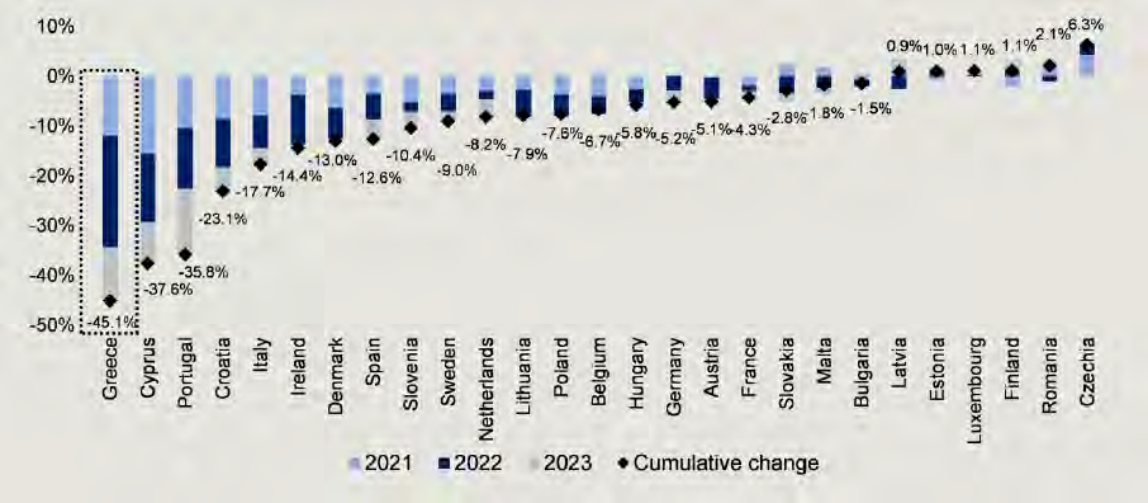


Figure 1.6: Debt to GDP ratio: cumulative change in 2020-2023 across EU-27 (source: Eurostat, Data processing: Alpha Bank, 2024)

The cumulative reduction of the Greek public debt is the largest in EU-27, reaching 45.1% during 2020-2023 (Figure 1.6). Fiscal stability and commitment to spending discipline have strengthened the credibility of the Greek government. The bids for the new 30-year bond covered 11 times the 3 billion euros raised, and the corresponding yield was 4.241%, namely 20 basis points above Spain's and 20 basis points lower that Italy's. The success of the 30-year bond is in line with the upgrading of Greece's outlook to positive, which was decided and given a few days ago by S&P (Alpha Bank, 2024). Further, according to the same source, since a large portion of Greece's public debt is held by international institutions with favorable conditions, possible higher interest rates are not expected to have a strong negative effect on Greece's public finances. According to OECD Economic Survey for Greece (2024), with the phase-out of inflation-support measures and the pick-up in economic activity, public debt relative to GDP is projected to decline further by 2026. Despite the declining trend, Greece's debt remains the highest in EU (Figure 1.7).

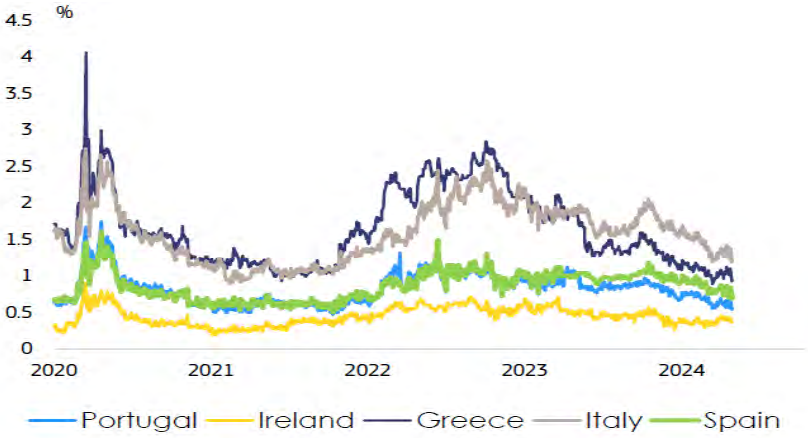


Figure 1.7: Sovereign yield spreads (10Y). source: HIS Markit

Post-Program Surveillance Report (Autumn 2024) of the European Commission expects the headline deficit to decline to 0.6% of GDP, while the corresponding primary surplus is expected to reach 2.9% in 2024, following a 2.1% increase of GDP in 2023. The even better fiscal performance is due to the growth of current expenditure and the unexpectedly high income-tax revenues, because of the successful efforts to fight tax evasion. The latter has been achieved, among others, through electronic payments, namely by the interconnection of the point-of-sale terminals with the cash registers and the extension of mandatory acceptance of direct electronic payments. Moreover, the increase in employment and the minimum wage have also contributed to the better-than-expected fiscal performance, through the channel of higher social contributions. Further, the primary surplus in budget balanced has been strengthened by the reduction of various fiscal expansionary measures, such as the market pass, the electricity subsidies and other one-off benefits and payment transfers.

The improved fiscal and macroeconomic performance of the Greek economy has been reflected to the continuous decline of the yields and yield spreads. It should be noted that the decrease in Greece's sovereign yields is in line with the general decreasing trend for Portugal, Ireland, Italy and Spain. Further, Following the upgrade to investment grade status by three major rating agencies in 2023, Standard and Poor's, DBRS and Moody's rated the country's sovereign outlook as positive in 2024.

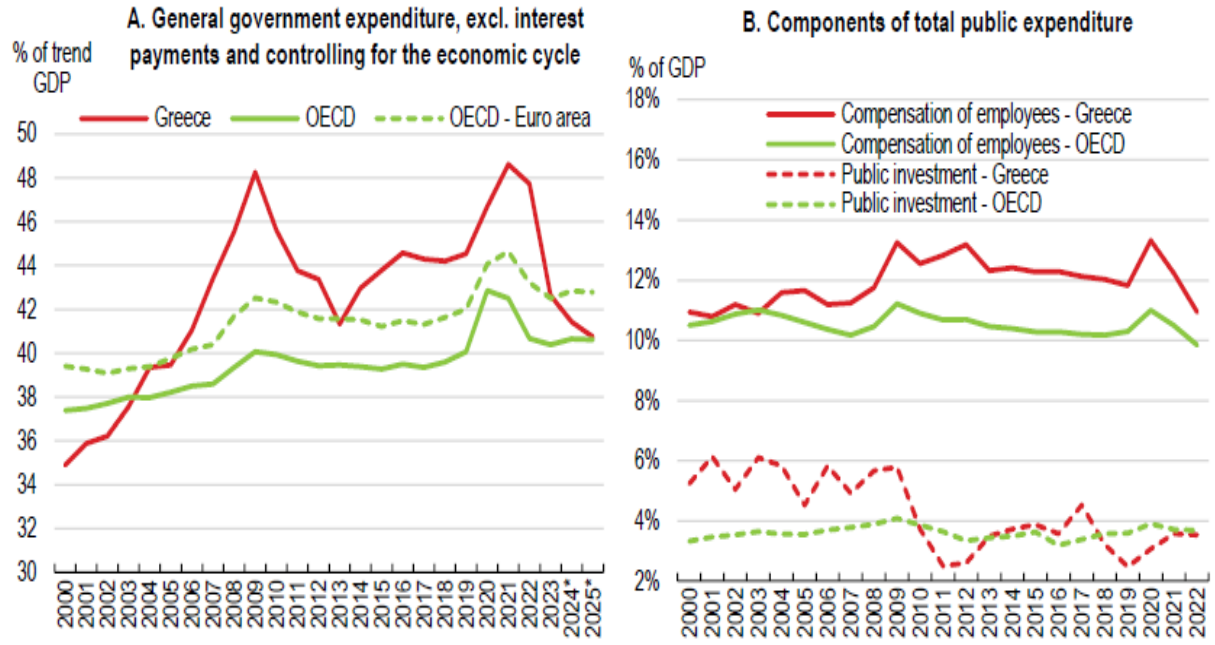


Figure 1.8: General government expenditure (panel A) and components of total public spending (panel B). source: OECD, Economic Survey for Greece (2024)

For OECD (Economic Survey for Greece, 2024) public spending as a share of GDP has declined in recent years, approaching the OECD average (Figure 1.8, panel A). It remains elevated reflecting a comparatively high public sector wage bill, high spending on public pensions, and the still high debt burden (Figure 1.8, panel B and Figure 1.8, panel C). Spending on pensions and debt is expected to diminish significantly over time (see above), which will create some fiscal space. However, high spending needs will persist in areas that support growth and well-being such as public investment, education, and health (Panel C).

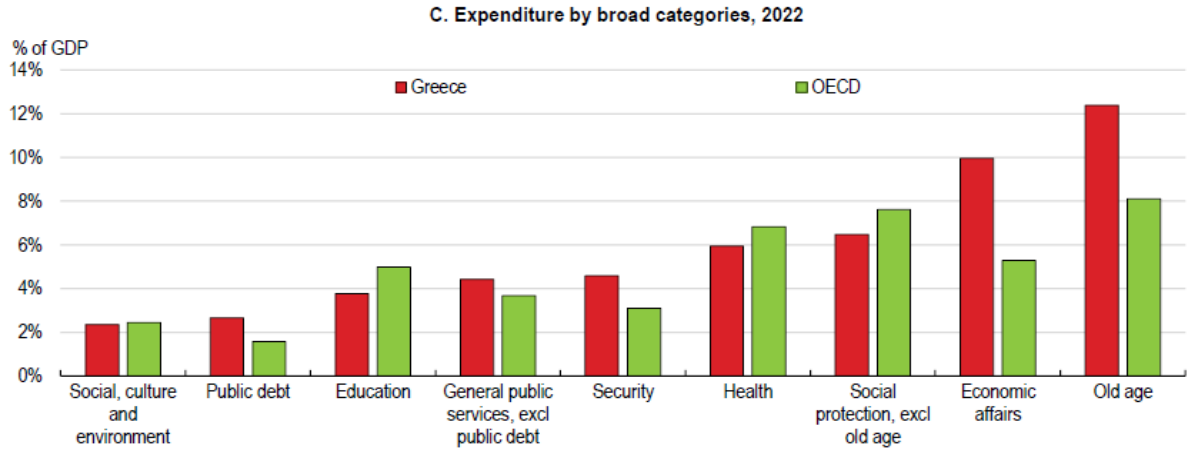


Figure 1.8: Expenditures by broad categories (panel C). source: OECD, Economic Survey for Greece (2024)

In the European Commission Autumn 2024 Economic Forecast the fiscal situation is expected to improve further, leading to a general government surplus by 2026. A major driver of this development will be the decrease in interest expenditure on the back of declining short-term interest rates in 2025. Further, after the increases in public wages in 2024, the base salary of public servants will increase further in April 2025, which means that the monthly minimum wage in the private sector will be equal to the introductory salary in the public sector. Further increases in the minimum wage are expected in 2026. To counterbalance the negative fiscal impact the government is planning to increase the overnight tax for stays in hotels. The growth outlook of the Greek economy and the consequent higher tax revenues, reinforced by a more efficient tax administration, and social security contributions are expected to cover compensate for the higher public spending in wages of public employees and pensions.

Figure 1.9 depicts alternative scenarios concerning the evolution of Greece's gross government debt. The scenarios are related to the degree of structural reforms implementation. In the baseline scenario, the debt-to-GDP ratio will fall below 90% by 2060. This scenario assumes a continuation of the current low debt service costs linked to the high share of official lending and Greece's recent rating upgrade to investment grade. Provided that Greece 2.0 reforms will be fully implemented; debt would decline below 75% of GDP by 2060. If these reforms were combined with a full implementation of OECD Economic Survey for Greece recommendations debt could decline to as low as 57% of GDP by 2060.

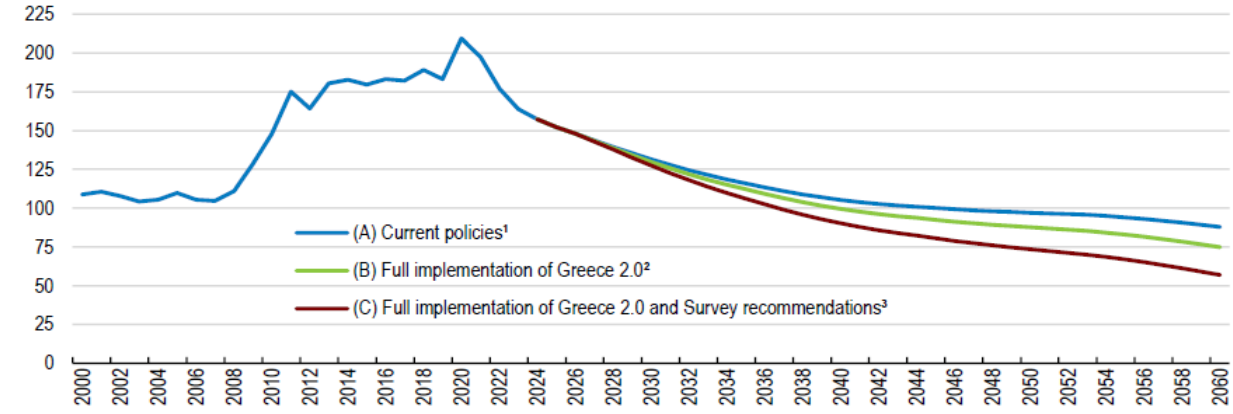


Figure 1.9: Projected impact of structural reforms on gross government debt (Maastricht definition) as % of GDP source: OECD, Economic Survey for Greece (2024)

Table 1.3: Past OECD recommendations and actions taken since 2023 (Source: OECD, Economic Surveys Greece, Dec. '24)

Past Recommendations	Actions taken since 2023
Swiftly implement public investment management reforms, prioritising staff training and developing centres of skills. Prepare to expand domestic funding of public investment once the current EU funding programmes complete.	The Recovery and Resilience Plan includes training for 250 000 civil servants, and digital training projects are currently being designed.
Develop line ministries' capacity to access, adapt and analyse performance information. Develop and present a medium-term perspective of spending trends and implications of policy measures.	A new objective-setting and performance management system has been put in place in 2023, directly linked to policy priorities.
Avoid growth in overall public servant numbers by promoting reallocation of staff to areas short of resources. Strengthen public service recruitment, ensuring the process is responsive to different agencies' skill needs and the growing competition for skills. Consolidate fragmented activities, such as public procurement, into dedicated agencies with deeper capacity. Develop and require the use of framework agreements for common public procurements.	The total number of civil servants declined by 1.1% since 2022, supported by a rule limiting hirings to the number of departures.
Pursue digitalisation and administrative simplification across the public sector, prioritising work process reforms and raising skills.	Measures include the expansion of www.gov.gr as a single point of access for all digital government services and of digital government IDs; the development of a publicly accessible register of procedures, including information on point of service, time, cost and required documents for completing the procedures; the rolling out of government-wide data interoperability; and the migration of relevant data to public cloud.

Greece's fiscal stability in the forthcoming years depends heavily on the implementation of major structural reforms in the fiscal sector. Table (1.3) reports the part OECD recommendations and the corresponding actions taken since 2023. Despite the progress, many reforms and challenges lie ahead. OECD recommendations to ensure Greece's fiscal stability in the forthcoming years are as follows:

a. Primary fiscal surpluses of 2% of GDP in 2024-25

b. Keep public debt on a firmly declining path through more efficient public spending, broader tax bases and growth-enhancing reforms.

c. Gradually shift public spending towards areas supporting growth and equity, building on regular spending and public investment reviews, while containing staff expenditures and maintaining efforts to reduce pension expenditures relative to GDP.

d. Develop micro-data driven approaches to better identify and monitor vulnerable borrowers.

e. Improve the allocation of civil servants by swiftly completing the comprehensive human resources management system, promoting staff mobility and making better use of assessments.

f. Continue improving digital government projects, for example through project management offices to improve coordination and monitoring, and by using procurement systems adapted to ICT and digital projects.

g. Continue efforts to strengthen tax compliance by promoting digital transactions, limiting cash transactions, and rationalizing tax expenditures.

h. Phase-out VAT reductions and exemptions. Evaluate regularly the costs and benefits of all tax expenditures and
subsidies.

i. Introduce an excise tax on food that is high in fat, sugar and salt and raise excise taxes on cigarettes.

j. Decrease tax rates for low-wage earners by lowering social security contributions while reducing personal income tax-free thresholds.

1.3 Banking Sector

In UBS (Global Research, Oct 2024) Greek banks have emerged strongly from the sovereign crisis as NPEs normalized (Figure 1.10) and with solid profitability driving NAV and capital accretion (Figure 1.11). Moreover, Greek banks have recently paid their first dividend in more than a decade while the Capital available for distribution above their internal capital targets over the next three years could be as much as two 60% of sector market cap (Figure 1.12). Further, according to Mr. Yannis Stournaras, Governor of the Bank of Greece, at the presentation of the EIB Investment Survey Results 2023 for Greece, "A key driver towards increasing investment and achieving stronger growth is a robust banking sector that can provide financing to businesses and households. Over the past decade, significant progress has been made in strengthening the banking sector. Banks' profitability, liquidity, capital adequacy and asset quality have all improved, while the divestment of the Hellenic Financial Stability Fund (HFSF) from the systemic banks' equity has also progressed. That said, the shock absorption capacity of the banking sector should be further enhanced. This includes a quantitative and qualitative improvement of the capital base of Greek banks and convergence of their NPL ratio to the European average. Moreover, intensifying competition in the domestic banking sector through the creation of the so-called fifth pillar could improve financing conditions. The availability of bank credit to meet business investment needs could be enhanced by utilizing all national and European financial instruments, such as those available from the European Investment Bank (EIB), the European Bank for Reconstruction and Development (EBRD), the Hellenic Development Bank (HDB) and the RRF".

Further, according to the Bank of Greece Financial Stability Review (Oct 2024):

- In the first half of 2024, the key fundamentals of the Greek banking sector remained at a satisfactory level. Bank profitability improved further, bank liquidity remained high, while capital adequacy was almost unchanged.
- The liquidity of the Greek banking sector remained at a high level. The balance of residents' deposits in Greece in August 2024 amounted to EUR 201.9 billion, marginally up from December 2023, with liquidity ratios remaining above prudential requirements.
- Greek banking groups' core profitability improved significantly. In the first half of 2024, Greek banks' profits after tax and discontinued operations amounted to EUR 2.3 billion, com-pared with profits of EUR 1.9 billion in the first half of 2023

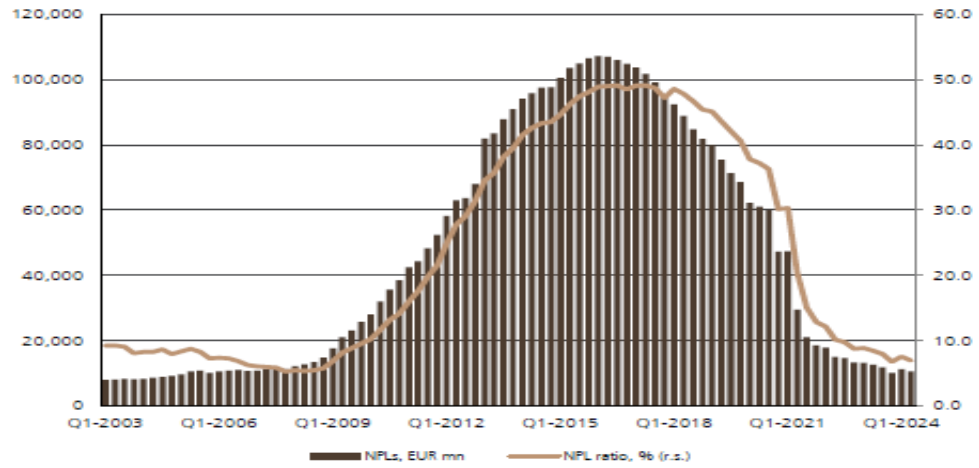


Figure 1.10: Non-performing loans. Source: Bank of Greece, Haver, UBS

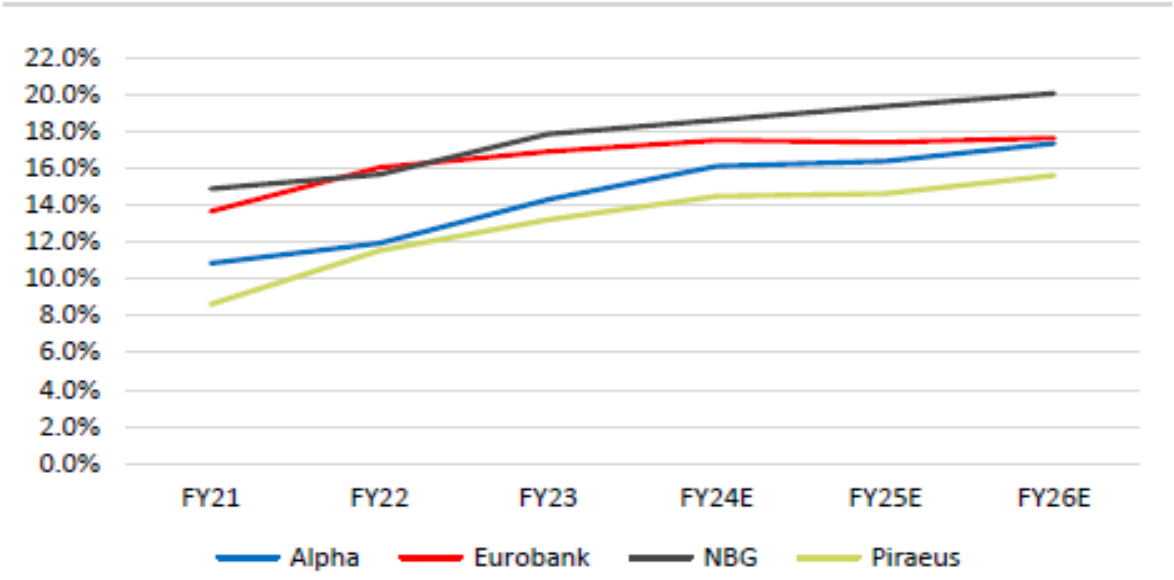


Figure 1.11: CET1 ratios of the big four banks. Source: Company data, UBS estimates

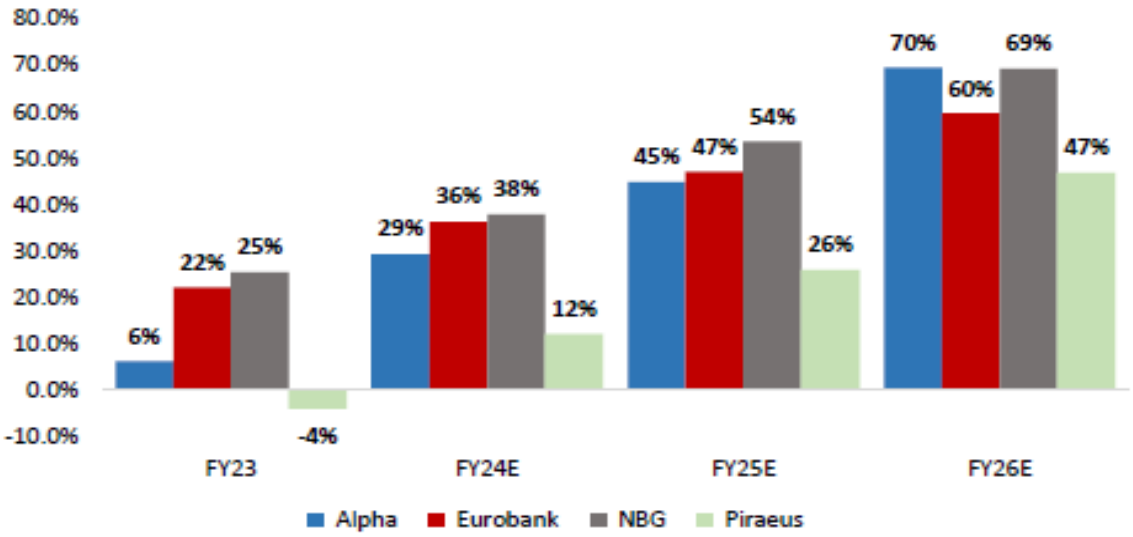


Figure 1.12: Available distributable capital (% of market cap), above CET1 of 14% Source: Company data, UBS estimates

Table 1.4: Financial results of Greece banking sector. Source: Bank of Greece, Financial Stability Review, October 2024

	First half 2023	First half 2024	Change (%)
Operating income	**5,213**	**5,778**	**10.8**
Net interest income	3,987	4,440	11.4
- Interest income	6,309	8,073	28.0
- Interest expenses	-2,322	-3,633	56.5
Net non-interest income	1,226	1,338	9.1
- Net fee income	857	993	15.9
- Trading income	163	192	17.8
- Other operating results	206	152	-26.1
Operating costs	**-1,852**	**-1,929**	**4.1**
Staff costs	-883	-988	11.9
Administrative costs	-671	-622	-7.4
Depreciation	-298	-319	6.8
Net income (operating income less costs)	**3,361**	**3,849**	**14.5**
Impairment charges	-824	-595	-27.8
Other impairment losses	-162	-138	-14.7
Non-recurring profits/losses	-2	-60	>100
Pre-tax profits (+)/losses (-)	**2,372**	**3,057**	**28.9**
Taxes	-530	-739	39.4
Profits(+)/Losses(-) from discontinued operations	15	35	>100
After tax profits (+)/losses (-)	**1,857**	**2,353**	26.7

Source: Financial statements for the four significant institutions (SIs) and supervisory data for the less significant institutions (LSIs).

* The comparative financial information has been restated as a result of reclassifications in the financial statements of the credit institutions.

For the Financial Stability Review (October 2024) of the Bank of Greece, the key fundamentals of the Greek banking sector remained at a satisfactory level (Table 1.4). Bank profitability improved further, bank liquidity remained high, while capital adequacy was almost unchanged. Against this background, banks distributed dividends for the first time in fifteen years, nevertheless implementing a prudent dividend policy. Moreover, throughout 2024, banks' credit rating upgrades by international rating agencies continued, as did the disinvestment of the Hellenic Financial Stability Fund (HFSF) from the Greek significant institutions. The main conclusions of the Financial Stability Review for the banking sector are as follows:

a. The liquidity of the Greek banking sector remained at a high level

b. Greek banking groups' core profitability improved significantly

c. In the current macroeconomic and financial environment, implementing an appropriate macroprudential policy to avoid the build-up of systemic risks and to enhance the resilience of the banking sector is even more important.

d. The smooth operation of financial market infrastructures, i.e. payment, clearing and settlement systems, contributed positively to the stability of the domestic financial system through the efficient processing of transactions

e. The outlook for the banking sector is inevitably linked to Greece's macroeconomic trajectory, which is in turn also affected by international developments.

f. Safeguarding financial stability also largely depends on promoting reforms at the European Union (EU) level

g. The implementation of the policy proposals outlined in the Draghi Report is expected to help resolve competitiveness issues facing the EU on the one hand, and on the other hand, ensure a level playing field for all European banks, as they would all be subject to a single regulatory and resolution framework.

1.4 Digital Economy

For Draghi Report (2024), the key driver of the rising productivity gap between the EU and the US has been digital technology. The main reason EU productivity diverged from the US in the mid-1990s was Europe's failure to capitalize on the first digital revolution led by the internet. Excluding the technology sector, EU productivity growth over the past twenty years would be broadly at par with the US (Figure 1.13). Around 70% of foundational AI models have been developed in the US since 2017 and just three US "hyperscalers" account for over 65% of the global as well as of the European cloud market. The largest European cloud operator accounts for just 2% of the EU market. Quantum computing is poised to be the next major innovation, but five of the top ten tech companies globally in terms of quantum investment are based in the US and four in China. Digital innovation should be one of the key priorities for Greece as well. While progress has been made, especially in the sector of digitalization of the public sector and fiscal authorities, a lot of challenges lie ahead. Cui and Yao (2024) find that informality has dropped significantly in Greece in recent years, although there were temporary increases during the sovereign debt crisis and the COVID-19 pandemic. Lower informality is also found to be associated with higher subsequent GDP growth per capita and higher tax revenue.

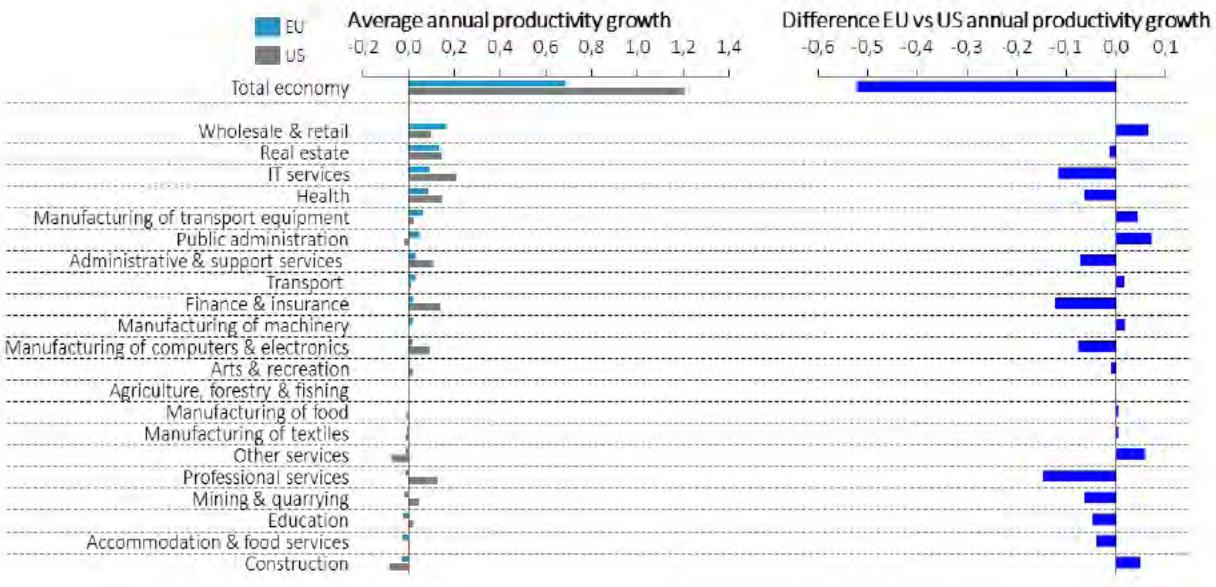


Figure 1.13: Decomposition of average annual labor productivity growth. Selected sectors, US and EU (pp, 2000-2019) Source: The future of European competitiveness (Draghi Report) (2024). European Commission

Moreover, Greece's significant recent progress in digitalization appears to have helped reduce informality. There remains scope to further reduce informality by accelerating digitalization and the ongoing pro-growth structural reforms. Kapogiannis, Palaios & Sawhney (2024), employing a panel dataset encompassing 27 European Union (EU) countries over the period 2017-2022, reveal a consistent and statistically significant positive impact of digitalization on GDP growth rates across the entire spectrum of economic conditions. However, they find that stronger economies can use more efficiently the benefits of digitalization compared to weaker economies,

thus signaling the need of the latter for structural reforms, to improve the integration rate of digitalization in the construction sector. The pronounced influence of the Human Capital component underscores the pivotal role of nurturing human skills to effectively integrate digital techniques into infrastructure development, within a collaborative culture. The results of the above research are important for Greece, which is one of the less developed economics in Eu. If the country wants to further boost its economy on a sustainable basis, then it must undertake more efforts in taking advantage of the benefits offered by digital tools, both in the public and private sector. Although technology is crucial to protecting Europe's social model, it is already a source of anxiety for European workers. Almost 70% of respondents in a recent survey favored government restrictions on AI to protect jobs. Given the strong impact of interest groups on the Greek public sector, actions should be taken to inform the public on the advantages and challenges of AI. Otherwise, important digital reforms may be undermined by interest groups that will advantage of disinformation concerning AI.

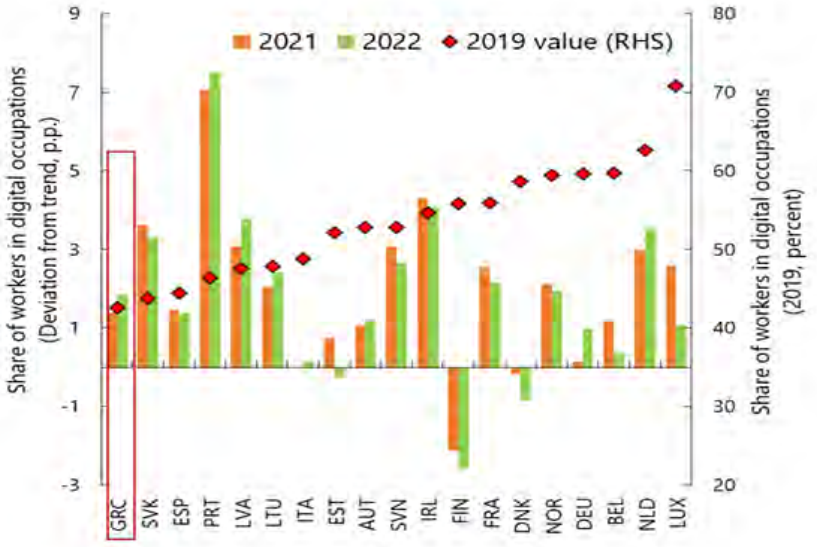
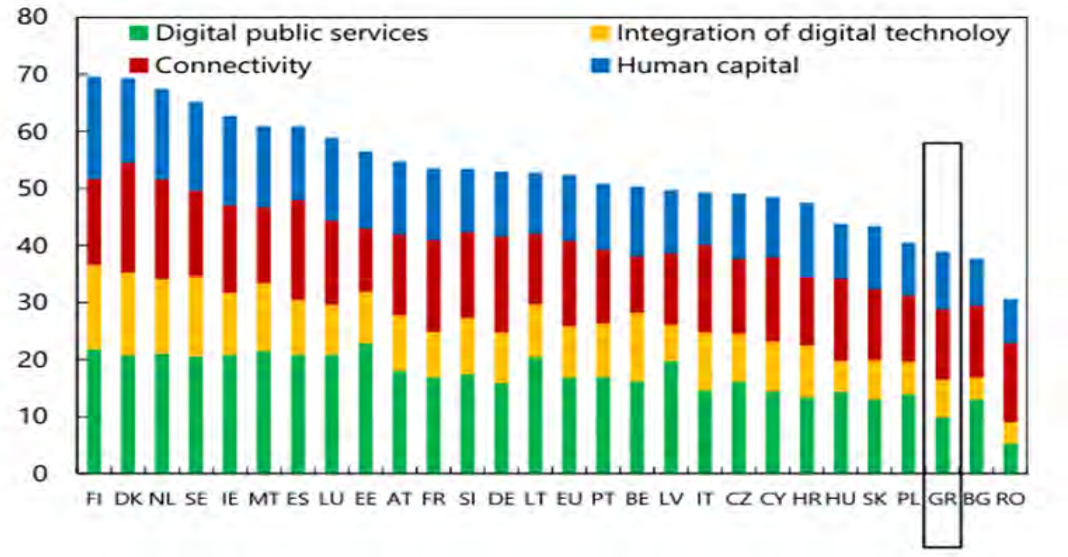


Figure 1.14: Level and Changes in Digital Skills, Source: European Commission, Greece authorities, and IMF staff calculations

Figure 1.15: Digital Economy and Society Index (DESI) 2022 Ranking, Source: European Commission



1.5 Common security and defense policy

The Draghi Report (2024) insists that the EU's defense sector is critical to ensure Europe's strategic autonomy in facing increasing external security threats, as well as driving innovation through spillovers across the entire economy. While new geopolitical threats have put the spotlight back on the EU's defense capacities, the defense sector is also a key driver of innovation for the entire economy. The EU's defense industry is still highly competitive at the global level in specific domains – nevertheless, the sector suffers from a combination of structural weaknesses. In the absence of common European spending, policy actions for the defense sector need to focus on aggregating demand and integrating industrial defense assets. The EU has a long way to go to restore industrial capacity and increase military capabilities. Only ten-member states spend more than or equal 2% of their GDP in line with 2014 NATO commitments (see Figure 1.16).

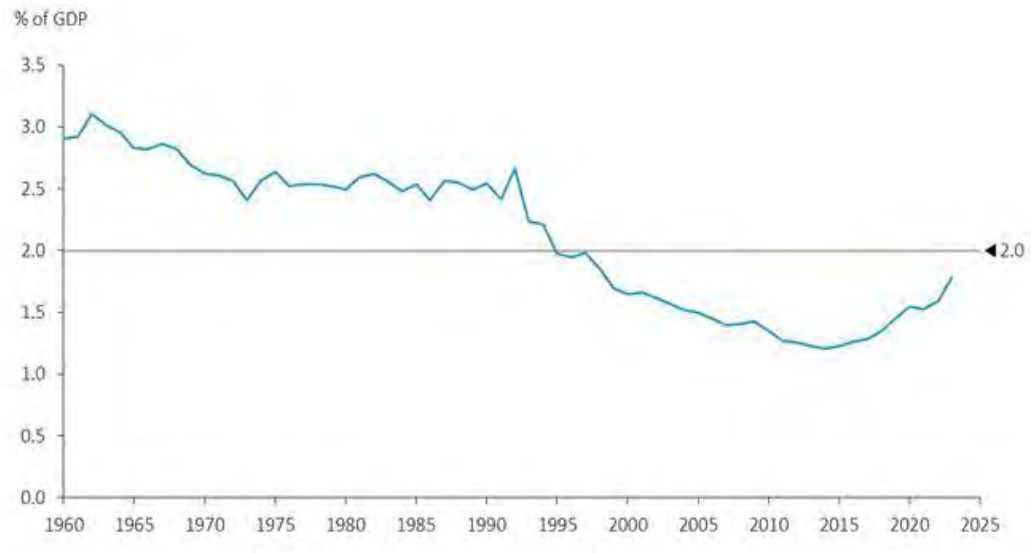


Figure 1.16: EU Member States' defense expenditure, Source: Sipri, European Commission

Palaios, Becker and Chatzimichailidou (2025) shed light on the security and defense industry policy integration of EU countries (1971-2023). Their study reveals the evolution of security and defense industry spills of EU members and their interaction with key geopolitical and military variables. Their empirical findings indicate that the degree of cohesion of both security and defense industry policies across EU countries are rather low (Figures 1.17 & 1.18). Asymmetries revealed show the different security polices followed by the members, reflecting that despite the economic integration, political realism preserving the national interest dominates hard policy issues. Northern countries, albeit their high economic performance and military industrial base, contribute to the rest of the EU less than expected, approaching the role of a security free rider. They conclude that developing a collective security culture through the adoption of a common defense framework is the only way for the EU to close its security gap.

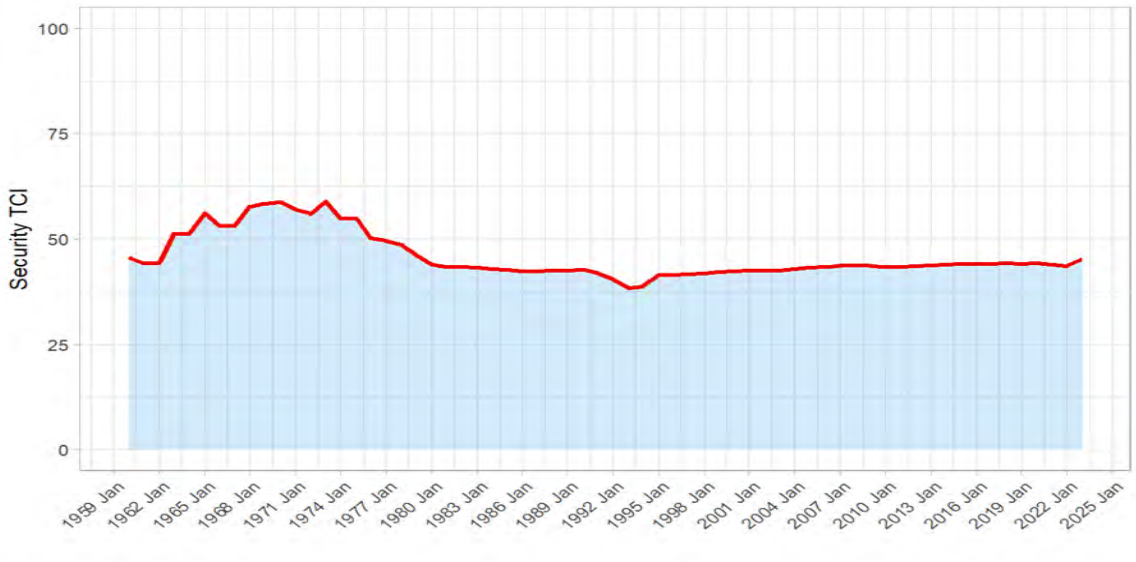


Figure 1.17: Cohesion of EU-Security policies (Security TCI index) Source: Palaios, Becker and Chatzimichailidou (2025)

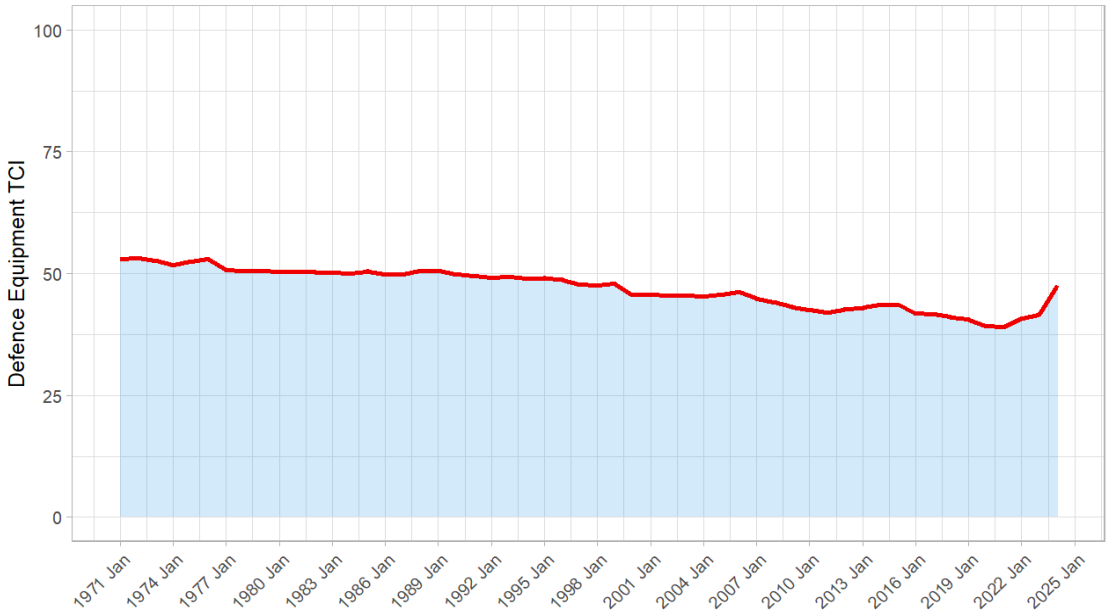


Figure 1.18: Cohesion of EU- Defense industry policies (Defense Equipment TCI index) Source: Palaios, Becker and Chatzimichailidou (2025)

Together with the urgent need to increase overall defense investment, there is a strong case of reinforcing cooperation and pooling of resources for defense R&D at the EU level. The EU's defense expenditure is currently approximately one-third of that of the US, with spending rapidly increasing in China. According to the SIPRI database, the US' defense expenditure in 2023 was estimated at USD 916 billion, while the cumulative expenditure of EU Member States' spending was estimated at USD 313 billion. China's defense budget was estimated at USD 296 billion, but according to several sources it could be significantly higher. The EU's defense industrial footprint is fragmented, while it requires scale. According to Palaios, Backer, Chatzimichailidou (2025), the lack of a single EU defense equipment market has led to the failure of obtaining and profiting from economies of scale. This happens not only because the national European armed forces are too small but, in addition, because national interests dominate over the European collective security. As a result, there is extensive duplication of costly, in terms of R&D, programs with the typical

example of the combat aircraft produced in the EU. Defense companies from Western Europe tend to be present in all domains (ground, naval, air and space), often creating overlap and duplication, while in other parts of the EU there is more specialization. Complementarity arising from specialization can be considered a source of resilience when the EU's defense industry is viewed. According to Draghi's Report several conditions are needed to structurally integrate European companies into the defense sector. These include:

a. Full political support by participating in Member States for structural consolidation of technological and industrial assets.

b. Readiness by the participating Member States to accept mutual interdependence in selected defense segments and ensure the security of supply.

c. No full mirroring and duplication of capabilities, readiness to scale back existing industrial capacities, where needed.

d. A commonly agreed specialization strategy among companies from participating in Member States reallocating capacities and reinforcing respective domains of excellence.

e. Deep specialization of industrial sites located in different participating Member States though the creation of 'poles of competence' in specific fields, functions, technologies or sub-systems aiming to create scale and synergies together.

f. Integrated and autonomous corporate decision-making within single industrial groups, the absence of Member State involvement in corporate decisions, operational integration of the supply chain, and a common R&D strategy focused on developing future capabilities.

2. Greek Agrifood and Tourism Markets Overview

2.1 Agrifood - Economic Contribution

The Greek agrifood sector is a vital contributor to the national economy, encompassing agriculture, food, and beverage production, as well as trade. Its impact is observed in multiple dimensions:

Agricultural Sector

The sector's gross production value reached €15.32 billion in 2023 and is projected to rise to €15.42 billion in 2024. Agriculture contributed €7 billion to Greek gross domestic product (GDP) in 2023, accounting for 3.6% of total domestic gross value added (GVA), with a gross value added (GVA) ratio to GDP of 3.1% in 2022, one of the highest in the EU (Makantasi & Valentis, 2024; Eurostat, 2023). Rural areas, which cover 63% of Greece, house 29% of the population. The sector comprises ~700,000 farms, with an average size of just 7 hectares; over 70% are smaller than 5 hectares (Agriculture and Rural Development, 2024).

Food and Beverage Industry

The food and beverage sector represents a cornerstone of Greek manufacturing, contributing one-third of manufacturing GVA and ranking first in terms of the number of companies (28.1%). Its turnover accounts for nearly 25% of total manufacturing turnover, with a production value of 24.4% and GVA of 26.7% (IOBE, 2022; 2024). Baking and flour products (20%), fruits and vegetables (16%), dairy products (15%), and beverages (15%) are the largest GVA contributors. Dairy leads in production value (18%), followed by baking (16%) and fruits/vegetables (15%). Very small enterprises (fewer than 9 employees) dominate in number (86% for food, 91% for beverages), while large enterprises generate the highest turnover (38% for food, 52% for beverages) (IOBE, 2024).

Exports and Domestic Use

More than 15% of agricultural product value is exported, while 85% serves domestic purposes: household consumption (~33%), food/beverage/tobacco industries (26%), agriculture (16%), and accommodation/catering (5.6%). Notably, over 80% of agricultural product needs in Greece are met domestically (Makantasi & Valentis, 2024).

Sector Growth and Resilience

The agricultural output increased by 24.3% since 2015 but saw a minor decline of 2.4% from 2022 (see Figure 2.1 for the evolution of input and output price indices). GVA at basic prices rose by 6.3% from 2015 levels but fell 5.1% from 2022 (Eurostat, 2023). The food and beverage (F&B) industry turnover rose 14.4% in 2022, reaching €17.4 billion, with net profits at €595 million. EBITDA grew by 5.3% to €1.43 billion, although net profit margins saw a slight decline (IOBE, 2024).

Organic Farming

Greece's organic farming area surged from 10% in 2020 to 17% in 2022, contributing significantly to the EU's organic farming growth, although it remains behind leaders like France and Spain (Eurostat, 2023).

By intertwining agriculture with manufacturing and trade, the Greek agrifood sector showcases its critical role in fostering economic growth, sustainability, and resilience.

Figure 2.1. Evolution of Input and Output Price Indices in Agriculture – Livestock

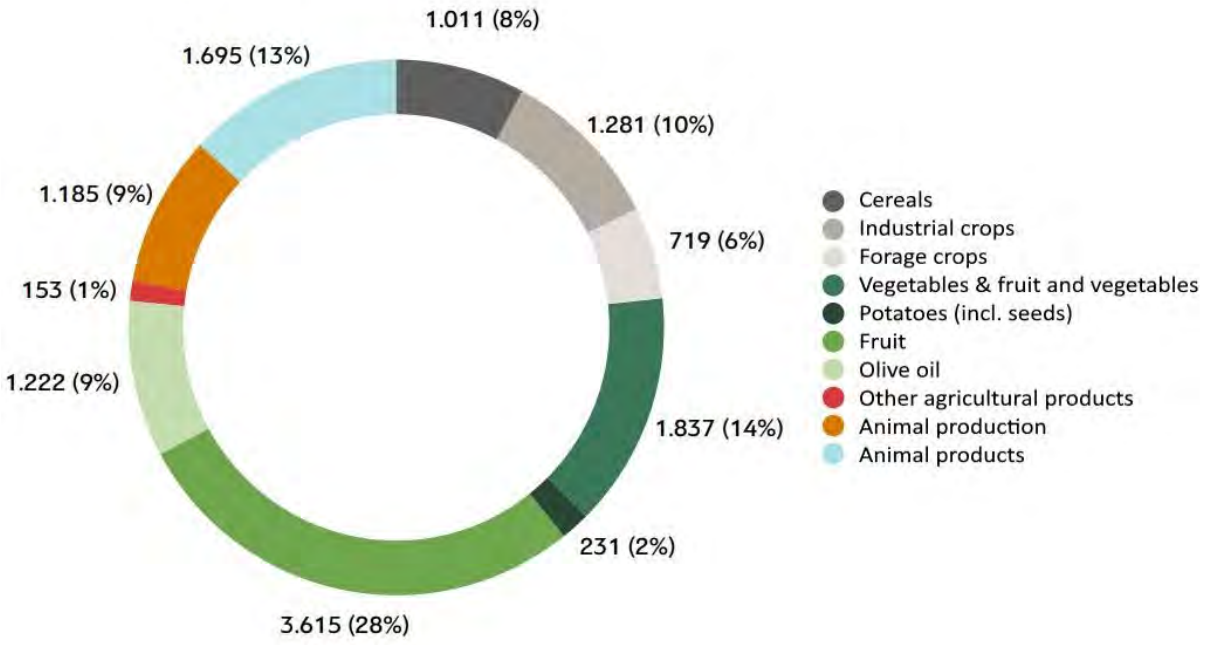
(2020=100.0)

Source: Hellenic Statistical Authority (2024-b)

Agrifood - Key market segments

Crop production holds the highest share of the total agricultural goods output in Greece, with the main products including categories connected to a healthy diet such as fruit and vegetables (see Figure 2.2). Animal production and animal products comprised 22% of the total agricultural goods output in 2022 (Makantasi & Valentis, 2024).

Figure 2.2: **Structure of agricultural goods production, 2022 (€** million & shares of the total)



Source: Eurostat, Data processing: Makantasi & Valentis (2024)

Greece remained a key player in the EU market in 2022, ranking high in the production share of various food product categories, at similar levels to 2021.

In cereal production, Greece ranked third in both durum wheat production, contributing 12.2% of the EU total, and rice production with 10.2% of the EU share (Eurostat, 2023).

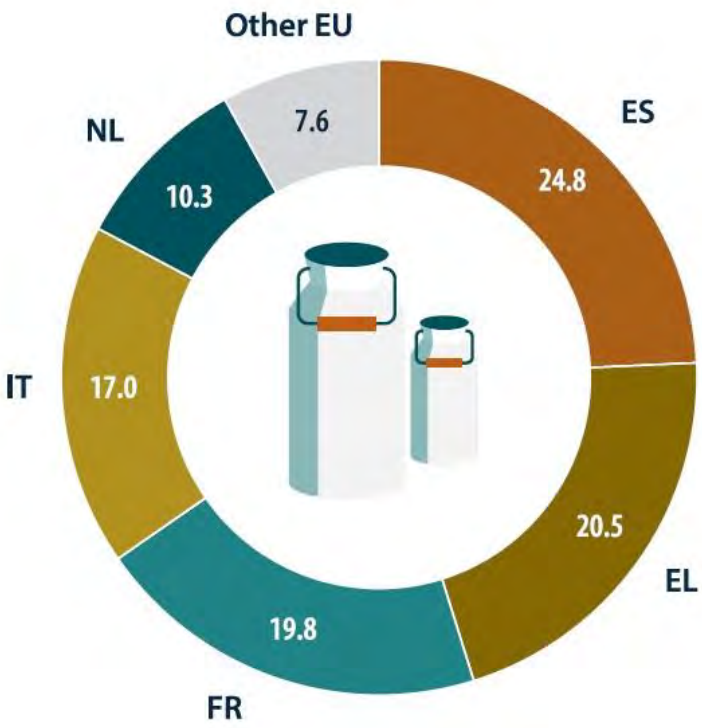
In the fruit, berries, and nuts category, Greece had a stronger yield and, at the same time, a significant growth from 2021 levels, even surpassing 2018 levels in some food products. It was second in peach production, a key fruit, holding a 32.7% share in 2022 (notable growth from 23.8% in 2021). For oranges, Greece was third with 14.9% of EU production (an increase from 12.4% in 2021). The country also stands in third place in nuts production (13.2%), in citrus fruits (11.3%), clementines (10.9%), and lemons and limes (6%) (Eurostat, 2022; 2023).

In livestock, Greece remained a leader in goat population, holding the highest share in the EU at 26.2% in 2022 (up from 24.9% in 2021). Similarly, Greece led goat meat production with 38.8% of the EU total (down slightly from 39.7% in 2021). For sheep population, Greece ranked again third with 12.5%, while standing fourth at sheep meat production (11.8%), similarly to 2021 levels, contributing to the bulk of the EU production along with Spain (28%), France (18.6%), and Ireland (16.1%) (Eurostat, 2023).

In several EU Member States, non-cow livestock significantly contributes to milk production, particularly in arid Mediterranean regions. In 2022, Greece produced 715,000 tons of ewes' milk, while Spain followed with 623,000 tons (Eurostat, 2023). Although Greece's overall share of EU dairy products is modest, it accounted for the second highest share of EU non-cow milk in 2022, at 20.5% (see Figure 2.3), similarly to 2021 (20.9%), while Spain maintained a stable lead (2022; 24.8%, 2021; 24.3%) (Eurostat, 2022; 2023).

These figures showcase Greece's continued prominence in EU agriculture, with notable year-on-year growth in fruit and livestock populations.

Figure 2.3: Share of EU milk from animals other than cows (% of deliveries to dairies, 2022)



Source: Eurostat (2023)

High rankings are achieved also in fishing and aquaculture. Greece had the highest number of fishing vessels, at 17.8% of the EU total in 2022. The previous year, in the Mediterranean and Black Sea, Greece's fleet accounted for 16.8% of the total catch in the area, one of the higher shares right behind Italy (39.1%), Croatia (17.8), and Spain (17.5%). That same year, Spain (24.6%), France (17.2%), Italy (13.0%), and Greece (12.8%) together accounted for over two-thirds of the EU's aquaculture output by quantity (Eurostat, 2023).

Looking at food and beverages manufacturing, in 2022, in value terms, non-processed cheese was the leading F&B product in Greece (Eurostat, 2023).

Agrifood - Labor Force

In 2023, Greece's agricultural sector employed over 461,000 people, representing 11% of total employment, marking a 15% increase from 2021's 9.9% share (Makantasi & Valentis, 2024; Eurostat, 2023). This proportion is the third highest among EU Member States, trailing Romania (20.9%) and Bulgaria (15.5%), and more than double the EU average of 4.2% in 2020. Despite this, Greece, like other EU countries, has seen a steady decline in agriculture's share of total employment, dropping from 12.4% in 2010 to 9.9% in 2021 (Agriculture and Rural Development, 2024; Eurostat, 2023).

Family farms[1] dominate Greek agriculture, with over 99% of farms classified as family-operated, matching Romania's peak share and far exceeding the EU average of 94.9% in 2020 (Eurostat, 2023).

The agrifood labor force also extends significantly into manufacturing and services. In 2020, food and beverage processing employed 37.3% of Greece's manufacturing workforce, one of the highest concentrations in the EU (Eurostat, 2023; IOBE, 2024). Employment within F&B is concentrated in the banking sector (43%), fruits and vegetables (14%), and dairy products (10%) (IOBE, 2024).

Greece also leads the EU in F&B wholesaling, retailing, and serving, with 34.4% of employment in non-financial services tied to these activities in 2020. This sector accounted for 16% of the total value added in Greek non-financial services—the highest share among EU Member States (Eurostat, 2023).

Moreover, Greece's agricultural income trends reflect robust growth, with agricultural factor income per annual work unit rising by 11% between 2021 and 2022, slightly outpacing the EU average (Eurostat, 2023). These dynamics highlight the critical role of agrifood in Greece's labor market and broader economy.

Agrifood Trade Dynamics

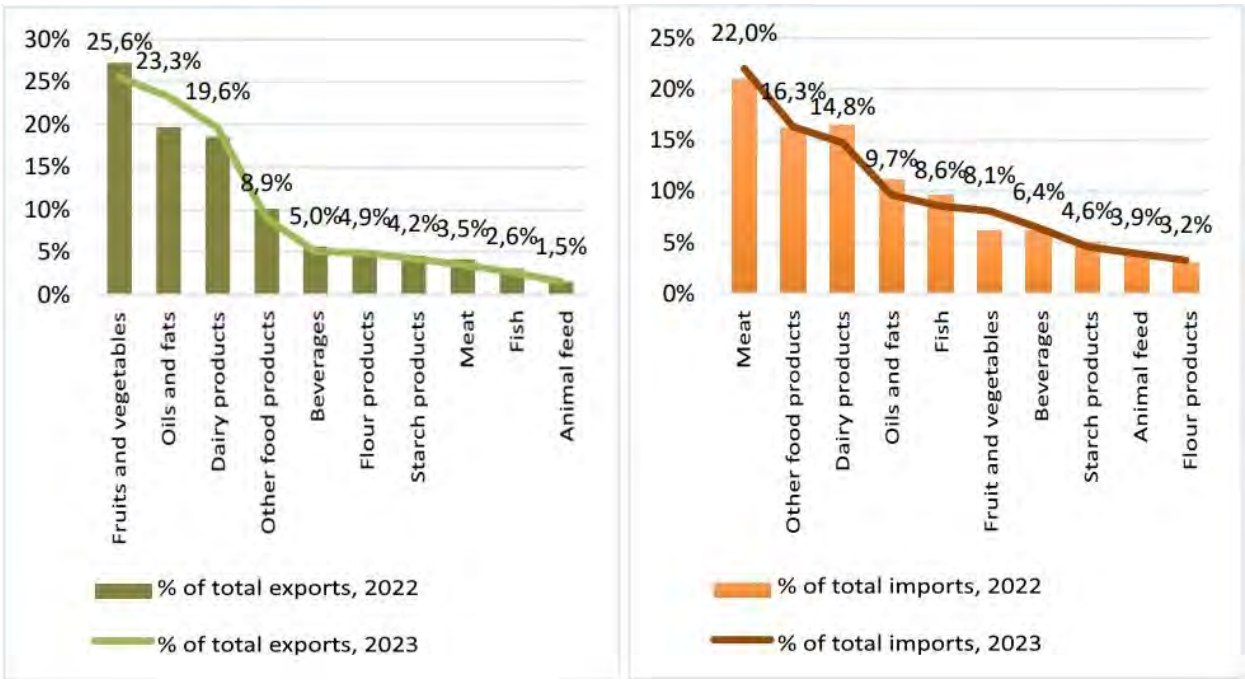
[1] Abiding by the Food and Agriculture Organization (FAO) of the United Nations definition, 'family farm' is used here to refer to any farm that is under family management and where family workers provide more than half of the agricultural labor (Eurostat, 2023).

In 2023, Greece's F&B sector saw exports rise by 12.6% to over €6.8 billion, while imports increased by 2.2% to €7.9 billion, resulting in a 34% reduced trade deficit of €1.12 billion. Exports have been increasing yearly since 2004, even during the pandemic, highlighting the growing international demand for Greek processed food and beverages. The export-import ratio improved to 86% in 2023, up from 78% in 2022, indicating a higher level of outward orientation in industry. Processed F&B accounted for 13.4% of total exports in 2023, up from 11.0% in 2022. The share of F&B imports was 9.7%, an increase from 8.3% in 2022 (IOBE, 2024; Makantasi & Valentis, 2024).

Regarding the trade balance by sector in the period 2017 to 2023, processed fruits and vegetables, and oils and fats maintained a positive trade balance throughout the period, while the meat sector recorded the highest trade deficit at €1.51 billion in 2023. Dairy products and bakery products shifted to a surplus in 2020 and 2019, respectively, with dairy at approximately €162.3 million in 2023 (IOBE, 2024).

The top export categories of 2023 were 1. processed fruits and vegetables at 25.6%, 2. oils and fats at 23.3%, and 3. dairy products comprising 19.6% of Greek F&B exports (see Figure 4). 69% of exports went to EU27 countries, while 31% were to non-EU countries. For imports, 80.7% came from EU27 countries. In exports, Greece's major trading partners were Italy (19.8%), Germany (13.8%), and the USA (8.5%), while other notable partners included the UK, Cyprus, France, Bulgaria, Spain, Netherlands, and Romania. Most imports arrived from the Netherlands (14.3%), Germany (12.6%), and Italy (10.4%), while other sources included France, Spain, Bulgaria, Belgium, Poland, Argentina, and Denmark (IOBE, 2024).

Figure 2.4: Share of sub-sectors in total foreign trade in F&B (in terms of value), 2023



Source: Eurostat, International Trade (ComExt), Data processing: IOBE (2024)

Agrifood - Industry trends

Agriculture Market Trends

1. Cereal Market: In Europe, demand for healthier cereals, particularly low-sugar and high-fiber options, is rising. Increased demand for healthier options is rising production costs,

potentially leading to higher consumer prices, although technological advancements may help mitigate these costs (Market Insights, 2024).

2. Vegetables Market: The global vegetables market is steadily growing due to heightened health and environmental awareness among consumers (Market Insights, 2024).
3. Fruit Market: While traditional fruit like apples and bananas dominate the market, there is a growing preference for exotic fruits such as dragon fruit and passion fruit in Europe. This shift is driven by health consciousness, the growth of e-commerce, and enhanced global trade (Market Insights, 2024).
4. Oil Crops Market: Demand for rapeseed oil in Europe is increasing due to its biofuel applications. The anticipated global population growth will drive food and fuel demand, while climate change concerns push for sustainable products (Market Insights, 2024).
5. Meat Market: Consumer preferences are shifting toward organic, hormone-free, and antibiotic-free meat, alongside a growing interest in plant-based alternatives due to rising health consciousness (Market Insights, 2024).
6. Milk Market: Concerns about animal welfare are increasing demand for organic and grass-fed milk. Consumers are also exploring alternative milk sources driven by dietary restrictions and health considerations (Market Insights, 2024).
7. Other Livestock Products Market: There is a trend toward organic, fresh, and ethically sourced livestock products, with consumers valuing authenticity and transparency in sourcing (Market Insights, 2024).
8. Forestry Market: Demand for sustainable wood products is rising as consumers prefer items from responsibly managed forests. This trend supports sustainable practices amid the evolving construction and paper industries (Market Insights, 2024).

Regulatory Environment and Policy Trends

1. Farm to Fork Strategy: Part of the European Green Deal aimed at making Europe climate-neutral by 2050, this strategy seeks to transition to a sustainable food system by reducing agriculture's environmental impact and promoting healthy diets. The European Commission is revising the Feed Additives Regulation to lessen reliance on deforested feed materials by encouraging EU-grown plant proteins (Eurostat, 2023).
2. CAP 2023-2027: The Common Agricultural Policy (CAP) for 2023-2027 supports EU agriculture's shift toward sustainability. Greece participates through CAP Strategic Plans designed to meet these goals while providing financial support to farmers and rural areas (European Commission, 2023).

Agrifood - Opportunities

1. Alternative proteins: As consumer preferences shift toward organic, hormone-free, and antibiotic-free meat (Market Insights, 2024), there is a significant opportunity for the alternative protein market. This sector is not just a short-term trend; it is evolving globally and becoming a key solution to climate change, biodiversity, and food security issues. The growing interest in alternative proteins reflects a collective movement among consumers, entrepreneurs, and food manufacturers to build a more regenerative food system (Ignaszewski & O'Donnell, 2024).

2. Greek CAP Strategic Plan: On 28 February 2024, the European Commission approved Greece's amended CAP Strategic Plan, aligning with the European Green Deal to foster resilient, sustainable, and digital agriculture (Agriculture and rural development, 2024; European Commission, 2023):
    - Income Support:
        - €4.3 billion for farmers' income stability, targeting arable, permanent crop, and grazing lands (€160–€283/ha).
        - €885 million to enhance small and medium farm sustainability through fairer income support distribution.
    - Organic Farming:
        - €1.4 billion to increase organic farming by 54%, including promoting organic over synthetic fertilizers.
    - Eco-Schemes:
        - €425 million annually for biodiversity, circular economy, and green practices (impacting ~3M hectares).
    - Rural Development & Young Farmers:
        - Creation of 84,000 rural jobs, including 82,000 young farmers supported through set-up aid and €140M in income supplements (2023–2027).
    - Collaboration & Innovation:
        - Over 10,000 farms are involved in supply chain organization.
        - 200,000+ participants in advisory training, and European Innovation Partnership programs for sustainable growth.

Agrifood - Challenges

The Greek agrifood sector faces several significant challenges that hinder its growth and sustainability:

1. Climate Change and Water Management: Climate change is disrupting agricultural production through reduced rainfall, increased droughts, and heat waves. The Greek agricultural sector accounts for 80-85% of total water consumption in Greece, yet it faces serious inadequacies in irrigation infrastructure and water management (Makantasi & Valentis, 2024; Market Insights, 2024).
2. Aging Farmer Population: A significant portion of farmers in Greece is aging, with 65% of farm managers being at least 55 years old, and 37.1% aged 65 or older. This demographic trend poses a risk as approximately 200,000 farmers over 65 need immediate replacement, while another 150,000 farmers aged 55-64 will need replacement within the next decade (Agriculture and rural development, 2024; Makantasi & Valentis, 2024).
3. Small and Fragmented Agricultural Holdings: The average utilized area of Greek agricultural units is only 5.3 hectares, less than one-third of the EU average of 17.1 hectares. This small size limits the benefits of modernization and results in low productivity (Makantasi & Valentis, 2024).

4. Insufficient Education and Training: A vast majority of Greek farmers lack formal agricultural education, with 94% having only practical experience and less than 1% possessing full agricultural education. This educational gap hampers their ability to adopt new technologies and practices (Makantasi & Valentis, 2024).
5. Rising Production Costs: High inflation has significantly impacted production costs, with increases in energy prices (+29%), fertilizers (+72%), and animal feed (+39%) between 2019 and 2023 (Makantasi & Valentis, 2024).
6. Investment Challenges: The economic crisis severely restricted investment in the agricultural sector, resulting in a lag in infrastructure development and technology adoption. Additionally, the small scale and fragmentation of agricultural holdings render investments in equipment and new technologies unprofitable (Makantasi & Valentis, 2024).
7. Challenges with CAP Implementation: The Common Agricultural Policy (CAP) faces challenges in Greece due to uneven distribution of support, implementation penalties, and a lack of a functioning farm advisory system (Agriculture and rural development, 2024).

These challenges collectively threaten the resilience and competitiveness of the Greek agrifood sector, necessitating targeted strategies to enhance productivity, sustainability, and economic viability.

Agrifood – Future Outlook

The agrifood sector in Greece is poised for steady growth, with the food market projected to expand by 3.73% annually from 2024 to 2029, reaching approximately $31.84 billion by 2029 (IOBE, 2024). On a global scale, agricultural prospects remain positive, driven by sustained demand for food and advances in technological innovation that promise increased efficiency. Cereals are expected to dominate markets, particularly in emerging economies, highlighting opportunities for strategic crop production. However, challenges such as climate change, water scarcity, and volatile commodity prices necessitate resilience and adaptive strategies (Market Insights, 2024).

The EU's Common Agricultural Policy (CAP) continues to shape the sector by integrating sustainability and environmental priorities into its framework. Recent CAP reforms incentivize farmers to adopt greener practices, allocate funds for conservation and biodiversity, and support rural development through enhanced infrastructure and diversified economic activities. These measures aim to stabilize agricultural markets, secure farmer livelihoods, and ensure food security. Similarly, the Common Fisheries Policy (CFP) promotes a healthier marine environment, sector profitability, and coastal community revitalization through innovation and technology (Eurostat, 2023).

In Greece, the CAP Plan heralds a transformative production model, focusing on innovation, technology adoption, and young entrepreneurship to boost competitiveness. It emphasizes securing fair farmer incomes while prioritizing the sustainable development of rural areas and reducing agriculture's environmental footprint. Together, these initiatives position Greece's agrifood sector for a dynamic and sustainable future (Agriculture and Rural Development, 2024).

2.2 Tourism - Economic Contribution

Tourism is a significant pillar of the Greek economy, contributing substantially to the country's GDP and supporting numerous industries. In 2023, the total contribution of travel and tourism to Greece's GDP amounted to €42.7 billion, nearly matching pre-pandemic levels, being just 0.5% lower than in 2019. This figure is projected to increase to €46.8 billion in 2024 (Statista, 2024). Tourism represented over 19% of Greece's GDP in 2023, ranking as the third-highest share among EU countries that year (Statista, 2024).

Leisure travel dominates Greece's tourism spending, accounting for 93.5% of total expenditures in 2023, although this marks a slight decline of 1.1 percentage points from 2019 (Statista, 2024). Greece remains a top global tourism destination, ranking 13th in global arrivals, with 34 million non-resident tourist arrivals in 2019. However, spending per visitor remains lower compared to other Western countries, highlighting potential areas for growth (Skylakaki & Benos, 2023).

The Greek tourism industry experiences significant seasonal concentration, with peak activity during the four-month period from June to September. Island regions—such as the Ionian Islands, South Aegean, and Crete—dominate the sector, capturing 60% of tourism receipts. Additionally, 60% of hotels in Greece operate restaurants, with dining contributing an average of 44.6% of hotel revenue (Skylakaki & Benos, 2023).

Tourism - Key market segments

Domestic tourism

In 2023, resident tourism in Greece saw a slight rise, with 4.9 million residents taking 8.3 million trips (+1.7% and +0.6% vs. 2022). Total expenditure increased by 3.6% to €3.45 billion, despite a 2.2% decline in nights spent (77.8 million). Personal travel dominated (96.6% of trips), with a notable increase in trips lasting 4–7 nights (+10.5%) and land transport trips (+5.8%). Non-rented accommodation (55.2% of personal trips) was the most common, primarily provided by friends and family (58.0% of these stays). For rented accommodation, hotels accounted for 62.2% of such trips, with increases in both trips (+4.1%) and nights spent (+2.3%) compared to 2022 (Hellenic Statistical Authority, 2024-c).

Inbound tourism

In 2023, Greece welcomed over 36 million inbound tourists, marking a full recovery from the COVID-19 pandemic and reaching a record high. European travelers dominated the market, with Germany and the United Kingdom being the top sources of visitors. When analyzing regional visits, Attica, which includes Athens, and the Southern Aegean, home to islands like Rhodes and Mykonos, emerged as the most popular destinations, collectively attracting nearly 15 million international visits (Statista, 2024).

Outbound tourism

While the number of international tourists to Greece has surpassed pre-pandemic levels, the recovery of the outbound tourism market has been slower. In 2023, Greek travelers abroad were still about 20% below 2019 figures. Visits to leading outbound destinations like Bulgaria and Turkey remained significantly lower than before the pandemic. Conversely, countries such as Italy and Cyprus saw an increase in Greek visitors in 2023, with Italy ranking second in terms of expenditure by Greek travelers, which was the highest recorded since 2019. Spending by Greek tourists in Cyprus also surged by 58% during the same period (Statista, 2024).

Tourism - Labor Force

The tourism sector is a vital employer in Greece, generating approximately 810,000 jobs in 2023—nearly rebounding to pre-pandemic levels. This figure is expected to rise to 860,000 jobs in 2024 and surpass one million by 2034 (Statista, 2024). In 2021, Greece had the highest share of tourism-related employment in the EU, with 25.7% of its workforce engaged in the sector, compared to 17.5% in Cyprus and 15.0% in Malta (Eurostat, 2024-e).

Although tourism offers abundant opportunities, the sector tends to attract a young workforce, often in their early career stages, and exhibits employment patterns less stable than other industries. Temporary contracts are prevalent, with 40% of tourism workers in Greece employed on such terms in 2023, compared to 12% in the broader economy. In the accommodation sector specifically, one in four employees lacked a permanent contract, and over 45% of the workforce had held their job for less than one year in Greece and Cyprus (Eurostat, 2024-e).

Job stability also varies across tourism subsectors. Air Transport offers relatively stable employment, with 14% of employees having worked for less than one year in their current role, compared to 26% in accommodation and 17% in travel agencies and tour operators. In the Greek tourism sector, 65% of employees had been with the same employer for two years or more, lower than the economy-wide average of 75% (Eurostat, 2024-e).

Compensation for tourism is notably lower than the national and EU averages. In 2020, the average hourly labor cost in Greece was €13.8, with wages averaging €11.0. However, in tourism industries—such as air transport, accommodation, and travel agencies—the hourly labor cost was €11.5, and average wages were €8.8, both significantly below the EU average (Eurostat, 2024-e).

Tourism Accommodation

Nights spent in tourist accommodation establishments[2]

In 2023, tourists spent 2.9 billion nights in EU accommodation, surpassing pre-pandemic levels for the first time since COVID-19 significantly impacted tourism (Eurostat, 2024-d). The largest markets were Spain, France, Germany, and Italy, collectively accounting for 1.8 billion nights, while Greece recorded 146 million nights, about one-third of Italy's total (431 million) (Eurostat, 2024-b).

The EU's tourism intensity, defined as nights spent per 1,000 inhabitants, was 6,556 in 2023, with mass tourism concentrated in a few regions. Notably, six EU regions exceeded 50,000 nights per 1,000 inhabitants, including Greece's Southern Aegean with the highest intensity at 117,329 nights (6.2% increase from 2022). The share of foreign tourists in Greece's major islands surpassed 80%, contributing to 62.8% of total nights spent nationally (Eurostat, 2024-d).

In terms of accommodation capacity, Italy and France held over one-third of total bed places in the EU, with Greece ranking sixth at 4.2%. Coastal accommodations attracted 1.4 billion nights (48%), with Malta having all its nights spent at coastal[3] establishments and Greece at 96% (Eurostat, 2024-a).

Popular coastal and island destinations like Southern Aegean and Ionian Islands showed high air passenger ratios per inhabitant in 2022, reflecting their appeal (Eurostat, 2024-d).

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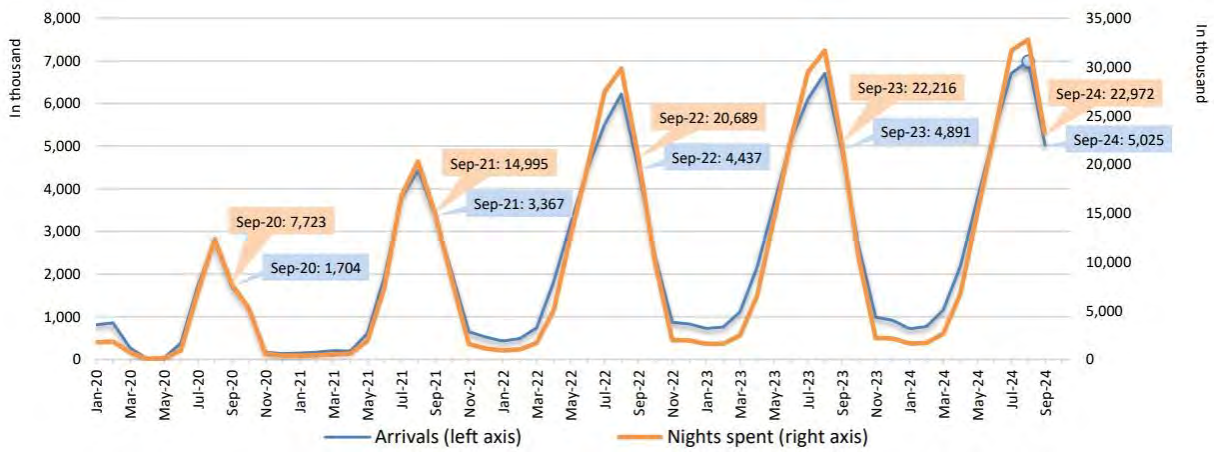
[2] Tourist accommodation includes hotels; holiday and other short-stay accommodation; camping grounds, recreational vehicle parks and trailer parks (Eurostat, 2024-b).

[3] "Coastal" is defined as any accommodation located in municipalities that are adjacent to the sea or have at least half of their territory within 10 kilometers of the coastline (Eurostat, 2024-a).

Overall, the data highlights a robust recovery and growing demand in the EU tourism sector post-pandemic.

In September 2024, Greek tourist accommodations saw 5,024,857 arrivals and 22,971,551 nights spent, marking increases of 2.7% and 3.4% respectively compared to September 2023 (see Figure 2.5). Non-residents contributed significantly, making up 82.7% of arrivals and 90.2% of nights spent, with their numbers rising by 2.9% on arrivals and 3.6% on nights spent. Resident tourists also increased slightly, with arrivals up by 1.8% and nights spent by 1.5%. The average stay across all types of tourist accommodation was 4.6 days (Hellenic Statistical Authority, 2024-a).

Figure 2.5: Monthly evolution of arrivals and nights spent in hotels, similar establishments, tourist



campsites and short-stay accommodation establishments, January 2020 - September 2024 (*)

3.

4. *Note: (*) January 2020 - December 2023 final data, January 2024- September 2024 provisional data. Source: Hellenic Statistical Authority (2024-a)*

Tourism - Industry trends

1. Online Bookings: The second quarter of 2024 witnessed a robust growth in tourism across the EU, with guests spending 208.8 million nights in short-term rental accommodations booked through platforms like Airbnb, Booking, Expedia Group, or TripAdvisor—a 16.2% increase compared to the same period in 2023 (Eurostat, 2024-c). Greece mirrored this upward trend, recording a nearly 20% rise in nights booked via online platforms, slightly surpassing the EU average. This growth underscores Greece's enduring appeal and potential to leverage digital platforms to attract more visitors (Eurostat, 2024-c).

2. Seasonality: Tourism in the EU shows strong seasonality, particularly in coastal regions like the Mediterranean and Black Sea coasts, where tourist activity is concentrated in summer months (Eurostat, 2024-b). Greece's coastal and island-rich geography places it at the heart of this trend, benefiting from high demand during peak seasons. However, the seasonal nature of tourism also highlights the need for diversification strategies to spread demand across the year.

Agritourism - Industry trends

Agritourism in Greece shows promising growth, supported by the demand for unique culinary and cultural experiences. Around 73.3% of hotel procurement involves food and beverages, and nearly 60% of Greek hoteliers prefer domestic agrifood products, citing better quality and economic support for local communities. Gastronomic tourism is gaining popularity, especially among younger travelers and food enthusiasts, who prioritize traditional and healthy cuisine. However, limited supply forces tourism businesses to broaden their definition of "local" to include products from larger regions (Skylakaki & Benos, 2023).

Tourism - Opportunities

1. EU-Funded Initiatives: EU-funded projects, such as Interreg Portolanes, enhance local tourism by fostering cross-border cooperation between Greece and Italy in maritime tourism. This initiative identified five key improvement areas: evidence-based management and data availability, realigning the management model, defining a smart and green port strategy, fostering synergies through collaborations, and tailoring promotion for increased visibility. Six Greek ports were selected for promotion and capitalization under this project, showcasing the potential of strategic EU-backed programs to elevate Greece's tourism infrastructure (TREK Development, 2023).
2. Sustainable Tourism in Protected Areas: Greece's Natura 2000 network, covering over 40% of the country's land area, offers unparalleled opportunities for sustainable tourism. These protected zones boast diverse landscapes and ecosystems, ideal for activities such as hiking, scientific research, and cultural exploration. A recent study estimates that these areas could generate €2 billion annually. However, unlocking this potential requires addressing challenges like infrastructure upgrades, strategic planning, and enhanced data collection to ensure sustainable growth (Nikolaidis, 2024).
3. Maritime and Yacht Tourism: Greece's extensive coastline, abundant islands, and favorable weather conditions create an ideal environment for maritime tourism, particularly in the yachting sector. The country boasts one of the world's largest fleets of very large yachts, attracting yachting enthusiasts from across the globe. This market contributes significantly to the local economy, boosting sectors like yacht charters, maintenance, and hospitality, while leveraging Greece's rich cultural heritage and stunning landscapes (Georgakopoulos, 2021).
4. Senior and Health Tourism: Greece stands poised to capitalize on the rising demand for senior and health tourism. With the global senior population projected to reach 2 billion by 2050, Greece offers retirees a warm, welcoming environment. Nearly 20% of seniors visit Greece annually, and many rate it better than expected, citing its sunny climate and appealing lifestyle. In health tourism, Greece already attracts 85,000 medical tourists yearly. The country's 300+ thermal springs and burgeoning wellness tourism market present lucrative opportunities. Estimates suggest health and wellness tourism could collectively add €27 billion to GDP and create over 340,000 jobs within five years. Developing infrastructure and adapting the institutional framework would further strengthen Greece's appeal in these markets (Georgakopoulos, 2019).

By leveraging EU funding, promoting sustainable practices in protected areas, advancing maritime tourism, and tapping into senior and health tourism markets, Greece can solidify its position as a premier global tourism destination.

Agritourism - Opportunities

Strengthening the connection between agrifood and tourism presents significant opportunities. Gastronomic tourism can serve as a bridge, with storytelling and immersive culinary experiences driving demand for local products. Strategic initiatives like regional quality pacts and online ordering platforms could improve collaboration. Enhancing the visibility of local specialties, supported by Greece's rich gastronomic heritage, could attract high-income tourists and elevate the country's brand as a food destination (Skylakaki & Benos, 2023).

Tourism - Challenges

1. Infrastructure Deficiencies in Tourist Ports: Greece's potential as a premier destination for yacht owners and maritime tourists is hindered by inadequate infrastructure. Despite having 168 designated "tourist ports," only 37 are operational. The development of these ports faces several obstacles (Georgakopoulos, 2021):
    - Lack of centralized oversight of the port network and inconsistent implementation of relevant legislation.
    - Absence of a comprehensive strategic plan for port development.
    - Poorly planned port locations, often based on local government decisions rather than a holistic approach.
    - Persistent issues with tender procedures, further slowing progress.
2. Challenges in Cruise Tourism: Although Greece ranks as the 4th most popular Mediterranean cruise destination, attracting over 2 million tourist arrivals annually, its revenue generation from cruising lags, placing it 8th among EU countries. Cruise tourists account for approximately 10% of arrivals but only 3% of revenue. The disparity arises from (Georgakopoulos, 2017):
    - Inadequate port facilities and infrastructure, which fail to meet the expectations of high-end cruise passengers.
    - Bureaucratic and regulatory inefficiencies, complicating operations for cruise companies and deterring potential investors.
3. Barriers to Senior and Health Tourism: Greece's aspirations in senior and health tourism are constrained by several issues (Georgakopoulos, 2019):
    - Inadequate infrastructure, including accessibility and safety features tailored for senior travelers.
    - Limited specialized services and facilities for seniors and patients with specific health needs.
    - Underdeveloped healthcare system and medical facilities, falling short of the standards required by international medical tourists.
    - Bureaucratic complexity and regulatory hurdles, discouraging investment and complicating business operations in these sectors. Addressing these issues is essential to attract and accommodate the growing global demand for senior and health tourism.

By resolving these challenges—such as upgrading port infrastructure, streamlining bureaucratic processes, and enhancing medical and senior-friendly facilities—Greece can better leverage its strengths to boost revenue and attract diverse tourist demographics.

Agritourism - Challenges

Despite its potential, the integration of Greece's agrifood sector with tourism faces significant challenges. Local producers struggle to meet the volume, diversity, and standardization needs of the tourism industry. Issues such as delayed deliveries, inconsistent availability, and higher costs compared to imported goods deter hoteliers from fully adopting domestic products. Additionally, limited direct relationships between producers and tourism establishments complicate logistics and hinder effective collaboration (Skylakaki & Benos, 2023).

Tourism – Future Outlook

Greece's tourism sector holds immense potential for growth, driven by its rich cultural heritage, natural beauty, and strategic initiatives such as EU-funded programs and sustainable tourism in protected areas. Emerging markets like maritime and yacht tourism, as well as senior and health tourism, present lucrative opportunities to diversify offerings and attract high-value visitors. However, achieving this growth requires overcoming critical challenges, including infrastructure deficiencies in tourist ports, regulatory inefficiencies, and seasonal demand concentration. By addressing these hurdles and leveraging trends like increased online bookings and sustainable practices, Greece is well-positioned to strengthen its global standing as a premier year-round tourism destination.

Agritourism – Future Outlook

Looking ahead, Greece's agrifood-tourism integration requires coordinated efforts to address supply chain inefficiencies and scale production. Establishing destination management organizations (DMOs) and online platforms could foster better collaboration between producers and tourism businesses. A unified national gastronomic identity, coupled with investments in agritourism and thematic tourism programs, has the potential to make Greece a global leader in culinary tourism, benefiting both sectors significantly (Skylakaki & Benos, 2023).

3. Greek Shipping, Logistics, Transport, and Energy Sectors Overview

3.1 Greek Shipping

Over the past year Greek shipping maintained and strengthened its global leadership, controlling more that 20% of the world's commercial fleet (Clarkson's Research, 2024). The total Greek fleet deadweight increased by 2% (Petropoulos, 2024; Clarkson's Research, 2024). However, the number of ship management companies marginally decreased, allowing growth for more midsize and large companies. It is evident that most key players significantly increased their fleet sizes and capacity in the past year. Further, they also dominate the shipyards' newbuilding orderbooks with significant investments in new, environmentally friendly vessels equipped with state-of-the-art technology, promising to invest more than 88 billion USD in the next couple of years. It is noteworthy that the top 16 companies control 25% of the Greek fleet on number of vessels and more than 40% on capacity (Clarkson's Research, 2024). The vessel orders of the top 15 companies account for 65% of the current Greek orderbook (KPMG, 2024).

On the contribution to the Greek economy front, the shipping sector generates around $40 billion in annual gross revenues and contributes approximately $14 billion in value domestically (Bank of Greece, 2024b). The port of Piraeus handled more than 5 million TEU's (twenty-foot equivalent units) of container traffic in 2023, ranking it the 29th globally and the 4th in Europe (Statista, 2024a)

The Greek shipping sector is facing several key challenges on the path to maintain its global leadership and secure future viability, which have been enhanced over the past year. Key challenges can be summarized at a) Environmental concerns and regulatory compliance, b) rapid technological change, c) shortage of skilled and talented personnel, and d) political unrests, imposed sanctions and geopolitical tensions.

a) *Environmental concerns and regulatory compliance*

The International Maritime Organization (IMO) has set stringent targets for reducing greenhouse gas emissions, which were revised by the Marine Environment Protection Committee (MEPC) imposing more stringent targets on 2023, pushing shipowners to invest in cleaner technologies and alternative fuels (MEPC, 2023). On the positive side, the Greek fleet's average age stands consistently lower than the global average, making it reliable and competitive, as well as more resilient in the upcoming challenges on regulatory compliance with the IMO's decarbonization targets. While Greece stands above China and Japan in DWT controlled, it emitted less carbon dioxide than both countries (KPMG, 2024). However, compliance with the IMO decarbonization targets requires substantial financial investment and operational adjustments. Greek shipowners are actively seeking solutions to meet these standards, including retrofitting existing vessels with scrubbers and exploring the use of LNG and ammonia as alternative fuels, as indicated by the present fleet and orderbook of dual fuel vessels (26% of all new vessels are ordered ready for dual fuel use). The maritime industry is reluctant to proceed with the high investments due to the technological uncertainties, lack of maturity, availability and development of a reliable supply chain of such decarbonization technologies.

b) *Rapid Technological Change*

The rapid pace of technological change, especially apparent on the AI front over the past year, presents both opportunities and challenges for the Greek Maritime Industry. Digitalization, automation, and the adoption of smart shipping technologies are transforming operations, enhancing efficiency, and improving safety (KPMG, 2024). The growth of AI technologies and infrastructure provides additional opportunities to develop a competitive advantage (Danaos, 2024; Metis, 2024). However, integrating these technologies requires significant investment and expertise. The dominant Greek shipping companies are already navigating the complexities of implementing new systems, training personnel, and ensuring cybersecurity. The threat is posed for the medium to small companies which are unable to keep up with the necessary adoption of such advanced tools. The need to stay competitive in a technologically advanced global market adds pressure to continuously innovate and adapt.

c) *Shortage of skilled and talented personnel*

The Greek maritime industry supports the local labor providing about 150,000 jobs directly and indirectly, including high-paying positions in ship management, maritime law, and other related fields (Bank of Greece, 2024b). However, the industry is experiencing a shortage of skilled and talented personnel, exacerbated by the demanding nature of maritime work and the aging workforce. The rapid technological changes and the introduction of AI are further enhancing the necessity to update the required set of skills and competencies. Attracting and retaining young talent is challenging due to the perception of shipping as a less attractive career option compared to other industries. The industry is investing in maritime education and training programs to address this gap. Without undermining other efforts, a notable example is the establishment of the Tsakos Enhanced Education Nautical Studies School in Chios offering secondary and post-secondary maritime education (TEENS, 2024).

In response to shortage of talented personnel, the Greek government channeled significant portion of the 2024 budget of the Ministry of Maritime Affairs and Insular Policy to upgrade maritime training and education, accelerating sustainability actions, enhancing port safety and digitalizing procedures. Minister Christos Stylianidis declared 2024 as "The Year of Maritime Education" during the budget session in parliament (GTP, 2023).

d) *Political Unrest, Imposed Sanctions, and Geopolitical Tensions*

Geopolitical tensions and imposed sanctions, significantly impact the maritime industry. The Greek shipping industry could not remain unaffected. The sanctions imposed to Russia, following the 2022 invasion to Ukraine, the unrest and instability of the Eastern Mediterranean and the terrorist attacks at the Red Sea are significantly affected shipping costs, transit time and demand for ton-miles as products are transported from further away. Greek shipowners have been affected by these tensions and restrictions as several established relationships and chartering contracts could not be fulfilled. Greek companies that had been traditionally key partners with such certain areas need to divert their fleet to other freight markets.

Within the same context, security of the Greek fleet was also affected. Despite Greece's smooth political relations and peaceful stance, the Greek fleet has been threatened and attacked, with notable example the missile attack against M/T Sounion (Strategic Communications, 2024).

3.2 Logistics and Transport

There was a significant rise of the Greek Supply Chain sector in the past year as Greece's Logistics Performance Index was ranked 23rd by the World Bank (from 42nd in 2018 which was the last time the survey was carried out). This ranking is based on six criteria, namely the level of infrastructure, customs clearance procedures, quality of services provided, ability to control and record goods, existence of competitive prices and time of delivery/receipt of goods. (Delevegos, 2023)

However, despite the favorable outcome of the LPI, Greek management consultants possess negative sentiment for the logistics sector (Supply Chain, 2024 Nov 5th). The third quarter of 2024 saw a new downward shift in management consultants' expectations for the course of the Greek economy over the next 12 months. Specifically, the General Index GRe+1, which is the average of the Indices of Economic Circumstances and Production Factors, stood at 15.4% at the end of the third quarter from 22.3% the previous year (Capital, 2024), with the annual decline being much greater. Noteworthy is that in the third quarter of 2023, the relevant index had a value of 25.8%. The deterioration in expectations can be attributed equally to the marginal estimates for the fundamental economic figures and those for the low production factors. The concern about the course of the major economies of the eurozone leads to a negative expectation about the Greek production and supply chain sector, which is further established by the persistent inflation rate as well as lower private investments. On the contrary, there was a slight improvement in expectations for unemployment and mostly for exports of products and services.

According to the Association of Management Consulting Firms Barometer for the economy (SEGM, 2024), in 2024 the three main restraining factors in business activity continued to be related to the weaknesses of the public sector. Inefficient public administration is in first place, followed by the functioning of the judiciary. In third place are the discontinuities observed in state functioning. Next are the obstacles raised by the tax regime, namely its frequent changes and high taxation.

3.2.1 Air Transport

The update for Greece's air transport sector is positive on both the infrastructure and throughput fronts. Greece's largest airline Aegean Air and the global leader in civil aviation training CAE established in 2023 a state-of-the-art Flight Training Center in South-East Europe, stationed at the Athens International Airport. The training center is part of Aegean's 85,000m2 technical base and it is powered by green energy primarily supplied by photovoltaic panels which generate up to 3MW or 4.4 GWh of electricity annually. This ultramodern training center will introduce for the first time flight training and technical support at a national level enhancing Greece's position in the aviation industry.

Greece has 45 airports, 15 of which can attract international flights. In terms of passenger traffic, Athens International Airport (AIA), which is the nation's primary aviation hub, handled approximately 28 million passengers in 2023, a 10.2% increase from 2022 and up to end of November of 2024 approx. 30 million passengers a 13% increase since the corresponding period of 2023 (Athens International Airport, 2024). Regional airports also saw significant growth due to increased tourism and investments in infrastructure.

In terms of air freight AIA processed around 94,000 tons of cargo in 2023 a 7.4% decrease with respect to 2022 levels but at par with the 2019 (pre covid) levels (Athens International Airport,

2024). For the first half of 2024 the total cargo via AIA reached 80,500 tons illustrating a significant increase of 35% with respect to the corresponding 2023 period.

3.2.2 Rail Transport

Greek rail transport recorded the largest freight transport decrease in 2023 among EU countries by -53.8% compared to 2022 (Eurostat, 2023) registering approximately 500,000 tons of cargo. The share of international transport in total rail freight transport in the various countries is strongly linked to their geographical position within Europe. The countries which registered the highest shares of international transport are in the key corridors within the European market. Greece registered the highest share of international transport on total transport performance in 2023, with 95.0% essentially indicating that international freight rail transport dominates the Greek rail freight market.

While all EU countries recorded an increase in rail passenger transport performance, Greece recorded a decrease by 39.7% in passenger traffic as well. It is worth noting that Greece is recording passenger rail of 0.7 billion Passenger-kilometers which is the 5th lowest in Europe.

Passenger and freight rail transport decline can be primarily attributed to the damage of its rail network caused by Storm Daniel in September and the decreased public trust due to the Tempi accident on 28th of February 2023 (Eurostat, 2024a). The rail network is hindered by infrastructure deficiencies with the automated traffic control system remaining inoperative or incomplete in several sections. Lack of personnel at infrastructure operator OSE has resulted in subpar maintenance of the network, train operator Hellenic Train says (Konti, 2024). OSE, on its part, accuses Hellenic Train of inadequate maintenance of the rolling stock. As a result, the four daily trains running between Athens and Thessaloniki are only running at 30% to 50% capacity.

3.2.3 Road Transport

A decrease is observed in the total weight of goods carried by road freight vehicles was observed in Greece in 2023 compared to 2022. Specifically, in 2023, the weight of goods carried by road transport vehicles for own account amounted to 161,445.1 k-tons thus recording a 10.4% decrease in comparison with 2022 (Hellenic Statistical Authority, 2024). In 2023, the ton-kilometers performed by road transport vehicles for their own account totaled 4,044,644.3 thousand, marking a 27.0% decrease compared to 2022. Conversely, the weight of goods transported by road vehicles for hire or reward reached 114,173.3 thousand tons, reflecting a 3.8% increase from 2022. The ton-kilometers carried out by these vehicles in 2023 amounted to 15,976,152.0 thousand, up by 2.1% from 15,647,852.4 in 2022. It should be noted that the trucking industry is highly fragmented, consisting primarily of small companies and owner-driver haulers, with the average fleet size being 1,5 trucks per provider.

3.2.4 Public urban transport

In terms of public transport, the total number of passengers exceed 6 million within 2024 with the projected revenue to be estimated to reach US$1.14bn (Statista, 2024b). The public transport market is expected to grow annually at a rate of 1.70% between 2024 and 2029, resulting in a projected market volume of US$1.24bn by 2029. The newly established metro in Thessaloniki has attracted significant attention, expecting to strengthen the position of public transport.

3.2.5 Electric Vehicles

In terms of Electric Vehicles, the market indicates a significant annual increase in the new fleet registrations, primarily driven by governmental incentives and despite the lack of extensive charging infrastructure. The best year over year monthly change was October of 2024 with 918 Battery Electric vehicles registrations over 416 in October 2023, reflecting an outstanding 160,64% increase (Michailidis, 2024). However, Greece remains at the lowest range of EU with respect to EV with only 1 in 279 vehicles being fully electric.

3.2.6 Governmental response

To address the deficiencies the Ministry of Transport and Infrastructure has set 8 priorities aiming to strengthen transport connectivity and infrastructure resilience. Minister of Infrastructure and Transport, Mr. Christos Staikouras, made explicit reference on his keynote address at the annual Capital Link Investment Conference for Greece, entitled "26th Annual Capital Link Invest in Greece Forum", in New York on December 9th, 2024 (Capital Link, 2024). The 8 priorities are summarized as follows:

1st Priority: Implementation of many large-scale projects throughout the country

n 2024, significant infrastructure projects were completed with the valuable contribution of the private sector. These included the road connection from Aktio to Amvrakia, the main road axis of Lesvos, and a substantial section of the Central Greece motorway, E65. Additionally, a new Concession Agreement for the Attica Motorway was signed, ensuring its uninterrupted operation under the new Concessionaire.

The Thessaloniki Metro was also put into operation in December 2024, enhancing the city's appeal and boosting its self-confidence. The extension of the Metro to Kalamaria is progressing well and is expected to be completed within a year. The Patras - Pyrgos motorway is on track for completion in 2025, and the construction of the Thessaloniki Flyover is advancing rapidly.

The contract for the road axis from Ioannina to Kakavia is to be signed. The new Kastelli airport has reached a 40% completion rate, and the construction of the Northern Road Axis of Crete is making steady progress. Work has commenced, studies are underway, expropriation procedures are advancing, and the contractual documents for the main subproject from Chania to Heraklion will be finalized within early 2025.

2nd Priority: Implementation of major flood control and irrigation projects

In 2024, contracts were signed, and tenders announced for dams and flood control projects in Messinia, Aitoloakarnania, Lesvos, Rethymno, and Attica. Additionally, contracts were signed and irrigation projects completed in Argolida, Imathia, Phthiotis, Halkidiki, Serres, Kastoria, Larissa, Trikala, Magnesia, and Corinth.

3rd Priority: Maintenance of existing infrastructure projects

The "Smart Bridges" project, implemented through the Technical Chamber of Greece, aims to upgrade road bridges across all regions of the country, as well as 100 railway bridges, using innovative methods and modern tools. Concurrently, efforts will be made to restore the road network damaged by storm Daniel. These efforts will focus on ensuring functionality, safety, and climate resilience, with interventions at a minimum of 200 points across 2,100 km of the regional road network in six prefectures.

4th Priority: Reform of the Greek railway

The railway system has long-standing deficiencies and inconsistencies that require a systematic, persistent, and long-term effort to address. Progress is being made in the right direction with the implementation of an action plan for railway safety and interoperability, agreed upon with the European Commission. The Organizational Reform of the Railway Sector, which involves creating a new, unified, modern public body to fully assume the role, obligations, and responsibilities of the Railway Infrastructure Manager, is currently under public consultation, with the law expected to pass by the end of the year. In October, a contract was signed with the European Investment Bank (EIB) for the preparation of the Railway Strategy and the Multiannual Investment Program. Additionally, Greece is now participating in new railway corridors, such as the "3 SEAS" (Baltic Sea - Black Sea - Aegean Sea) and "Western Balkans - Eastern Mediterranean." For the first time in recent decades, 1.5 billion euros have been absorbed for various projects, including the rehabilitation of the railway network in Central Greece, the upgrading of the railway line in Macedonia, the construction of a new single line connecting the port of Kavala with the railway network, and the upgrading of the suburban railway in Western Attica and Western Thessaloniki.

5th Priority: Renewal of the city bus fleet

Currently, 270 new vehicles, primarily electric buses, are operating in Athens, with a total of 950 expected by July 2025. Additionally, a new tender has been announced for the procurement of more buses equipped with anti-pollution technology.

6th Priority: Promotion of electromobility

Four related flexible programs promoting the purchase of electric vehicles are currently underway, offering significant subsidies for individuals and businesses. Over the last two years, a total of 52 million euros has been allocated to subsidize the purchase of 19,000 vehicles. Additionally, the number of publicly available charging points has increased from 73 in 2019 to 6,700. The Ministry is also focusing on the sustainable design of transport systems, introducing Sustainable Urban Mobility Plans as the primary planning tool for municipalities and regional authorities.

7th Priority: Strengthening road safety in the territory

Among other initiatives, the sanctions framework of the Road Traffic Code is being modernized. The National Road Safety Observatory has been established, and efforts are underway to launch the digital recording of violations and the effective collection of fines.

8th Priority: Finding funds for the implementation of all the above projects

In close collaboration with the Ministry of National Economy and Finance, initiatives are underway to identify and secure sources of funding and financial instruments. This includes utilizing national and European funds, with contributions from the private sector through concessions and Public-Private Partnerships. The sources of funding include:

- Funds from both the national and co-financed parts of the new programming period
- The Recovery and Resilience Fund, through existing allocations and reallocation of resources
- The EU Solidarity Fund, for repairing damage in areas affected by natural disasters

- The Connecting Europe Facility, specifically for restructuring and modernizing the railway network
- Loans from the European Investment Bank and the Council of Europe Development Bank
- Finance from a much healthier and more stable banking sector over the last five years
- Utilization of the fiscal space has been steadily created in the State Budget over the past five years.

3.4 Energy

3.4.1 Power Generation

The Greek Energy Mix for electricity generation in 2023 was dominated by Natural Gas 31.7%, followed closely by renewable sources such as wind (22.1%) and solar (18.9%) (Statista, 2024c). The use of coal has diminished but still exists at a rate of 9.6%, while other fossil fuels are utilized at a rate of 8.7%. The electricity generation mix is supplemented by Hydropower at 7.9% and bioenergy at 1.1%. It becomes evident that Greek electricity generation relies almost equally on fossil fuels and renewable sources of energy. Wind power generation in Greece remains a dominant contributor, despite the decrease in EU caused by lower wind speeds (Tsafos, 2024). The Aegean Sea breeze maintains a constant source of energy for the Greek electricity market. Despite the extensive use of renewable energy sources, the price of electricity in Greece remains above the EU average for 2024 (Eurostat, 2024b). Notably, the electricity price for household consumers dropped by approximately 8% in 2024 compared to 2023.

3.4.2 Electricity Demand and Consumption

An ambitious plan to record real-time electricity demand and consumption was launched by the Hellenic Electricity Distribution Network Operator S.A. (HEDNO-DEDDIE) (Fintikakis, 2024). A series of automated digital smart metering stations, coupled with fiber optic connectivity in urban areas and mobile connectivity in rural areas, was introduced to monitor consumption, reduce demand elasticity, and consequently control pricing. The first batch of approximately 360,000 meters has already been installed, and a larger tender for the installation of approximately 7.2 million metering stations is pending. The plan is to install approximately 800,000 to 1,000,000 metering stations per year from 2025 to 2030. Entities in the broader public sector, low-voltage professionals, and consumers with large monthly bills, who now have smart meters, will be able to make use of dynamic tariffs and transfer part of their demand to midday hours, taking advantage of the very low prices due to photovoltaics.

3.4.3 Power Storage and Distribution

Greece has been placed in an advantageous position following the successful implementation and operation of the Floating Storage and Regasification Unit (FSRU) Alexandroupolis in early October 2024 (Kostadima, 2024). Greece is becoming a hub for natural gas imports in southeastern Europe. The first five cargoes are already secured, which will keep the FSRU busy until the end of February 2025, contributing to the energy security of the area.

Further, Greece is running a 1 GW program targeting standalone, front-of-the-meter batteries. Greece has already conducted two tenders, awarding about 700 MW of battery storage projects (Tsagas, 2024). A call for the program's third tender, targeting specifically battery systems in former coal mining regions, is imminent. Awarded projects under the 1 GW program receive public subsidy support in the form of capital expenditure and operational expenditure subsidies. To further enhance the energy storage market, a new law (Law 5106/2024) was passed by the Greek parliament at the end of April 2024, allowing the government to hold auctions for renewable energy plants willing to accept higher power curtailment rates than usual and plants that include energy storage systems. The goal is to add 1.5 GW to 2 GW in total in batteries, while 500 MW more would be installed through a support program for businesses soon. Total battery capacity is projected to reach around 3.5 GW before 2030.

4. Greek Banking sector Overview

4.1 Introduction

The trajectory of Greek banks over the past decade is a testament to resilience and transformation. Emerging from one of the most severe financial crises in modern history, these institutions have weathered turbulent times characterized by economic contraction, political uncertainty, and a burden of non-performing loans that once threatened their very existence. Today, Greek banks stand at the cusp of a new era, defined by financial stability, enhanced profitability, and a rekindled sense of trust from both domestic and international stakeholders.

The restoration of stability in the banking sector has far-reaching implications for Greece's broader economic recovery. A significant reduction in non-performing loans, bolstered by structural reforms and innovative asset management programs, has revitalized the balance sheets of major banks. These efforts have not only restored their capacity to allocate capital effectively but also positioned them as key enablers of growth in sectors aligned with national priorities, such as green and digital investments under the National Recovery and Resilience Plan.

This section delves into the pivotal aspects of Greek banks' journey back to normalcy. It begins by examining their financial performance, highlighting key drivers of profitability and capital structure improvements. It then explores their achievements with non-performing loans, the transformative role of government-backed initiatives, and the evolving landscape of legal and regulatory frameworks. Furthermore, the section considers the implications of broader economic recovery plans, the privatization of the banking sector. The section concludes with the strategic steps needed to ensure long-term resilience and public trust.

By shedding light on these interconnected developments, the report seeks to provide a comprehensive understanding of how Greek banks have redefined themselves as central pillars of economic progress. The revival of banks comes at a pivotal moment as Greece prepares to tackle new challenges in competitiveness, and the twin transitions to a digital and a greener economy.

4.2 Financial Performance

After a prolonged period of financial turmoil, Greek banks have finally returned to normality. Their financial performance is significantly improved as indicated by the recent announcements for profits. In the first half of 2024, post-tax profits reached €2.3 billion, up from €1.9 billion in the same period the previous year. Based on that, Greek banks are on track to achieve historical highs in profitability for 2024. Collectively, net profits are projected to reach approximately €4.5 billion, the best performance in 11 years. [4] This growth was driven by increased net interest and fee income, particularly from payment transactions and asset management activities. Following these positive outcomes, the European Central Bank approved dividend distribution by all four major Greek banks for the first time in 16 years. Alpha Bank will return to stock investors €122 million, representing 20% of its 2023 profits, Eurobank and National Bank of Greece will pay €342 million and €332 million respectively, representing 30% of their 2023 net profit and finally Piraeus Bank will distribute €79 million, corresponding to 10% of its 2023 net profit.

Beyond the dividends to stockholders, the improvement in profitability has some further implications for banks. Greek banks hold around €19 billion in Deferred Tax Assets (DTAs), originated from losses incurred during the Greek debt crisis, which represent approximately 6% of

[4] https://www.ot.gr/2024/08/27/english-edition/restructuring-of-greek-banks-wraps-up-in-2024/

their total assets. The largest proportion of these DTAs are guaranteed by the government, effectively making them fully monetizable, independent of future profitability. As a result, €15 billion of these are recognized as Core Equity Tier 1 (CET1) capital, known as DTCs. This amount constitutes more than 70% of the banks' regulatory capital, which is considerably higher than in other European banks. DTCs are economically valued based on the potential discount banks would accept if they could convert DTCs into cash today. This discount is estimated to be between 15% and 23%, accounting for the capital cost of holding DTCs and the lost income opportunity. As a result, the economic value of DTCs is assessed at €0.77 to €0.85 per €1 DTC.[5] DTCs amortization schedule extends until 2041, but banks could voluntarily accelerate this process. Accelerating DTC amortization would reduce their balances faster, providing greater capital flexibility and potentially enabling banks to increase capital distributions, pending regulatory approval.

Another sign of normalization, which summarizes all the positive news, is the Greek banks' credit rating. Standing at BB+, with a positive outlook for the systemic four banks, it is only one grade below the investment grade and the positive outlook indicates potential for future upgrades soon. Achieving an investment grade rating would have important implications, lowering bank's cost of capital and enhancing their ability to raise money from capital markets.

4.3 Non-Performing Loans

At the height of the financial crisis, Non-Performing Loans (NPLs) of Greek banks peaked at €107 billion in 2016, representing approximately 50% of total loans. By 2024, this figure had been reduced significantly to below €18 billion, with some banks now reporting NPL ratios of less than 5%, approaching the European average of 2%-3%.[6] This development has allowed the Greek banks to improve their profitability and regain access to international capital markets. But the most important consequence is that banks can finally perform their main function, that is, allocating capital via new loans contributing to the economic recovery of the country.

This substantial reduction in NPLs has been driven by several factors. Undoubtedly, the Hercules Asset Protection Scheme (HAPS) launched in 2019 has played a central role. HAPS allowed Greek banks to securitize bad loans, transferring them off their balance sheets by selling them to investors. Under this scheme, the Greek government provided state guarantees for senior tranches of NPL portfolios, making the securitization process more attractive to private investors. Following similar schemes in other European countries, particularly Italy's GACS program, the success of HAPS is attributed to its simplicity and transparency. By the end of 2023, Greek banks had securitized more than €55 billion worth of NPLs through HAPS.

In addition to securitizations under HAPS, Greek banks have actively sold portfolios of NPL to international investors and specialized funds. These transactions have been facilitated by improvements in the legal framework, particularly the overhaul of the Greek insolvency code in 2020, which streamlined the process for managing distressed assets and recovering value from bad loans. The sale of NPL portfolios directly to investors, albeit smaller in magnitude, has contributed to the NPLs reduction.

[5] Demystifying DTCs: The Path to Higher Payouts by Greek Banks, JP Morgan, CEEMEA Equity Research 2024
[6] https://www.bankofgreece.gr/Publications/FINANCIAL_STABILITY_REVIEW_EXECUTIVE_SUMMARY_APRIL_2024.pdf

Another factor contributing to the reduction of NPLs is the reform of Greece's legal and judicial frameworks related to insolvency and foreclosure procedures. The introduction of a more efficient insolvency code and fast-track foreclosure processes has enabled banks to resolve bad loans more quickly and recover collateral in a timelier manner. The reformed system reduces delays in the court system and allows for the swift execution of foreclosure proceedings when borrowers fail to meet their obligations. At the same time, the out-of-court workouts mechanism that facilitates negotiations between debtors and creditors without the need for lengthy court processes. Moreover, the electronic auction platform facilitates the conduct of foreclosures, ensuring transparency and efficiency in the auctioning process. These improvements have enhanced the predictability of loan recovery and reduced the uncertainty associated with managing NPLs, making it easier for banks to resolve bad loans.

Finally, Greece's economic recovery, aided by the National Recovery and Resilience Plan (NRRP) and improving macroeconomic conditions, has positively impacted borrowers' ability to service their debts (see section below for more info about NRRP). GDP growth, declining unemployment, and increasing investments have collectively contributed to enhanced borrower solvency, reducing the formation of new NPLs and aiding the resolution of existing ones.

Apart from the macroeconomic factors, Greek banks have employed a variety of internal strategies to reduce NPLs, including enhanced loan restructuring efforts, early intervention programs for distressed borrowers, and increased provisions for bad loans. The restructuring efforts have also allowed banks to recover a portion of bad loans through renegotiated terms, while provisioning has ensured that banks are adequately buffered against potential losses.

These efforts, supported by the government initiatives, macro-economic developments and legal reforms, have yielded impressive results to individual banks. Alpha Bank has reduced its NPL ratio to around 3.7% by 2024, down from more than 40% in 2016. The bank was one of the first to leverage the HAPS scheme and has continued to pursue aggressive NPL sales and restructuring. Eurobank's NPL ratio has fallen below 4%, following the completion of multiple securitizations and portfolio sales. The bank has also focused on cleaning up its balance sheet through restructuring and provisioning. National Bank of Greece reduced its NPL ratio to approximately 4.2% in 2024, benefiting from securitizations and targeted sales of NPL portfolios. National Bank of Greece's latest securitization project known as Frontier II, included a €1.5 billion portfolio of primarily secured NPLs utilizing the HAPS framework to enhance investor confidence. Finally, Piraeus Bank, once the most burdened with NPLs, has successfully lowered its NPL ratio to below 5% as of 2024. The latest securitization of Piraeus Bank, named Senna, involved a €300 million NPL portfolio of small-sized mortgages, consumer, and small business loans bought by Intrum AB.

4.4 National Recovery and Resilience Plan

In response to the economic challenges brought by the pandemic, the EU established in 2021 the Recovery and Resilience Facility (the RRF) aiming to increase private investment, promote structural reforms and improve the competitiveness of the European economies. This initiative led to Greece launching the National Recovery and Resilience Plan (NRRP).

The plan provisions €12.7 billion in loans to private investments, significantly enhancing the lending capacity of Greek banks. The total impact on bank lending is higher because the RRF loans cover a maximum of 50% of the total eligible investment cost, while at least 30% of the total eligible investment cost must be covered through additional loans from commercial banks (co-financing loans). Therefore, the total new loans could reach €16.5 billion. This figure equals to

21% of the current stock of loans to the private sector by Greek banks that stood at approximately €77.98 billion (as of September 2024). In other words, it represents a substantial increase in new financing available to businesses and individuals, and it is expected to have multiple positive effects on both businesses and banks.

By boosting economic growth and increasing the competitiveness of Greek businesses, it will improve the banks' loan portfolios, enhance their profitability and reduce even further the NPLs. Another positive side effect is that the economic stability fostered by the NRRP has created favorable conditions for the privatization of state-held bank shares (see next). Finally, the NRRP emphasizes investments in green and digital sectors. By financing projects that align with these priorities, banks will be able to diversify their portfolios and invest in sectors with a promising outlook. At the same time, facilitating the transition to a more sustainable and technologically advanced economy would help these banks achieve their Environmental and Social (ES) targets.

4.5 Privatization

In October 2024, the HFSF completed the sale of its stake in the National Bank of Greece, marking a significant step toward full privatization of the banking sector. The HFSF's divestment signals a return to normality, while the increased interest of both domestic and international investors confirms the positive outlook of Greek banks. Privatization is expected to have some important implications on the operations and performance of Greek banks.

For example, banks will face heightened scrutiny from investors who expect strong financial returns and competitive performance. Unlike HFSF ownership, where broader economic or social goals may influence decision-making, private shareholders prioritize profitability and efficiency. This shift could lead to higher pressure on bank management to streamline operations, cut costs, or seek rapid returns. While beneficial in some respects, it may also impel banks to take more risks.

HFSF divestment may also pave the way for mergers and acquisitions either between domestic banks or, more likely, with other European counterparties. For example, in November 2023, UniCredit purchased a 9% stake in Alpha Services and Holdings S.A., the parent company of Alpha Bank from the Hellenic Financial Stability Fund (HFSF). Other similar collaborations may also arise soon. With the four systemic banks currently holding 95% of market share, further consolidation is likely to hurt competition. However, strategic partnerships with foreign banks could help the domestic banks in many ways. They could enhance banks' capital structure through equity investments, strengthening their balance sheets and reducing their dependence on DTCs. Partnerships with foreign banks can also facilitate the transfer of know-how in technology, e.g., digital banking platforms or AI-driven analytics, and cybersecurity, enhancing customer experience and improving efficiency. Lastly, strategic partnerships could allow Greek banks to explore cross-border banking opportunities, such as joint ventures in neighboring countries. This geographical diversification can enhance profitability and mitigate risks associated with domestic market fluctuations. Such a development would be in line with the recent report "EU competitiveness: Looking ahead" (the Draghi Report) which calls for integration of capital markets and the completion of the banking union. The Draghi Report identifies the current fragmented banking system as a barrier to efficient capital allocation and economic resilience and it advocates regulatory interventions to foster cross-border banking cooperation.

4.6 Strategic actions to bolster Greek banks resilience

While the outlook of Greek banks has recently changed to positive, several challenges lie ahead. The Greek debt crisis that started in 2009 and lasted for over a decade, has inflicted a significant harm on the behavior and confidence of the Greek society. Greek banks need to enact targeted actions to foster a strong credit culture and to bolster the public trust on banking. This, in turn, will create a more stable lending environment, which is crucial for the long-term health and growth of the sector.

A major obstacle to fostering a credit culture is the general lack of financial literacy among consumers. Many borrowers do not fully understand the terms of loan agreements or the long-term impacts of debt. Often, this illiteracy leads to overborrowing with negative implications for people and lenders. Empowering consumers with knowledge to make more informed decisions about their personal finances will enhance long-term creditworthiness and reduce future default rates. Specific actions could include financial advice to existing customers to help them manage their debts, as well as educational programs delivered by bank experts through schools or online platforms.

Another important step is cooperation in data sharing. For a long period, the country lacked a central credit reporting system which would inform lenders about consumers' credit histories and indebtedness. Building a national credit registry system would have a positive impact in multiple ways. Banks will benefit from better assessment of creditworthy customers and a more accurate measurement of their loan portfolio risks. A credit registry would also foster a credit culture among people where maintaining a good credit score will be rewarded with favorable lending terms. Incentivizing consumers to maintain good financial habits will foster a resilient and sustainable private credit market.

Moreover, trust in the banking sector was eroded during the financial crisis, and rebuilding is key to increasing consumer confidence. The relationship between the Greek society and its banks was especially hurt by practices adopted to boost the collection of unpaid debt. People were also taken by surprise when banks evoked special terms and conditions of their loan contracts which they were unaware of before the crisis. To earn back the public's trust, banks need to opt for transparent lending practices and ensure customers are clearly informed about the terms, fees, payment commissions or any other hidden costs and risks. Enhanced transparency, along with clearer communication, will improve customer satisfaction leading to long-term and profitable bank-borrower relationships.

Finally, banks could benefit from an improved relationship with small and medium enterprises (SMEs) by alleviating any hurdles in their financing. SME's role in the Greek economy is key and so is their impact on the welfare of the society at large. Banks should help these businesses to mitigate the economic uncertainties, to complete their digital transformation and to navigate their transition to the green economy. That would require launching specialized credit products that incorporate risk-sharing mechanisms, contingent planning, assistance in accessing new markets and performance-based incentives that would promote the competitiveness of SMEs. These products should be combined with non-financial services including advisory support for sound financial management, good governance practices and the adoption of new technologies.

The word "*credit*" has its origins in the Latin word "*credere*" meaning "*to trust*". Over time, the term evolved to refer to someone's capacity to borrow based on the trust that creditors have in their ability to pay back. The above strategic actions are indicative of how banks could re-establish the meaning of this word for the benefit and the prosperity of the Greek society.

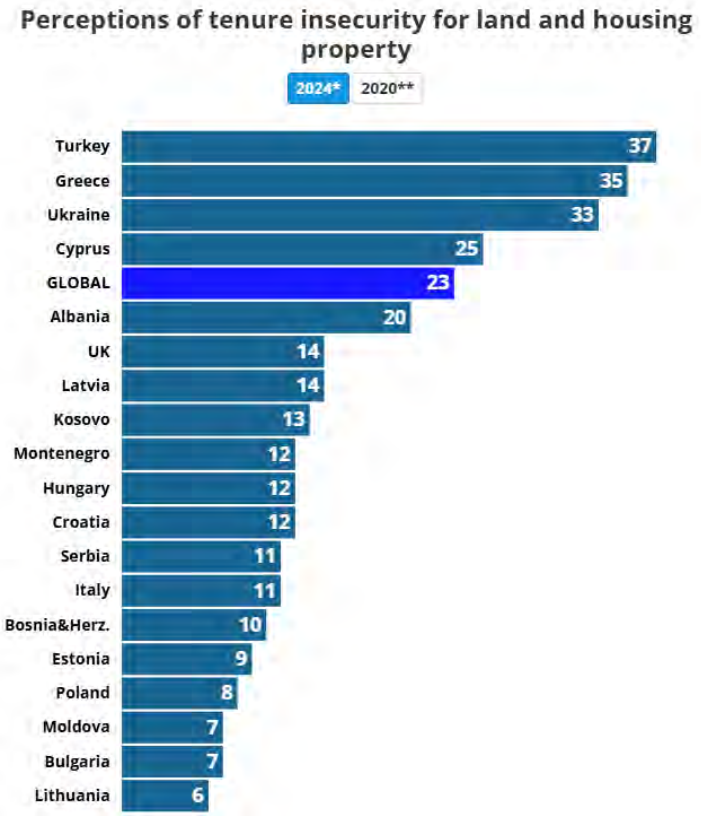
5. Greek Housing Sector Overview

Housing represents a significant challenge for the Greek economy at present. This issue is paying considerable attention to public discussion, as in recent years both rental and purchase costs are constantly rising.

Data from the Bank of Greece reveals that housing prices in Attica have increased by 88% since 2017, while nationwide prices have risen by 69%. Similarly, rental prices have followed this upward trend, with the increase exceeding 35% since 2019 (data from the Spitogatos housing portal).

The situation is even more difficult if we consider the relatively low minimum wage in Greece, one of the lowest in Europe, which has had only modest increases in the recent years. According to Eurostat, Greek households allocate 35.2% of their income to housing cost, the highest percentage in Europe. The European average is 19.7%, highlighting in an even higher extend the problem that Greek citizens are facing.

At the same time according to Prindex's 2024 report which evaluates the security of land and housing ownership, approximately 1.1 billion adults worldwide (representing 23% of the global population) feel insecure about their property or land rights. As it shown below Greece is second in the ranking.



Source: Prindex's 2024 Report

The causes of the current housing crisis in Greece are multiple. A key factor contributing to the housing shortage is the persistent challenges faced by the construction sector following the 2008

financial crisis and its aftermath. Since that time, the supply of new housing has remained limited, something that created the imbalance between supply and demand.

Fortunately, the construction sector experienced a revival following the COVID-19 pandemic, largely due to supportive government policies such as the suspension of VAT tax in the industry. This recovery has not been sufficient to address the growing demand for housing. Still, the demand is much higher than the capacity of the new buildings can cover.

When it comes to the causes that explain the increasing demand for housing in Greece, the reasons are many:

- Many Greeks are being forced to seek new accommodation due to the conversion of their previously rented properties into short-term rentals. In the summer of 2024 Airbnb listed 232,841 properties available for rent across Greece.

- Also, there is increasing demand from international buyers who view Greek property prices as relatively low compared to other famous international places. This has led to a growing interest in acquiring property in Greece. At the same time "digital nomads" from relatively expensive around the world places are choosing Greece to work remotely since they consider the cost of living and the weather as attractive.

A brief analysis should also be made about the impact of the well-known Golden Visa program, which has further increased housing demand in Greece. This program allows foreign nationals to obtain residency in exchange for substantial financial investments in Greece, including property purchases. As a result, demand for housing has escalated at an even faster rate. According to data from the Ministry of Migration and Asylum Policy, a total of 12,577 initial Golden Visa applications were submitted in October 2024, marking a 12% increase compared to the previous year. The Greek society seems to be frustrated from the competition that the Golden Visa program is causing to the housing market and for this reason the government has scheduled changes in the program, aiming to decrease the demand for it.

These various factors are contributing to a particularly challenging situation for Greek citizens. Many individuals in their 30s are unable to move out of their parents' homes due to the housing crisis. The combination of low wages and escalating property prices has made homeownership a difficult quest for most Greeks.

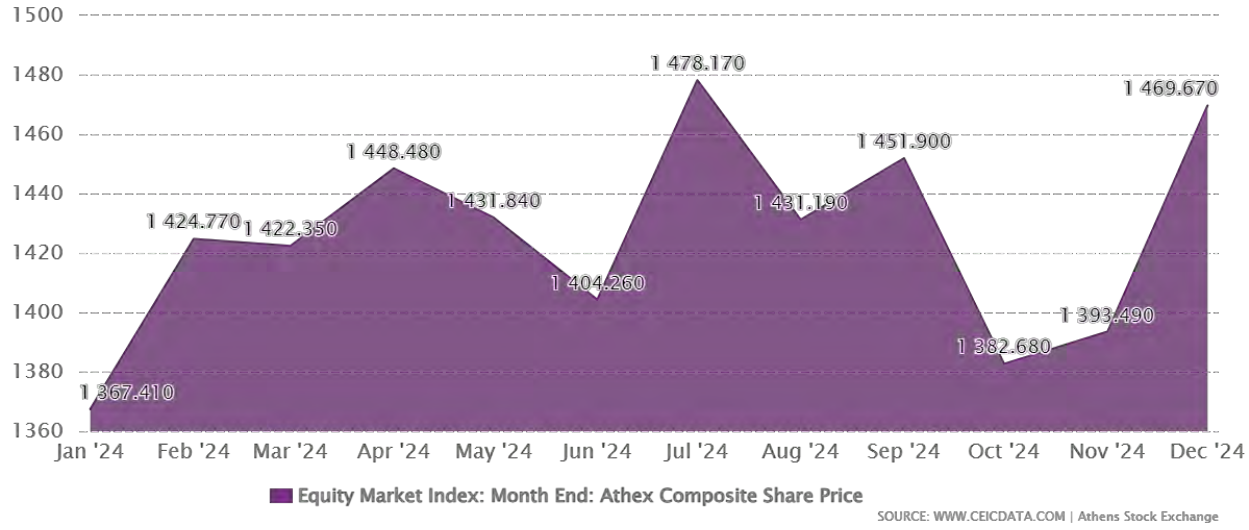
More optimistic analysts suggest that the situation could improve if the construction sector continues to increase the supply of housing. The rise in supply will eventually lower the prices, and this will make the situation better.

6. Greek Stock Market 2024 performance

The Greek stock market has experienced sustained growth, reflecting the strong performance and optimistic outlook for the Greek economy. This positive trend for another consecutive year proves that local and national investors have regained confidence in Greece, following years of skepticism.

The General Price Index closed 2024 at 1,469.67 points, compared to 1,293.14 points in 2023, marking an annual increase of 13.65%.

The main stock market index recorded its highest closing value on May 20 at 1,502.79 points, which was a 14-year high.



Analysts note that the growth of the Greek stock market is not driven by the performance of only a specific sector. A closer analysis of the data reveals a great distribution of investments in various sectors of the economy. Emphasis is placed on the banking, construction, energy, and information technology industries.

The biggest growth was reported in the stocks of: Q&R +104,61%, Moda Bango +95,29%, Titan +87,41%, Optima +65,9%, KPI- KPI +56,58%.

% Annual Performance of the Greek Stock Market in the last decade

2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
-23,6	+2	+24,6	-24,7	+49,5	-11,8	+10,4	+4,1	+39,0	+13,6

Expectations for 2025 remain positive. However, there is a degree of skepticism, as the analysts stress the fact that potential negative developments in the global economy would impact the Greek economy and the national stock market.

Section II: Perspectives

1. The Draghi Report: Key points, criticisms and implications for Greece.

The report on *The Future of European Competitiveness*, also known as the "Draghi Report", was publicly released in September 2024 with recommendations on the European Union's (EU) economy. The report's objective is to propose a new industrial strategy for the EU, with specific and tangible proposals that are applicable in the short and medium term.[7] The annual cost for this industrial strategy is estimated to be at least 750 billion euros in additional investment, which corresponds to about 4.5% of the EU's GDP. Though the Draghi Report spans almost 400 pages, this chapter will try to outline the motivation for the report, its key points, some notable criticisms, as well as its relevance in the context of the Greek economy.

According to the Draghi Report (September 2024), Europe faces three major transformations. The first is to accelerate innovation and find new growth engines. The second is to bring down high energy prices while continuing to decarbonize and shift to a circular economy and the third is to react to a world of less stable geopolitics, where dependencies are becoming vulnerabilities, and it can no longer rely on others for its security. A major question and concern that arises from the report is how the EU should finance the investments needed to transform its economy. While the private sector is the productive sector of the economy, it will not be able to finance investments without the support of the public sector. As the report states "[…] *the more willing the EU is to reform itself to generate an increase in productivity, the more fiscal space will increase, and the easier it will be for the public sector to provide this support […] At the same time, there are other public goods identified in this report – such as defense procurement or cross-border grids – that will be undersupplied without common action. If the political and institutional conditions are met, these projects would also call for common funding.* Draghi Report clearly describes the context which the Greek economy, as member of all major EU institutions, will face the forthcoming years.

1.1 Background

The EU economy has been facing unique structural challenges in its competition with other advanced economies, especially the United States (US) and China. In particular, the EU relies more on trade with the rest of the world, it faces higher energy prices, it is dependent on relatively few suppliers for raw materials, it is lagging in terms of technological innovation, and it does not spend enough on defense. The current pressures from geopolitical risks, energy dependencies, rising trade protectionism and rapid technological advancement require coordinated action by the EU countries to enhance new engines of economic growth and accelerate innovation, while preserving social cohesion.

To address the challenges, in 2023 the European Commission tasked Mario Draghi, former prime minister of Italy and former European Central Bank president, to lead the creation of a report with concrete recommendations. The Draghi Report was formally released on 14 September 2024. The report's recommendations were welcomed by the European Commission, except for the recommendation on joint borrowing by the EU countries to finance key strategic investments. In fact, several parts of the report have already been adopted by European Commission president Ursula von der Leyen for implementation during her 2024-2029 term. Lastly, one should keep in mind that the Draghi Report is a part of the wider constellation of recent EU reports on economic

[7] Short term (medium term) refers to approximately 1-3 years (3-5 years).

reforms, such as the Letta report with policy recommendations on the future of the EU's Single Market, and the European Commission's report on the evolution of competition in the EU.[8,9]

1.2 Key Points of the Draghi Report

The Draghi Report documents a list of important problems hampering the EU economy and then offers an array of policy recommendations, both for the overall economy and for specific industries, to address these problems. A representative list of the recommendations is presented below.

1.2.1. Economy-wide policies

Horizontal policies are related to accelerating innovation, closing the skills gap, sustaining investment, revamping competition and strengthening governance in the EU.

- Redesign the EU's Framework Program for Research and Innovation in terms of its focus, budget allocation, governance and financial capacity. Essentially, the priority should be disruptive innovation, higher-risk projects and smaller firms, and the process should be less bureaucratic and driven by innovation practitioners.
- Promote academic and research excellence across EU universities, to reduce the EU's deficit of top world-leading research institutions and universities.
- Revamp skills policies, while harmonizing skills certifications across EU countries, reforming vocational educational training, and attracting more highly skilled workers from outside the EU.
- Fund the horizontal and sectoral reforms, primarily through a combination of direct government investments and fiscal incentives to private investment. At the same time, a Capital Markets Union (CMU) should be created to unify the fragmented EU capital markets and reduce private financing costs. These changes will require the creation of the European Security Exchange Commission and the enlargement of the EU securitization market. Notably, the report argues in favor of a regular and sizable issuance by the EU of a common safe and liquid asset.
- Streamline the EU's complex governance system, which can hamper the competitiveness of EU companies by imposing excessive regulatory and administrative burdens.
- Transitioning the EU economy towards productivity growth and innovation should not come at the expense of social inclusion. The EU welfare state should play a major role during this transition to protect the European social model.
- Vertical integration of artificial intelligence (AI) into the various industries, by promoting cross-industry coordination and data sharing across the EU.
- Removal of regulatory constraints preventing SMEs in Europe from reaching sufficient size to innovate and to accelerate their adoption of advanced technologies. Similarly, EU competition policy should be revamped to allow for mergers that would create European companies of sufficient scale to compete with US and Chinese superstar companies.
- Lower the EU's energy costs by reducing its dependence on natural gas, increasing its investment in clean energy generation, streamlining the permit granting process for new power supply and power grids, lowering the taxes on energy consumption and reducing the supervisory exceptions of energy trading companies.

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[8] Letta, E. (2024) *Much more than a market: Empowering the Single Market to deliver a sustainable future and prosperity for all EU Citizens*.

[9] European Commission (2024) *Protecting competition in a changing world: Evidence on the evolution of competition in the EU during the past 25 years*.

- Develop a common foreign economic policy to ensure the supply of critical raw materials (e.g., lithium, cobalt, rare earths, nickel), as the EU is highly dependent on a small number of countries for each of these raw materials.
- Increase defense spending while reducing the fragmentation across the EU defense equipment and procurement.

1.2.2 Industry-specific policies

Sectoral policies target specific industries, namely energy, critical raw materials, digitalization, high-speed networks, artificial intelligence, semiconductors, energy-intensive industries, clean technologies, automotive, defense, space, pharmaceuticals and transportation. For instance, some of these sectoral policy recommendations involve:

- Establishing long-term contracts for natural gas with reliable and diversified trade partners and limiting the possibility of speculative behaviors in spot markets for natural gas.
- Creating a Single Market for waste and recycling in Europe.
- Developing strategic reserves for critical raw materials.
- Completing the Digital Single Market for telecommunications, harmonizing rules and favoring cross-border mergers and operations.
- Developing computational capacity for AI models and retaining control over data and sensitive cloud services.
- Creating a new EU Semiconductor Strategy and establishing an EU semiconductor budgetary allocation in addition to the EU countries' allocations.
- Accelerating the implementation of the Net-Zero Industry Act, which was passed in June 2024 and aims to enhance EU's capacity for manufacturing net-zero technologies.
- Facilitating the development of new nuclear energy supply.
- Supporting the automotive sector's initiatives to supply vehicles that are affordable for internal consumption and attractive in export markets.
- Spearheading an EU defense policy harmonization across EU countries, by establishing a Defense Industry Commissioner position, with the appropriate organizational structure and funding.
- Providing guidance on the use of AI in the lifecycle of medicines and streamlining the management of multi-country trials and electronic health records.
- Improving cross-border connectivity and infrastructure for both transportation and military purposes.

1.3 Criticisms of the Draghi Report

Inevitably, the Draghi Report's magnitude of recommendations, as well as its bold claim that the EU is currently facing an existential challenge, has attracted a wide range of criticisms. Below, we summarize four major critiques:

- Feasibility of implementation: The Draghi Report -as a whole- outlines a major step towards further EU integration. As a result, it has been criticized as being overly ambitious in terms of time and scope. For instance, it would be far from easy to create all these newly prescribed regulatory and supervisory agencies, with adequate funding and experienced staff, within a 5-year period. Similarly, it will be a difficult task for the EU educational system to be overhauled and somewhat harmonized within the next 3-5 years, to create the necessary conditions for world-class academic excellence. Furthermore, the report underestimates the likely push-back from national authorities and regulators to transfer control to new EU-wide regulatory bodies

(e.g., the European Securities and Exchange Commission). Most importantly, fragile political alliances, societal fragmentation and rising populism across EU countries have created a polarizing political environment that may not be fertile for the magnitude of reforms necessitated in the Draghi Report.

- Selection bias in the contribution: In the list of acknowledgements, there is a litany of academic professors, trade and business associations, think tanks, NGOs, EU institutions, as well as prominent corporations and consulting companies, totaling 236 entities. Notably, none of these entities is directly associated with Greece. Similarly, there is trivial input from individuals or organizations from smaller EU countries. This seems to be consistent with complaints that Draghi Report drew inspiration from large company interests.

- Representation in decision making and issues with partial application: To streamline the ambitious agenda of reforms, the Draghi Report recommends that EU Treaties should be exploited to overcome any obstacles from the requirement for unanimity voting in the EU Council, by switching to qualified majority voting where a coalition of like-minded EU countries could vote for these reforms. However, if the major EU countries use this legal avenue to cherry-pick reforms from the report, then the outcome will be the improvement of specific national economies rather than the EU.

- Limits of fiscal policy across EU countries: The Draghi Report's implementation would require a substantial increase in government spending and government guarantees across several years. However, as most major EU economies have high levels of government-debt-to-GDP ratio, and the EU countries' fiscal multipliers are believed to be below 1, there is uncertainty about the actual macroeconomic impact from the proposed reforms.

1.4 What Does the Draghi Report Really Mean for Greece?

Despite the media attention, the Draghi Report's relevance to Greek economic growth *per se* is rather limited, for a variety of reasons related to the report's core-periphery approach and the idiosyncratic characteristics of the Greek economy. More specifically:

- Sectoral focus: Much of the Greek economy's private sector revolves around tourism, shipping and agriculture. These specific industries have little to contribute to or gain from high-impact technological progress and artificial intelligence. For instance, in the 380 pages of the Draghi Report (Part A and Part B), tourism is only passingly mentioned twice, in the context of improving EU competitiveness via transportation infrastructure. Agriculture and the shipping industry are also rarely mentioned in the report, usually in the context of tangential matters, such as the use of AI to monitor shipping lanes, China's dominant position in the production of shipping containers, and the feasibility of satellite navigation in agriculture machinery.

- Global champions: The report is clearly focusing on creating the conditions for the emergence of global champions, both corporate and educational, at such a massive scale that they could compete with the largest US and Chinese rivals. For instance, the report expresses the need to increase the number of EU universities among the top 50 globally, as currently the EU has only 4 EU universities in that category, while the US and China have 21 and 15, respectively. Clearly, Greece has little potential to establish a global champion, especially after the post-austerity strategy of low-wages and high-taxes in Greece that led to a substantial brain drain.

- Defense: Greece is already the first among all EU countries, in terms of defense spending as a as a share of GDP.[10] Similarly, Greek Air Force and Navy are both among the largest in NATO. In that respect, the report's recommendations to the EU countries to increase their defense capacity, though probably difficult for many of the EU countries, it does not present any challenges for Greece.

Overall, the Greek economy reflects only 1.4% of the EU's GDP and has different boundaries for growth compared with the major EU economies. Specifically, Greece's productivity issues are mainly related to its ageing population, the public sector inefficiencies, the slow judicial system, education system rigidities, and fiscal policy constraints. In that respect, both the Pissarides Commission 2020 report[11] and the McKinsey 2012 report[12] (updated in 2017), which were commissioned by the Greek government, offer more suitable recommendations to guide the Greek economy towards economic growth and improved debt management.

10 See https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Government_expenditure_on_defence

11 Pissarides, C., Meghir, C., Vayanos, D. and Vettas, N. (2023) *A growth Strategy for the Greek Economy*, CEPR Press: London.

12 McKinsey & Company (2012) *Greece 10 years ahead: Defining Greece's new growth model and strategy*.

2. Closing the Innovation Gap in Greece

2.1 Introduction

Europe's ability to lead in the 21st century hinges on its capacity to innovate. In his report on the future of European competitiveness, Mario Draghi identifies three critical areas for action to reignite growth: closing the innovation gap, aligning decarbonization with competitiveness, and increasing security by reducing strategic dependencies. He underscores that Europe's innovation deficit, coupled with high energy costs and reliance on external supply chains, poses significant challenges to its global standing (Draghi 2024). Within this framework, innovation emerges as the cornerstone for addressing these interconnected challenges, offering pathways to bolster productivity, advance clean technologies, and strengthen economic resilience. Within this framework, innovation emerges as a key driver, not only for technological advancement but also for fostering resilience in the face of external shocks.

Draghi underscores the urgency for Europe to bridge its competitiveness gap by addressing structural and institutional barriers, fostering innovation ecosystems, and aligning investments with strategic economic sectors. Within this broader European narrative, Greece emerges as a poignant case study, exemplifying how localized challenges reflect and exacerbate continental trends.

Greece's innovation landscape reveals a mix of opportunities and persistent blockers. While the country has made notable strides in areas such as digital transformation and green initiatives under" Greece 2.0" plan, systemic barriers—including limited R&D investments, institutional inefficiencies, and sectoral stagnation—continue to undermine progress. These challenges mirror the issues Draghi identifies at the European level but are compounded by Greece's unique socio-economic context, characterized by a dominance of microenterprises, a high degree of regulatory complexity, and limited private sector engagement in innovation.

This report is organized as follows: Section 2 provides an overview of the current state of Greece's innovation landscape, highlighting key trends and policy initiatives. Section 3 examines the primary blockers to innovation, categorized into economic and regulatory barriers, education and skill deficits, institutional inefficiencies, and sectoral limitations. Section 4 explores forward-looking strategies to overcome these challenges, drawing on lessons from global best practices and aligning them with Greece's unique strengths and opportunities. Finally, Section 5 concludes.

2.2 Current Situation

This section analyzes Greece's innovation landscape from 2004 to 2024, highlighting key macroeconomic trends, the role of European funding, and structural reforms shaping growth. It examines persistent challenges such as low R&D investment and technological adoption while exploring opportunities from initiatives like "Greece 2.0" and Greece's pivot toward digital and green transitions.

2.1.1 Economic Context

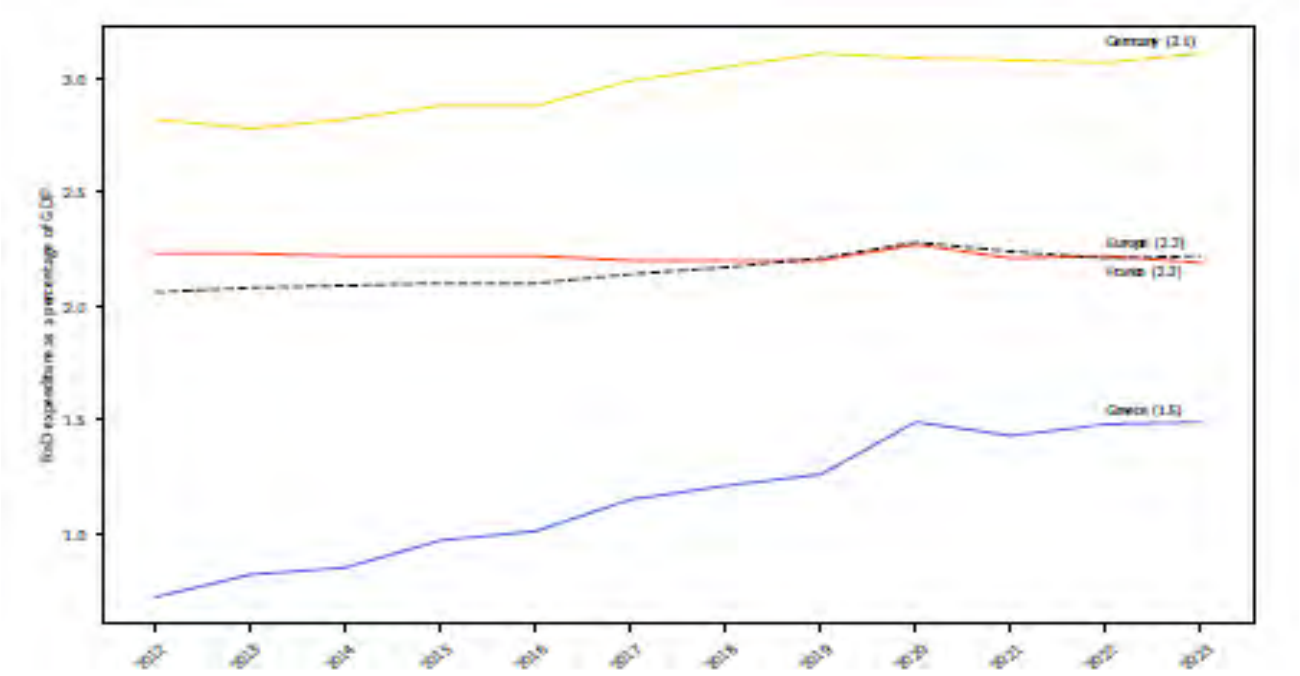
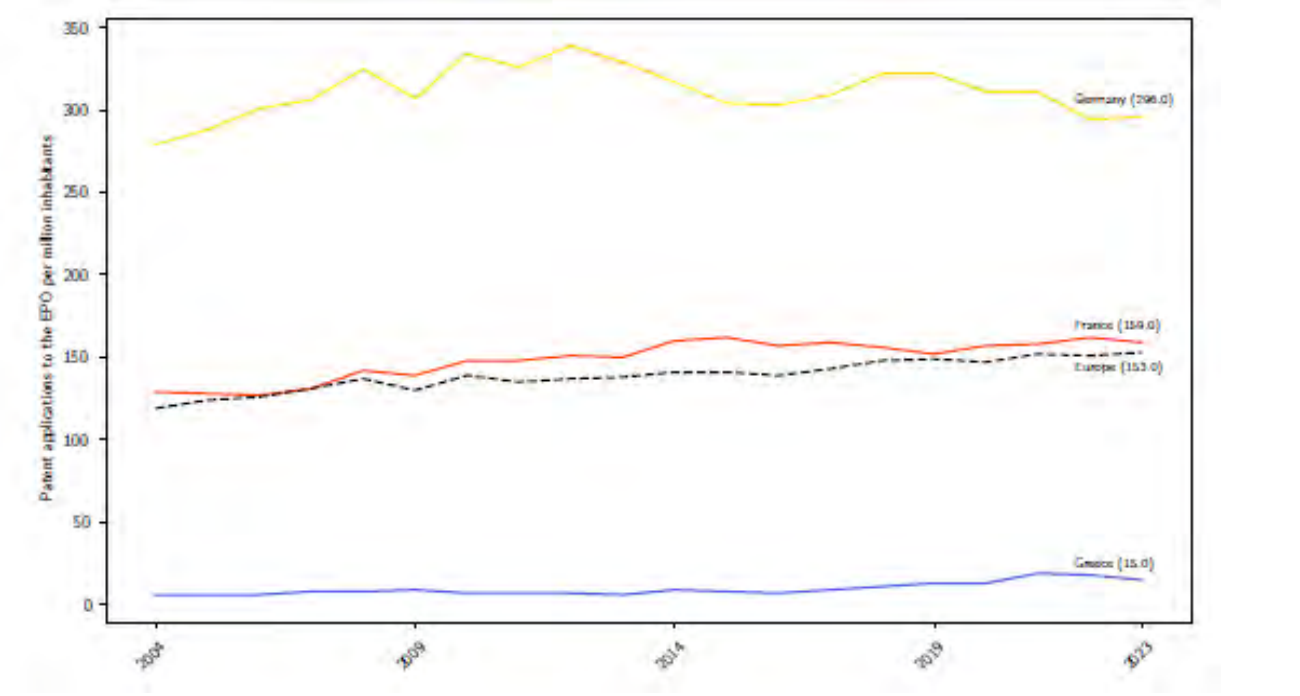


Figure 1: R&D expenditure as a percentage of GDP 2012-2023 Source: Eurostat (2024b)

Greece has demonstrated resilience in its economic recovery, with stable GDP growth projected at 2.2% in 2024 and 2.5% in 2025. This recovery is underpinned by declining unemployment, expected to fall from 10.4% in 2024 to 9.8% in 2025, and a strengthening fiscal position characterized by a primary surplus projected to increase from 2.9% of GDP in 2024 to 3.1% in 2025. These improvements reflect the impact of structural reforms, enhanced fiscal discipline, and sustained support from European funding mechanisms (OECD 2024).

Figure 2: Patent Applications to the EPO per million inhabitants 2004 – 2023 Source: Eurostat (2024a)



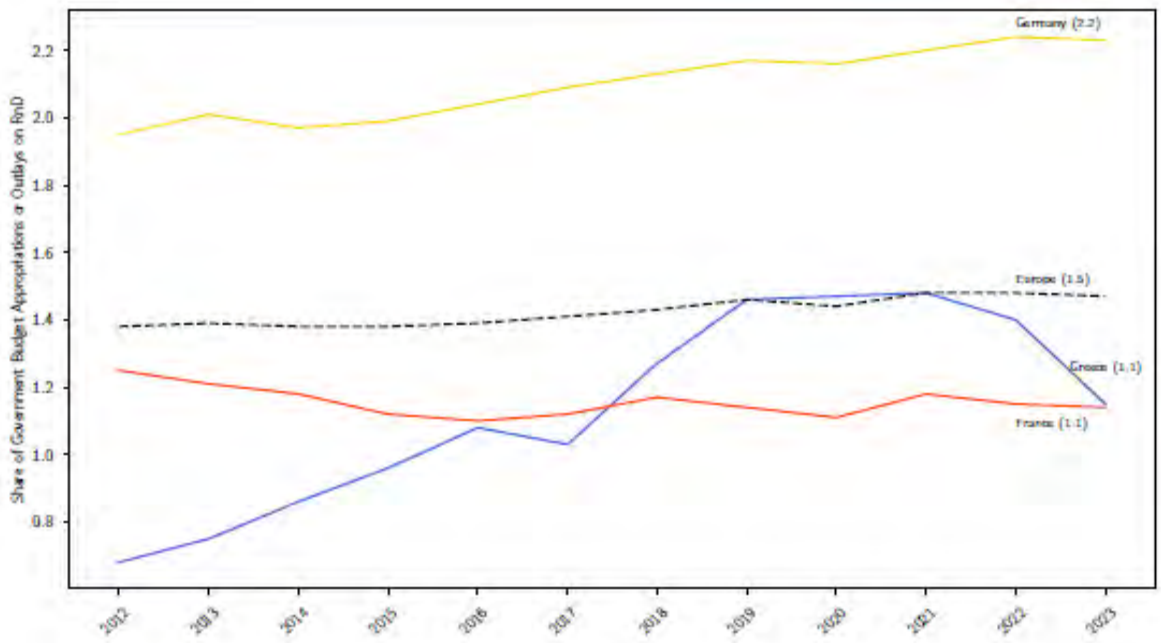


Figure 3: Share of government budget appropriations or outlays on R&D 2012-2023 Source: Eurostat (2024c)

The absorption of Recovery and Resilience Facility (RRF) funds continues to play a critical role in boosting economic activity. Greece's" Greece 2.0" plan, funded through the RRF, aims to drive transformative investments in digitization, green energy, and private-sector modernization, with over €17 billion allocated to these initiatives by 2026. This includes significant advancements in renewable energy and digital infrastructure, which are expected to support long-term sustainable growth (ibid.).

2.2.2 Innovation Landscape

Greece's innovation environment is characterized by a mix of persistent structural challenges, such as limited R&D investments, low technological adoption rates, and skill mismatches, as well as opportunities driven by policy initiatives aiming at addressing these gaps.

Greece's patent applications 2 to the European Patent Office (EPO) per million inhabitants remain significantly lower than the European average, reflecting the country's enduring challenges in innovation and R&D investments (Eurostat 2024a). While Europe and countries like Germany and France exhibit robust activity in patent applications, Greece's limited technological adoption and innovation capacity hinder its competitiveness.

Despite recent signs of improvement, private sector spending on R&D remains persistently lower compared to the EU-27 average (OECD 2024). According to Eurostat (2024b), R&D expenditure has been trending upwards between 2010-2018 and since then has plateaued at approx. 1.5%, significantly lower than the EU average at 2.22% 1. This long-standing underinvestment trend stifles the country's innovation capacity by hampering the development of advanced technologies and delays modernization in key industries. While the share of Greece's government budget allocated to R&D 3 showed a promising increase from 2012 to 2017, nearing the European average by 2019, it sharply declined after 2020, dropping to 1.1% in 2023 (Eurostat 2024c). This decline contrasts with Germany, which consistently allocates a higher percentage to R&D, reflecting its prioritization of innovation. The reduction in Greece's public R&D spending further exacerbates the challenges in fostering technological advancements and economic

competitiveness, highlighting the need for sustained investment to bridge the innovation gap.
The slow uptake and utilization of digital tools and advanced technologies, especially among smaller firms, further constrains Greece's innovation prospects. Small and medium-sized enterprises (SMEs) form the backbone of the Greek economy, but exhibit limited potential for innovation, productivity gains and firm growth (OECD 2024). As of 2023, SMEs made up 99.8% of all domestic businesses, with micro-ventures -those employing less than 10 individuals - comprising 94.7% (Katsinis et al. 2024). While smaller firms play a dominant role in the economy, their low productivity, limited growth capacity, and lack of digital intensity, result in Greek businesses operating far from the technological frontier compared to EU counterparts. Notably, the Greek business ecosystem exhibits a relatively low share of firms that employ a website, utilize cloud computing, or use artificial intelligence (OECD 2024).
Education and human capital mismatches contribute another layer of complexity to Greece's innovation challenges. Even though the country boasts a well-educated workforce, with high rates of tertiary education attainment (see figure 4 (Barro, Lee, and Our World in Data n.d.), there is a significant gap in vocational and technical training aligned with market demands (OECD 2021). This misalignment leads to shortages of key technical skills necessary for driving innovations in strategic domains, such as technology, renewable energy, and digital transformation, as well as already established dominant sectors, namely shipping and tourism.

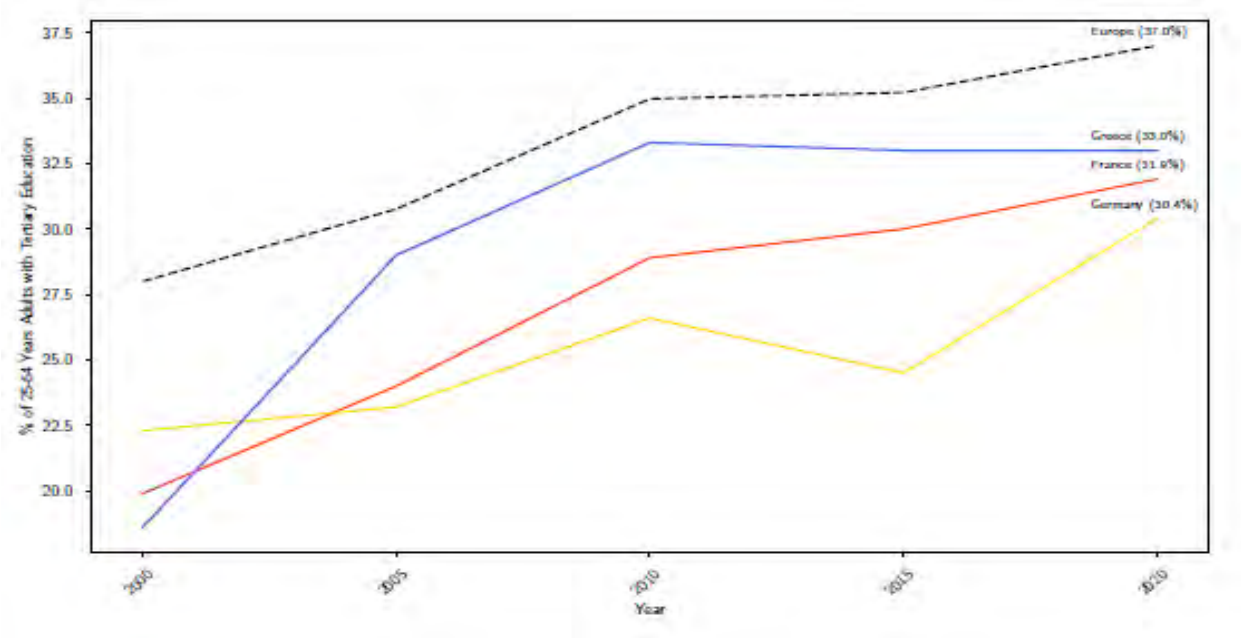


Figure 4: Share of the population with tertiary education 2000 – 2020 Source: Barro, Lee, and Our World in Data n.d.

2.3 Greece 2.0

One of the latest policy initiatives drafted to address the gaps that hinder innovation is" Greece's Recovery and Resilience Plan, funded by the EU. The plan, also known as "Greece 2.0", has committed to implement 103 investments and 76 reforms amounting €35.95 billion. The Plan consists of four pillars: Green Transition, Digital Transformation, Employment-Skills-Social Cohesion, Private Investments and Transformation of the Economy.

The Green Transition pillar focuses on sustainable development, with investments in energy efficiency upgrades for buildings, renewable energy sources, and a National Reforestation Plan, alongside reforms that simplify licensing procedures for renewable energy and promote e-mobility. The Digital Transformation pillar emphasizes enhancing connectivity through 5G infrastructure and digitizing public sector archives, supported by reforms that improve digital service interoperability and encourage private investment in digital technologies. The Employment, Skills, and Social Cohesion pillar addresses labor market challenges by funding training programs focused on digital skills and improving health and education systems to support vulnerable groups, coupled with reforms aimed at enhancing access to social services and promoting job creation. Finally, the Private Investment and Transformation of the Economy pillar encourages private investment in green and digital sectors through incentives and Public-Private Partnerships (PPPs), while reforms simplify the business environment to attract investment and upgrade research centers for greater innovation (Key Investments Reforms - Greece 2.0 2021).

By 2026, real GDP is projected to increase by 6.9%, while private investment is expected to increase by 20%. On the other hand, employment is projected to grow by approximately 4%, creating 180,000 jobs and the tax revenues-to- GDP ratio to increase by 2.8 percentage points (Malliaropulos et al. 2021). In addition, since the RRF mandates to allocate at least 37% of NRRP funds to green transitions and 20% for digital transformations, Greece is expected to experience significant advancements in sustainability, and digital infrastructure. Greece 2.0 seems to be a promising step towards closing the innovation gap in Greece. It addresses some of the key long-term blockers of innovation, however, the execution of the program is crucial in delivering sustainable results. Moreover, overcoming the chronic systemic and cultural issues that created the innovation gap in Greece in the first place might prove more challenging to address and resolve.

2.4 Blockers

This section attempts to categorize and examine in greater depth Greece's blockers of innovation. Greece has been victim to these" usual suspects" for years that harm innovation and undermine its growth. The main blockers can be categorized as follows: Economic and Regulatory Barriers, Institutional Barriers, Education and Skill Deficits, and lastly, Sectoral Limitations.

2.4.1 Economic and Regulatory Barriers

Greece's innovation landscape is significantly hindered by persistent economic and regulatory barriers, which stifle growth and competitiveness, particularly among small and medium-sized enterprises (SMEs). These challenges are deeply rooted in structural inefficiencies, limited access to financing, and an overburdened regulatory framework. A primary obstacle is the excessive complexity and fragmentation of regulations, which result in high administrative burdens and legal uncertainty for businesses.

Between 2001 and 2015, Greece introduced 1,478 laws and over 200,000 executive decrees, creating a labyrinthine system of overlapping rules that disproportionately impacts SMEs (Petrakis 2024). This regulatory complexity not only hampers entrepreneurship but also deters foreign investment, as businesses perceive Greece as a high-risk environment for operations. Moreover, delays in decision-making processes, such as the prolonged approval of permits for innovative projects, further discourage firms from pursuing ambitious ventures. Structural inefficiencies within public administration exacerbate these issues, limiting Greece's capacity to attract and retain innovative businesses (Hyz 2019).

The challenges extend beyond general regulatory inefficiencies to include issues related to intellectual property protection. Lengthy procedures and high costs associated with patent

applications deter firms from safeguarding their innovations, leading to a lower rate of commercialization for new technologies (Petrakis 2024). Compounded by a weak intellectual property management framework, Greek firms struggle to transform research outputs into market-ready products, undermining their ability to compete globally (Musso and Schiavo 2008). These systemic barriers create significant obstacles for firms seeking to innovate and grow within an increasingly competitive international landscape. Access to external financing adds another critical layer of difficulty for Greek SMEs, which rely heavily on bank lending as their primary funding source. The financial crisis and subsequent austerity measures severely strained the Greek banking sector, resulting in liquidity shortages and stricter lending standards that disproportionately affected SMEs. By 2016, outstanding loans to Greek SMEs had declined by over 40% compared to pre-crisis levels, underscoring the severity of the credit crunch (Hyz 2019). This lack of financing options is further compounded by limited access to venture capital and alternative funding mechanisms, such as crowdfunding. Studies have shown that smaller firms in Greece face higher interest rates and stricter collateral requirements compared to their EU counterparts, reflecting the fragmented nature of financial systems across the euro area (Moscalu, Girardone, and Calabrese 2019). This dynamic not only stifles growth but also perpetuates structural inequalities, as micro and small firms—comprising over 94% of Greek businesses—struggle to compete with larger, more financially stable enterprises (Morone and Testa 2008).

Despite these challenges, many SMEs have demonstrated resilience by adopting cost-saving management innovations to mitigate the impact of financial constraints. Such innovations, which improve operational efficiency and reduce costs, have been shown to offset up to 7% of the negative effects of restricted credit access, highlighting the adaptive capacity of Greek businesses (De Blick, Paeleman, and Laveren 2023). However, this reliance on short-term solutions diverts resources away from growth-oriented investments such as research and development, limiting long-term competitiveness. The high dependency on such strategies underscores the systemic nature of Greece's financing challenges, which continue to suppress the potential of its innovation ecosystem.

2.4.2 Education and Skill Deficits

Greece's education system faces significant challenges in aligning its outputs with the demands of the labor market, a problem that has persisted for decades and continues to undermine the country's economic competitiveness. The expansion of higher education, while meeting societal demand, has led to an oversupply of graduates in fields with limited private sector absorption, particularly in social sciences and humanities. Between 1993 and 2002 alone, university enrollment rose by 115%, yet these fields accounted for over 31% of graduates, far exceeding labor market needs (Livanos 2010; Lazaretou 2016). This misalignment has left many graduates either underemployed or unemployed, unable to leverage their qualifications in a market that remains skewed toward low-tech industries and public sector employment (Liagouras, Protogerou, and Caloghirou 2003; Spanou et al. 2017). Employers frequently report a lack of technical and transferable skills among graduates, highlighting systemic gaps in higher education curricula and a failure to integrate employer input into program design (OECD 2021).

The high mismatch between education and labor market requirements has fueled the phenomenon of brain drain, with hundreds of thousands of highly educated Greeks emigrating in search of better opportunities. From 2010 to 2015, more than 224,000 individuals, many holding advanced degrees, left the country. This exodus has disproportionately affected sectors that rely on innovation and technical expertise, further weakening Greece's intellectual capital and economic resilience (Lazaretou 2016; Spanou et al. 2017). Despite efforts such as the" Rebrain Greece"

initiative, which aims to attract expatriate talent back to the country, structural barriers and limited high-skill job opportunities continue to hinder retention efforts (Spanou et al. 2017).

Vocational education and training (VET), which could serve as a bridge between education and employment, remains underdeveloped in Greece. Public spending on VET is among the lowest in the EU, and the sector suffers from a lack of integration with regional industrial strategies. Graduates from technical and vocational schools face similar unemployment rates as those with only primary education, reflecting the inadequate alignment of these programs with market needs (Livanos 2010; Lazaretou 2016). Efforts to reform VET by merging technological institutions with universities have been criticized for diluting their practical focus, leaving a critical gap in skill development for technical and applied professions (OECD 2021).

Adding to these challenges is the limited adoption of digital and artificial intelligence (AI)-related skills among Greece's workforce. The country lags its EU peers in equipping students with digital competencies, ranking below average in digital literacy and the integration of advanced technologies into educational curricula. While initiatives such as the" Works Again" law have sought to modernize vocational training and include digital skills, these reforms remain insufficient in addressing the growing demands of a knowledge-based economy (Spanou et al. 2017; Lazaretou 2016). Public-private partnerships and greater investment in research and development are essential to bridge this gap, yet these areas continue to see underinvestment compared to EU standards (OECD 2021).

2.4.3 Institutional Barriers

Greek universities and research centers have struggled to translate research outputs into commercially viable products. Over three years, only 56 patents were filed and 79 published across 12 major institutions, with even fewer in specialized fields such as medicine and health sciences (Sachini et al. 2024). This performance underscores the limited capacity of Technology Transfer Offices (TTOs) to bridge the gap between academic innovation and market applications. Greek TTOs, which are critical intermediaries, face resource constraints, weak intellectual property management frameworks, and a lack of skilled personnel. Most TTOs offer services to fewer than 10 individuals per category (e.g., researchers, students), highlighting their limited outreach and effectiveness (Sachini et al. 2024; Anyfantaki et al. 2022).

The underdeveloped ecosystem of TTOs in Greece remains a critical bottleneck. Only a fraction of institutions has comprehensive regulations for managing intellectual property or supporting spin-offs. For instance, four institutions reported no policies for patent examination. Over three years, only 42 spin-offs and 37 start-ups were created, with many concentrated in a few institutions (Sachini et al. 2024). Networking and collaboration with international research centers are also limited, further restricting the global impact of Greek innovations. Recent initiatives such as the" Science Agora" and" Spiral" projects, launched after 2021, aim to address these gaps by fostering economies of scale and institutional collaboration (ibid.).

Private sector engagement in research and innovation remains weak, with private R&D expenditure at less than 0.2% of GDP (Anyfantaki et al. 2022; Herrmann and Kritikos 2013). Cultural and structural barriers persist, with limited tax incentives or co-funding mechanisms to stimulate industry-academia partnerships. Programs like" Research – Innovate 2021-2027" represent steps in the right direction, offering grants to incentivize collaboration, particularly for SMEs (Research and Innovation n.d.). However, these efforts require consistent implementation and alignment with broader national strategies (Anyfantaki et al. 2022; Herrmann and Kritikos 2013). Given the fact that Greece produces a significantly high number of publications in AI research, (see figure 5 (Security and (2024) – with major processing by Our World in Data. 2025),

closing the gap between academia and industry becomes more critical than ever. Ensuring Greece is equipped to ride the 4.0 industrial revolution in time could be one of the biggest opportunities for Greece in the last decades.

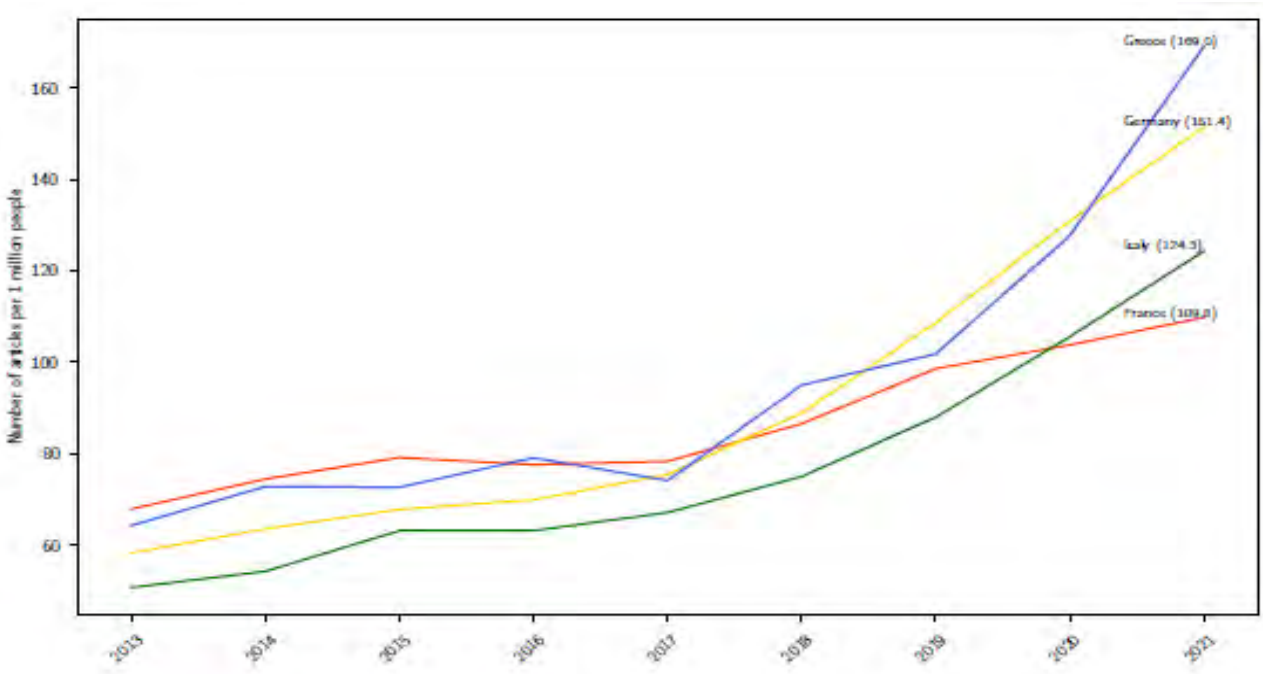


Figure 5: Scholarly publications on artificial intelligence per million people 2013-2021 Source: Security, Center for and Emerging Technology (2024)

The institutional challenges outlined above are compounded by Greece's limited private sector participation in innovation, but recent policy initiatives suggest the potential for meaningful reform. Addressing systemic barriers while leveraging strengths, such as competitive participation in EU programs, will be essential to unlocking Greece's full innovation potential.

2.4.4 Sectoral Limitations

Greece's economy is predominantly driven by the service sector, which accounted for approximately 67.35% of the Gross Domestic Product (GDP) in 2022. The industrial sector contributed around 16.82%, while agriculture represented about 3.76% of GDP during the same period (Statista 2024).

Building on the broader challenges discussed, Greece's industrial sector reflects many of the same systemic inefficiencies. Despite contributing 18% to GDP, well below the OECD average of 27.2%, the sector struggles with low productivity, limited R&D investment, and weak digital adoption among smaller firms. (OECD 2024)

In tourism, while Greece remains a top destination, the industry grapples with sustainability and investment challenges. Leaders emphasize the urgent need for sustainable practices to ensure long-term success (Dimitrakopoulos 2024).

Agriculture, traditionally reliant on low-skilled labor, exhibits limited technological integration. This sector's slow adoption of advanced farming techniques and digital tools contributes to subpar productivity compared to EU counterparts (Anyfantaki et al. 2022).

The maritime industry, a cornerstone of Greece's economy, also shows a lag in embracing

technological advancements. The limited adoption of digital tools and innovative practices hampers operational efficiency and global competitiveness (ibid.).

2.5 Moving Forward

Fostering a culture of innovation in Greece requires systemic policy reforms, strategic sectoral investments, and adaptive education models. By aligning these efforts with EU-wide frameworks and leveraging Greece's unique strengths, the country can achieve sustainable economic growth and leadership in innovation.

2.5.1 Economic and Policy Reforms

Overhauling Greece's bureaucracy to establish a more streamlined and efficient regulatory environment is critical for fostering innovation. The European SMEs report by Katsinis et al. (2024) underscores that regulatory burdens pose significant challenges to businesses, particularly small and medium-sized enterprises (SMEs), which constitute the backbone of Greece's economy. Complex administrative requirements often deter innovation by consuming resources that could otherwise be directed toward research, development, and market expansion. To address these issues, Greece should prioritize simplifying procedures for business registration, licensing, and compliance. Introducing digital solutions to automate and expedite these processes can significantly reduce costs and improve transparency, thus encouraging domestic and foreign investment in innovative sectors.

To enhance innovation, Greece should consider implementing targeted incentives, such as tax breaks and direct funding, for research and development (R&D) activities. Drawing from Aghion's framework on fostering growth through creative destruction, incentivizing private sector contributions to R&D can stimulate a virtuous cycle of innovation and economic growth (Aghion, Antonin, and Bunel 2021). Such incentives should focus on fostering collaborations between academia and industry, enabling startups and established firms to commercialize new technologies. Additionally, adopting policies to support venture capital and grant programs for high-potential research projects will attract and retain talent in cutting-edge fields like artificial intelligence, biotechnology, and renewable energy. These measures, in turn, can establish Greece as a competitive hub for innovation within the European Union.

Furthermore, focusing on agglomeration economies in high-potential sectors such as renewable energy and maritime logistics can provide Greece with a significant competitive advantage. Agglomeration economies arise when industries and businesses cluster geographically, fostering knowledge-sharing, reducing operational costs, and creating robust supply chains. The OECD Economic Surveys highlight that leveraging Greece's geographical strengths and historical expertise in shipping can position the country as a global leader in these sectors (OECD 2024). By establishing innovation clusters and specialized industrial zones, Greece should strive to attract both domestic and international firms. Additionally, facilitating partnerships between businesses and research institutions within these clusters can enhance technological advancements, driving productivity and economic diversification. This approach would align well with Greece's strategic goals of achieving sustainable and inclusive growth.

2.5.2 Education and Skills Development

Education lies at the heart of Greece's aspirations for economic revitalization and global competitiveness. As the country navigates the twin challenges of economic recovery and technological transformation, its higher education system has a pivotal role in fostering innovation, equipping the workforce with future-ready skills, and addressing regional disparities. By aligning academic programs with market needs, promoting digital and entrepreneurial capacities, and forging stronger ties between academia and industry, Greece can leverage its rich educational heritage to fuel sustainable growth. Transforming its education sector into a dynamic engine of innovation will require the collaborative efforts of policy makers and higher education institutions (HEIs) to implement bold reforms, integrate global best practices, and foster a culture of adaptability and lifelong learning.

In entrepreneurial teaching and learning, key actions include incorporating entrepreneurial activities into faculty promotions, reducing teaching loads for academics involved in business ventures, and enabling part-time contracts (OECD 2021). Establishing frameworks like appointing" professors of practice" and developing a national online platform to map entrepreneurial activities and experts can further strengthen the bridge between academia and industry. Simultaneously, attracting global entrepreneurial talent with financial incentives and streamlined processes will position Greece as a hub of innovation. Educational institutions can build on these foundations by expanding curricula to include modules such as Leadership, Design Thinking, and Intrapreneurship,

i.e. fostering entrepreneurial spirit within established organizations. Systematic evaluations of these programs, comparing students exposed to entrepreneurial training with control groups, can ensure continuous improvement (ibid.). Additionally, embedding and extending internship opportunities into academic programs is essential for equipping students with practical entrepreneurial skills. These efforts together will foster an ecosystem that drives innovation and supports sustainable economic growth.

In the digital transformation of higher education, leveraging existing infrastructures like GRNET and GUnet to create a central digital transformation body can provide shared strategies and resources. Allocating dedicated funding for initiatives such as digital training for staff and students, experimenting with innovative technologies, and implementing quality measures for online education will accelerate the transition. Flexible procurement policies tailored to university needs will further streamline the adoption of new digital tools. Institutions should align their strategies with national digital transformation goals, such as the" Digital Transformation Bible" (Digital Transformation Bible 2021), while prioritizing the development of digital skills among educators and fostering a culture of innovation. By ensuring cohesive action, Greece can modernize its education system and remain competitive in a rapidly evolving global technological landscape.

For knowledge exchange and co-creation, introducing legal frameworks to facilitate collaboration between academia and the private sector is vital. Incentives for faculty engagement in knowledge-sharing activities and targeted support for less-developed regions can address disparities and maximize impact (OECD 2021). Strengthening the roles of regional institutions as intermediaries and expanding initiatives like industrial PhDs will help merge academic research with practical applications, fostering innovation across diverse sectors like cultural heritage and agriculture. Universities can enhance these efforts by building stronger alumni networks and tailoring co-creation opportunities to address local challenges. Expanding industrial PhD programs will further integrate academic research with the workforce, creating a robust ecosystem of knowledge exchange and practical innovation.

Finally, establishing globally connected institutions is essential for Greece's international competitiveness. Clear strategies to enhance global engagement, simplified processes for

international collaboration, and incentives for participation in global partnerships are critical. Mobilizing resources and integrating internationalization into broader innovation policies will ensure effective global engagement. Higher education institutions can act as gateways for international collaboration by institutionalizing global strategies and involving Greek academics abroad in teaching and research activities. These combined efforts will amplify Greece's global presence and cement its role as a leader in education and innovation (ibid.). With these integrated approaches, the education system can serve as a cornerstone for national progress and sustainable growth.

2.5.3 Strategic Sector Focus

To advance Greece's economic transformation, targeted innovation in key sectors such as renewable energy, maritime logistics, and tourism technologies is essential. These sectors represent not only areas of competitive advantage but also opportunities to integrate sustainable practices and leverage Greece's unique geographic assets. By aligning resources and fostering innovation in these domains, Greece can establish itself as a leader in sustainable growth while addressing structural economic challenges.

Greece has made substantial progress in renewable energy, aiming to increase its share in electricity generation from 46% in 2022 to 80% by 2030 and achieve 98% renewable electricity generation by 2035 (OECD 2024). Legislative reforms have significantly streamlined licensing procedures, reducing processing times from five years to two and introducing simplified certificates to eliminate red tape, thereby accelerating project implementation. Additionally, policies such as contracts-for-difference (CFD) mechanisms have catalyzed investments in offshore wind farms and biomass co-generation projects. These measures are part of an ambitious plan to expand renewable energy capacity from 12 GW in 2021 to 27.3 GW by 2030. However, critical challenges remain, including grid capacity constraints and the need for a one-stop licensing shop, which hinder the deployment of planned solar photovoltaic capacities (ibid.). Targeted investments in grid upgrades, efficient environmental assessments, and integrated energy planning are essential to sustaining this momentum. By addressing these gaps, Greece can secure its leadership in renewable energy innovation, enhancing both energy security and resilience.

In addition to renewable energy, the maritime sector, a cornerstone of Greece's economy, offers significant potential for innovation through digitalization and sustainable practices. By adopting smart logistics systems and AI-driven solutions, Greece can enhance operational efficiency and environmental compliance in shipping. Similarly, tourism technologies, such as augmented reality applications and data-driven marketing platforms, can enrich visitor experiences and elevate Greece's competitiveness on the global stage. These innovations can be effectively aligned with regional socioeconomic goals through the use of smart specialization strategies, i.e. focusing resource allocation on a limited number of priorities rather than spreading them across multiple sectors, as outlined in the RIS3 framework (European Commission: Directorate-General for Regional and Urban Policy et al. 2012) (ibid.), ensuring that local conditions and priorities are integrated into the broader national vision (OECD 2024).

Small and medium-sized enterprises (SMEs), which are critical to Greece's economic landscape, also require targeted interventions to improve productivity and integrate into global value chains. As of last year, European SME productivity had declined to 60% of the levels achieved by large enterprises, compared to 68% in 2008, underscoring the vast potential in attempting to reverse this trend (Katsinis et al. 2024). Developing matchmaking platforms to connect SMEs with international partners, as successfully implemented in other EU countries like Slovakia and Bulgaria, can facilitate knowledge exchange and access to global networks (OECD 2022).

Furthermore, providing financial and logistical support, such as subsidized participation in international trade fairs and specialized consulting services (Katsinis et al. 2024), can significantly enhance the global competitiveness of Greek SMEs.

2.5.4 Digital Transition

Greece's pursuit of a sustainable and digitally advanced economy requires a cohesive approach that integrates green and digital policies. By advancing digital infrastructure and enhancing the country's global standing in artificial intelligence (AI) and digital research, Greece can tackle technological challenges while bolstering its economic competitiveness. These objectives demand a coordinated effort across public and private sectors, as well as targeted investments and reforms to overcome existing bottlenecks.

Regarding digital transformation, Greece has already made significant strides through initiatives such as the "Digital Transformation Bible 2020–2025" (Digital Transformation Bible 2021). This strategic roadmap emphasizes improving digital infrastructure, interoperability, and cybersecurity while enhancing public services through platforms like gov.gr, which offers over 1,500 digital services (OECD 2024). The government's focus on data-driven governance and private sector collaborations, such as the rollout of ultra-fast broadband, has further strengthened the country's digital ecosystem. Additionally, training programs under the "Digital Transformation 2021–2027" framework aim to upskill public sector employees and bridge the digital divide (OECD 2021). Despite these advances, regional disparities in digital infrastructure and the limited capacity of smaller institutions highlight the need for more inclusive strategies to ensure a comprehensive and equitable digital transition.

Complementing these efforts, Greece's aspirations to become a hub for AI and digital research are gaining traction. Investments by global tech leaders such as Microsoft, Meta, and Google signal the country's potential to attract high-profile projects and expertise (OECD 2024). Initiatives such as AI research centers and the deployment of mAIgov, a chatbot for public services, demonstrate Greece's commitment to integrating AI into governance and productivity (Chkatopodis 2023). However, to fully realize its potential, Greece must foster regulatory innovation by establishing AI sandboxes for experimentation and aligning national policies with broader EU strategies. These measures will create an enabling environment for local expertise and ensure Greece remains competitive in the rapidly evolving AI landscape.

2.5.5 Draghi Report Recommendations

Drawing inspiration from the Draghi Report, several recommendations resonate deeply with Greece's ambition to reinvigorate its innovation landscape. Proposal 3e, which advocates for a European framework to facilitate private sector fundraising for public universities, holds significant relevance for Greece. The US model, which leverages substantial endowments and structured tax incentives, highlights the potential for public universities to attract private donations, enabling the flexibility needed to retain top talent and fund cutting edge research (Draghi 2024). For Greece, adopting such a model would address current constraints, empower universities to elevate their research output, and attract global talent, thereby creating a stronger foundation for innovation-led growth.

Similarly, Proposal 6a (ibid.) focuses on the commercialization of academic research, a critical area where Greece lags. By implementing clear frameworks for intellectual property rights (IPR) and establishing equitable royalty sharing mechanisms, Greek universities and research institutions

could better translate their academic output into commercial applications. Strengthening Technology Transfer Offices (TTOs) across Greece and addressing bureaucratic inefficiencies would further facilitate the journey from innovation to market, ensuring that Greek academia plays an active role in driving economic transformation.

Complementing these, Proposal 6c (ibid.)—the introduction of an" Innovative European Company" (IEC) statute—provides Greece with an opportunity to foster start-ups that can seamlessly scale across borders within the EU. For Greece, this would mitigate the challenges of fragmented regulations and create an enabling environment for innovative companies in sectors such as green technologies, digital transformation, and biotechnology. By adopting the IEC framework, Greece could empower its start-ups to compete on a global scale while attracting foreign investment and fostering cross-border collaborations.

The Chinese paradigm of success further underscores the urgency of addressing Greece's innovation deficits. China's rapid transformation was underpinned by strategic investments, the development of a highly skilled workforce, and robust international partnerships (Draghi 2024). Greece must prioritize similar actions by aligning initiatives like" Greece 2.0" with a broader strategy that integrates STEM education, vocational training, and international collaborations. This would not only ensure the cultivation of domestic talent but also position Greece as a hub for regional innovation.

By aligning with these recommendations and tailoring them to its unique context, Greece can overcome systemic barriers, harness its academic and entrepreneurial potential, and position itself as a leader in innovation within the European Union. These steps are essential for ensuring sustainable growth and enhancing Greece's competitiveness on the global stage.

2.6 ACG Guiding Frame for the Use of Artificial Intelligence (AI) Technology

In accordance with ACG's educational mission to provide excellence in teaching and learning, ACG has recognized that engagement with AI tools is imperative to safeguard its institutional integrity.

The purpose of the future ACG Guiding Frame for the Use of Artificial Intelligence (AI) Technology is to provide a broad and flexible set of guidelines through which to support the development of critical AI literacy for all stakeholders across institutional areas and educational units.

The framework will include the following tenets:

1. ACG as an institution will support and facilitate sustained dialogue among administration, students, faculty, and staff to ensure the informed and responsible integration of current and relevant AI technology across units and services as appropriate.
2. ACG will ensure that knowledge and understanding of AI and of AI tools among all stakeholders (administration, students, faculty, staff) remain current by providing all members of the community with relevant training and up to date AI technology as appropriate.
3. The ACG administration will ensure that access to and use of AI technology is guided by ethical principles in relation to privacy, transparency, digital inclusion, and accessibility.
4. The ACG faculty will strive to equip students with critical AI literacy in accordance with the academic and scientific needs of the curriculum of each program and course, aiming at enhancing human potential and employability as well as enriching teaching practices.
5. The ACG faculty will ensure that students understand what constitutes legitimate use of AI technology in their programs and individual courses so that students engage with technology in a

principled and ethical manner.

2.7 Conclusion

The analysis of Greece's innovation trajectory from 2004 to 2024 highlights a dual narrative of progress and persistent challenges. While policies like the" Greece 2.0" plan have set a promising foundation, systemic barriers and institutional inefficiencies remain significant impediments to sustained innovation driven growth. Addressing these challenges requires targeted interventions that emphasize digital transformation, green initiatives, and enhanced private sector engagement in innovation ecosystems.

Greece's innovation potential is hindered by systemic barriers, including economic and regulatory inefficiencies, skill mismatches, and institutional weaknesses. Excessive administrative burdens and limited financing stifle R&D, while education gaps leave technical fields underdeveloped. Weak industry academia collaboration and under-performing Technology Transfer Offices prevent research from translating into marketable innovations. Key sectors like tourism, agriculture, and maritime industries lag in adopting advanced technologies, further limiting global competitiveness. Overcoming these challenges is crucial to unlocking Greece's innovation capacity and making it more competitive.

A holistic approach to innovation and economic development is essential for Greece to secure a competitive and sustainable future. Integrating comprehensive educational reforms to align academic programs with market demands and foster entrepreneurial and digital skills will empower the workforce to drive innovation and sustain economic growth. By focusing on renewable energy, maritime logistics, and tourism technologies, while providing robust support for SMEs, Greece can further enhance its economic resilience and foster long-term growth. In parallel, advancing digital transformation and strengthening AI research will position the country closer to the global frontier of technological innovation. These efforts, coupled with targeted reforms, strategic investments, and cross-sector collaboration, are critical for future-proofing Greece's infrastructure and cementing its position among innovators in the global stage.

Lessons from global competitors, particularly China, underscore the importance of strategic investments, fostering talent, and building robust international collaborations. For Greece, adopting these strategies means not only overcoming entrenched structural issues but also leveraging its unique strengths, such as its highly educated workforce and strategic geographic position, to maximize the potential of innovation clusters.

Ultimately, bridging the innovation gap will require a comprehensive approach that balances local needs with global best practices. Strengthening the foundations of the innovation ecosystem through investments in education, infrastructure, and private-sector partnerships, while fostering a culture of adaptability and resilience, will be key to ensuring Greece's long-term economic competitiveness. This report serves as a roadmap, urging coordinated action to realize the vision of a Greece that thrives as a leader in innovation and sustainable growth.

3. Greece innovation Ecosystem developments 2024

Overall:

Competitiveness:

In 2024, among 67 countries Greece is ranked at place 47th vs 49th in 2023 according to the Global Competitiveness Ranking of the Swiss Institute for Management Development (IMD). ((IMD World Competitiveness Center, n.d.).

Innovation Rankings in Europe and Globally

In 2024 Greece is classified by the European Innovation Scoreboard as a **"Moderate Innovator,"** ranking 24th, with a summary innovation index of 77.5 vs the EU average (EFIS Centre, Technopolis Group, & OldContinent, 2024). It should be noted that *the country has made a significant improvement of 16 positions since the base year of 2017, highlighting the progress made in the past 7 years.*

In terms of the Global Startup Ecosystem Rankings, Athens has re-entered the top 100. Currently ranked by the Global Entrepreneurship Network at places 51-60, with an ecosystem value of $4.2 bn up 40% since 2023, boosted by the valuation of VIVA Wallet at $1.7bn (Startup Genome & Global Entrepreneurship Network, 2024).

According to the Global Startup Ecosystem Index 2024 of StartupBlink (2024), Greece' ecosystem in 2024 is ranked at place 49 globally -down 3 places since 2023- and 19th in Western Europe. Athens is the leading city in Greece with 196 startups and ranked 120th globally, while Thessaloniki and Heraklion are also included in the top 1000 global cities.

Key Developments in the Macro Innovation ecosystem- Greece takes position in the AI and Space industries

Artificial Intelligence: In December 2024 the GRNET S.A., under the Ministry of Digital Governance, was selected to host one of the first European AI factories by the Europe HPC Joint Undertaking (European High-Performance Computing Joint Undertaking [EuroHPC JU], 2024). Pharos will exploit DAEDALUS, the EuroHPC supercomputer currently under deployment in the area of Lavrion (see https://www.greeknewsagenda.gr/daedalus-supercomputer/) The project aims to meet national and European artificial intelligence (AI) demands in areas such as health, culture, language, and sustainability. Pharos represents a **€30M** investment and involves two key institutional partners of ACG, Demokritos and Athena Research Center (see https://www.athenarc.gr/en/news/one-first-seven-ai-factories-eu-be-established-greece-pharos-places-greece-artificial).

Space industries: In July 2024, the Ministry of Digital Governance signed an agreement with the European Space Agency and Open Cosmos to launch its first constellation of seven mini-satellites, part of **a €200 million program** to boost Greece's space capabilities and space industry. According to the program which is co-funded by Greece and the EU, the satellites will be built and operated Greece and will be launched in 2026 (Enterprise Greece, 2024).

Developments in the StartUp Ecosystem in 2024

- Artificial Intelligence, Biotechnology and Health Tech are the most funded sectors in 2024 (Found.ation,2024)

- More than **90 companies were funded in 2024 for a total amount of €555 million**, up 15% since 2024 (Found.ation,2024).
- The Gender gap in financing persisted also in 2024: out of the 90+ companies funded only 24% of these companies had a woman among their founders, and there were only 4 all-female founder teams ((Found.ation, 2024).
- Five new Venture capital funds were created in Greece in 2024 with funding primarily offered by the Hellenic Development Bank of Investments (HDBI), raising the number of active Venture Capital Funds operating in Greece to more than 30, out of which 17 focusing on startups. ((Found.ation, 2024),
- There were only 2 startup Exits in 2024. Of those two, the BETA CAE Systems International AG by Cadence Design Systems for $1.24 billion marks the largest exit in Greek business history (Found.ation, 2024). BETA CAE is a key player in simulation software for the automotive and aerospace sectors.

4. Economic Growth in ICT and Cybersecurity

In 2024, Greece's sectors of Information and Communications Technology (ICT) and Cybersecurity, have experienced notable expansion, spurred by targeted government initiatives, increased private investments, and strong backing from the European Union (EU). Greece's digital transformation journey and commitment to strengthened cybersecurity measures are solidifying its position as an active and forward-thinking participant in the digital economy. Sustained investment and adherence to EU regulations will be essential to maintaining this positive trajectory and fostering a secure, resilient digital ecosystem for all involved.

Economic Growth in ICT and Cybersecurity

The Greek ICT market is projected to reach $7.75 billion in 2024, with expectations to grow to USD 13.96 billion by 2029, reflecting a Compound Annual Growth Rate (CAGR) of 12.5% during the forecast period. (Mordor Intelligence) This growth is primarily fuelled by digital transformation initiatives and strong governmental support for technological advancements.

In the cybersecurity sector, revenue is expected to reach $143.40 million in 2024, with a projected CAGR of 7.81% from 2024 to 2029, resulting in a market volume of USD 208.90 million by 2029. (Statista) This expansion is driven by the increasing adoption of digital technologies and the corresponding need for robust security measures.

Historical Comparison

Comparing these figures to previous years, the ICT market has shown a steady upward trajectory. In 2022, the ICT market in Greece was valued at approximately $6.7 billion, accounting for 2.84% of the country's GDP. (Trade.gov) The projected increase to $7.75 billion in 2024 indicates a significant growth rate, underscoring the sector's expanding role in the national economy.

Similarly, the cybersecurity market has demonstrated consistent growth. The anticipated revenue of USD 143.40 million in 2024 represents a substantial increase from previous years, highlighting the escalating importance of cybersecurity in Greece's digital landscape.

Investment Trends

The Greek government has been proactive in investing in digital infrastructure and services. Notably, the "Greece 2.0" plan, part of the Recovery and Resilience Facility, includes a digital transformation project for 2023-2027 worth €3.4 billion. (Mordor Intelligence) This initiative aims to enhance digital capabilities across various sectors, including public administration, healthcare, and education.

Private sector investments have also surged, with companies increasingly adopting cloud solutions and advanced technologies to improve efficiency and scalability. In 2023, 23.6% of Greek enterprises purchased computing services such as email, storage, and security, indicating a growing trend towards digitalization. (Mordor Intelligence)

EU-Funded Projects

The European Union has played a pivotal role in supporting Greece's digital transformation. In December 2023, the European Commission adopted an amendment to the Digital Europe work programmes for 2024, assigning €762.7 million in funding for digital solutions to benefit citizens, public administrations, and businesses. Of this, €214 million is earmarked for

cybersecurity to enhance the EU's collective resilience against cyber threats. (Digital Strategy EU)

Additionally, **the EU's Cohesion Policy has allocated over €**14 billion for digital investments during the 2014-2020 period, complemented by national and private funding. These investments focus on supporting the digitalization of firms, expanding access to e-services, promoting digital skills, and rolling out broadband networks in remote and rural regions. (European Commission)

Industrial Projects and Initiatives

Several industrial projects have been initiated to bolster Greece's ICT and cybersecurity sectors. The establishment of the National Cybersecurity Authority in 2024 aims to prevent and manage cyber-attacks, ensuring an elevated level of cybersecurity in line with EU obligations. (Kalaw)

Furthermore, Greece has been implementing strict cybersecurity measures in compliance with new EU directives, impacting approximately 3,000 public and private entities. These measures introduce mandatory protocols and establish significant fines for non-compliance, underscoring the country's commitment to strengthening its cybersecurity framework. (Greek City Times)

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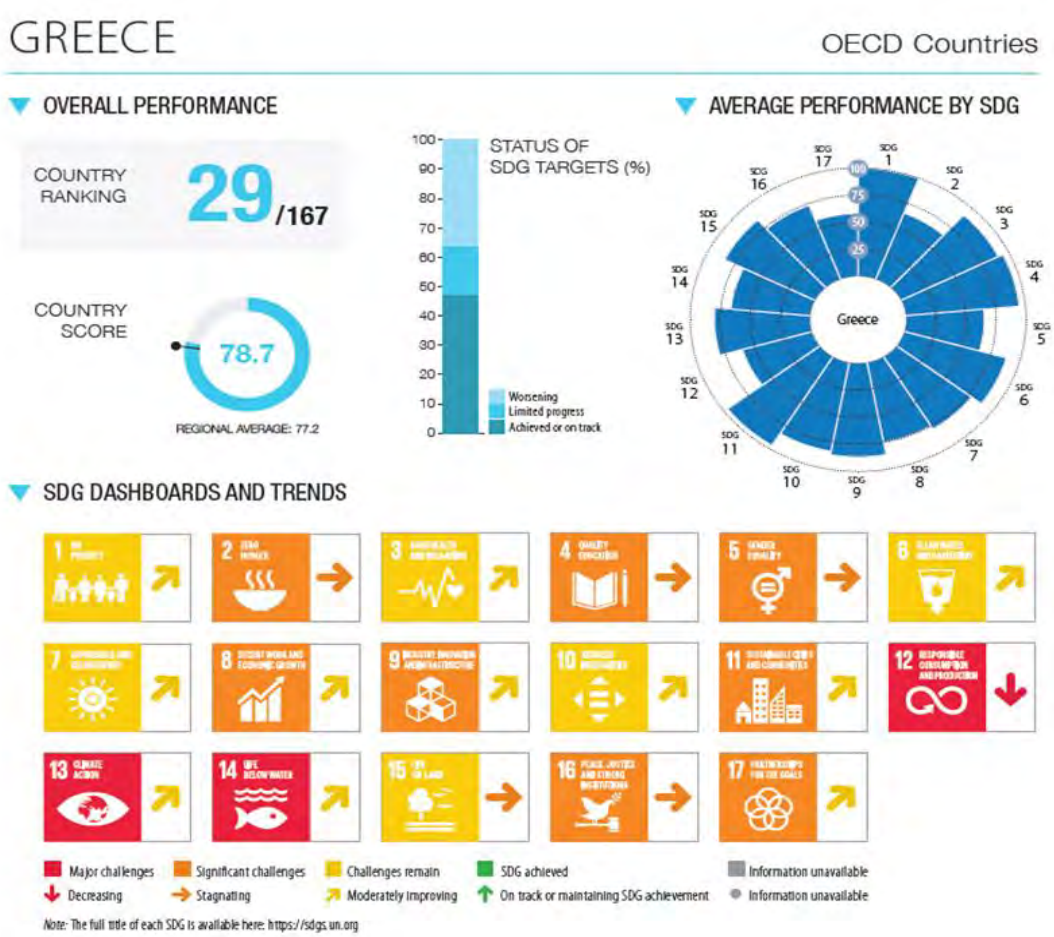
5. Sustainability at glance – Progress in 2023-2024

The sustainability performance and related developments in the country are depicted to a big extent in the scoring of the progress made in relation to the UN 17 Sustainable Development Goals (SDGs). Since 2016, when the United Nations 2030 Agenda for Sustainable Development and the UN 17 SDGs were adopted, the annual global edition of the Sustainable Development Report (SDR) has provided the most up-to-date data to track and rank the performance of all UN member states on the SDGs, including Greece.

In the latest, Sustainable Development Report 2024, on the performance of the Sustainable Development Goals (SDGs) in the 193 UN countries, issued in June 2024, Greece scores 78.7 out of 100, is above the regional average (77.2 for OECD countries) and is placed 29th globally. However, Greece scores below most of the other EU member states with the exceptions of just 6 EU member state countries.

Overall, the rating for Greece in the 2024 SDR, indicates limited progress with remaining or significant challenges for most SDGs, stagnation with significant challenges for 5 SDGs and deteriorating conditions for SDG12. Despite the fact that Greece demonstrates improvement in the overall rating, from 32nd place in the 2022 global SDR in the 29th position in the SDR 2024, the Sustainable Development Report of 2022 had identified 5 SDGs on track, while no SDGs are rated as achieved or on track in the latest SDR 2024.



Source: UN Sustainable Development Report 2024

The Sustainable Development Report 2024, introduces a new group of indicators, the 16 spillover indicators, related to how one country's efforts to achieve SDG targets jeopardize other countries' ability to do so. The new index addresses the countries' support to UN-based multilateralism and indicates the negative international spillovers. In this new index, Greece ranks 165th out of 193 countries ranking 57.2 out of 100. This score can be attributed to the deteriorating performance of SDG12 *Responsible Consumption and Production*, and SDG11 *Sustainable Cities and Communities* – Improving with significant challenges. Particularly important are the indicators of a. air pollution associated with imports (DALYs per 1,000 population); b. Average CO_2 emissions per km from new passenger cars (in gr); c. nitrogen emissions associated with imports (kg/capita); and d. non-recycled municipal solid waste (kg/capita/day), that can be attributed to poor performance on municipal waste and sewage management, low rates of recycling, increased imports of goods, carbon and nitrogen emissions from transportation and industry.

SDGs with significantly lower scoring in comparison to the OECD countries include:

- SDG1 *No Poverty* – Improving with remaining challenges: Although moderate progress is reported, the proportion (%) of population living below the national poverty line remains at 18.9% that is significantly high in comparison to the EU and the OECD average. Greece has demonstrated increase in this percentage after 2020 and has retained very similar percentages in the past 3 years. According to the ELSTAT SDG 2030 Indicators and Statistics , the ELSTAT Monitoring Report on SDGs in Greece 2024 people at risk of poverty or social exclusion are 26.1%, while risk of energy poverty is also high with population unable to keep home adequately warm reaching 19.2%. Housing cost overburden rate remains the highest in Europe affecting 31% of the population in cities and 24.7% in rural areas in Greece.

- SDG11 *Sustainable Cities and Communities* – Improving with significant challenges, with the highest rates of road traffic deaths in the EU; premature deaths due to exposure to fine particulate matter ($PM_{2.5}$) that is about 100 per 100 000 people; 20% of people living in households severely affected by noise; low rate of recycling rate of municipal waste (below 20% of total municipal waste).

Stagnating conditions with significant challenges are identified in the SDGs:

- SDG2 *No Hunger*: The food security related stress cause by the war in Ukraine and the climate change impacts on agricultural production, in combination with the impacts of years of recession in the country contribute to the bad performance of SDG2. Furthermore, agricultural production in Greece heavily depends on non-sustainable agricultural practices, with the land cover of organic farming accounting for just 10.2% of the overall farmland. As a result, the impacts of climate change are more intense and affect food production, especially of native crops. The performance of SDG2 is further affecting the performance of SDG1 and vice versa.

- SDG4 *Quality Education*: No significant improvement is noticed in the sector of education. However, the newly introduced law allowing for the establishment of non-public non-profit universities in the country is expected to positively affect the performance of this goal. In addition, there are significant efforts on digitization of education at all levels.

- SDG5 *Gender Equality*: In 2024, Greece scored 59.3 out of 100 and dropped to 3rd place from the end among the European countries based on the EU Gender Equality Index, with the European average being 71 out of 100. The result is attributed amongst other

indicators to low percentage of women in managerial and leading positions (30.6%), to the gender employment gap, that is the difference between the employment rates of men and women aged 20 to 64 (19.8%) and the gender pay gap, but also to potential lack of efficient mapping of the indicators in all sectors.

The impact of the new law on Equality in civil marriage that allows for marriages between people of the same gender is a positive effort towards gender equality, however, the impact of the law in the performance of SDG5 is not yet assessed.

- SDG15 *Life on Land*: Greece is a hotspot of biodiversity, hosting a big number of endemic species and a wide variety of habitats, the conservation of which is challenging. Although the habitat conservation status has improved (almost 40% of the land is protected), challenges remain and include the protection of species, risk of severe soil erosion by drought and water, the climate change impacts on natural ecosystems, fire risk and deforestation as well as the implementation of conservation measures in the protected forest and grassland areas. The existing management plans in protected areas are limited. In addition, there is need to better mainstream biodiversity into economic sectors, such as supporting agri-forest initiatives and integration of biodiversity concerns into spatial planning.
- SDG16 *Peace, Justice, and Strong Institutions*: the existing challenges relate to public trust to administration and judicial issues. Additionally, the indicator 'population reporting occurrence of crime, violence or vandalism in their area' was close to 20% in 2023. Greece scores 49/100 and ranked 59/180 countries according to Transparency International's Corruption Perceptions Index (CPI). As a result, Greece is placed amongst the 4 most corrupted countries in the EU. Although Greece has improved its position in the World Press Freedom Index issued by the Reporters Sin Frontiers, from place 107 in 2023 to 88 in 2024, remains last among the EU countries for the 3rd consecutive year. The reasons for this ranking are contributed by commentators to the following reasons: political attempts to undermine the independence of the investigation into the surveillance scandal, the so-called Strategic Lawsuits Against Public Participation (SLAPPs), and media concentration by large privately owned media groups resulting in weak pluralism. In March 2024, the EU adopted a new Anti-SLAPP law for the protection of journalists and human rights defenders, the results of which are not yet assessed for any of the EU member states.

SDGs demonstrating progress with major challenges are:

- SDG13 *Climate Action*: The Mediterranean region and Greece is a hotspot of climate change, thus significantly affected by climate change impacts. Therefore, climate action is prioritized and includes mitigation, adaptation and resilience building options. On mitigation, net greenhouse gas emissions (in tons per capita) and the Net carbon removals from the land use, land use change and forestry (LULUCF) sector (in million tons of CO_2 equivalent) have dropped in 2024, while the Average CO_2 emissions per km from new passenger cars (in gr CO_2 per km) are demonstrating reducing trends. Following the EU Climate Law, Greece has adopted the National Climate Law 4936/2022 on Transition to climate neutrality and adaptation to climate change, emergency provisions to address the energy crisis and protect the environment. The main aim is the improvement of the level of adaptation and resilience to climate change in the country, ultimately targeting to achieve climate neutrality by 2050. Intermediate climate goals for the years 2030 and 2040 are defined as follows: Reduction of net anthropogenic greenhouse gas emissions by at least

55% and by 80%, respectively. The revised National Energy and Climate Plan (NECP) constitutes a Strategic Plan for Climate and Energy and presents a detailed road map for the achievement of comparable Energy and Climate Goals towards the goal of climate neutrality in 2050 and the initial milestone in 2030. In addition, Plans on Adaptation to Climate Change are conducted in all 13 regions of the country and are followed by relevant Strategic Implementation Plans. Activities related to the implementation of Climate Legislation are ongoing and on track on national level.

- SDG14 *Life below water*: Globally the mean surface seawater acidity continues to drop reaching a historical pH low of 8.047, while eutrophication of marine waters is increasing. In Greece in 2023, 0.6% of marine waters are affected by eutrophication (% of exclusive economic zone). The vast majority, close to 100% of bathing sites, coastal and inland, are characterized by excellent water quality. In addition, 2024 saw important developments in relation to protection of the sea ecosystems and biodiversity. Greece hosted the 9th World Our Ocean Conference during which the establishment of 2 new marine national parks, one in the Ionian and one in the Aegean, was announced by the Greek Prime Minister, increasing the size of marine protected areas by 80% and achieving the 30 by 30 biodiversity goal for the protection of the oceans (protecting 30% of the ocean area and biodiversity by 2030). In addition, Greece has become the first country in the EU to announce a ban on bottom trawling in all its national marine parks by 2026 and in all marine protected areas by 2030. The country has also announced funding of €780m for the protection of its "diverse and unique marine ecosystems".

SDGs demonstrating improvements with remaining and significant challenges are:

- SDG3 *Good Health and Well-being*: reduced rates of under-5 mortality rate (per 1,000 live births), suicide mortality rate (per 100,000 population), while the self-perceived health by level of perception (%) in 2023 is reported very high. However, existing challenges include the smoking prevalence (% of population aged 15 or over) and the self-reported unmet need for medical care (% of population aged 16 and over), which are amongst the highest in the EU.
- SDG6 *Clean Water and Sanitation*: The SDG is at very good status in Greece. In 2024, people living in households with basic sanitary facilities (such as bath, shower, indoor flushing toilet) is close to 100%, while more than 90% of the population is connected to at least secondary wastewater treatment. Challenges include the Water exploitation index (WEI+), that measures total water consumption as a percentage of the renewable freshwater resources available for a given territory and period and is the 3rd highest in the EU, close to 15%, following Malta and Cyprus fact that can attributed to natural water scarcity in all 3 countries. Increased urban flash flooding due to climate change weather extremes, introduce additional stresses and challenges for the freshwater resources and the clean water and sanitation distribution systems.
- SDG7 *Affordable and clean energy*: The Ministry of Environment and Energy has announced 434 million incentives for residential energy upgrade interventions in 2025 to improve energy efficiency in buildings. At the same time, the share of renewable energy in gross final energy consumption has reached 23% in 2024 and is following an increasing trend, while the Energy import dependency (% of imports in gross available energy) is as high as 80%. The primary energy consumption is relatively low amongst EU countries (about 2 tons of oil equivalent per capita). However, existing challenges relate to the

average domestic income that prevents 19.2% of the population from keeping their home adequately warm.

- SDG8 *Decent work and economic growth*: In 2023, the Annual growth rate (%) of real GDP per capita has seen an increase of +2.5, while unemployment rates range between 7.3% - 24.4% in males and 8.3% - 29.4% in females for age groups of 65-74 to 15-24 respectively. The overall long term unemployment rate in Greece (% of population in the labor force aged 15 to 74) in 2023 was about 6% and young people neither in employment nor in education and training (NEET) (% of population aged 15 to 29) was 19%.
- SDG9 *Industry, Innovation and Infrastructure*: Mobilizing industry for a clean and circular economy is one of the key priorities of the European Green Deal, which seeks to support and accelerate the EU's industry transition to a sustainable model of inclusive growth. Towards this goal the EU has spent an overall of 2.24 % while Greece has spent 1.5% of GDP on R&D in 2022. At the end of 2022 Greece had just 1.5% of R&D personnel as % of population in the labor force. Based on the above, Greece needs to invest in the sector of research and development, both financially and on human resource.
- SDG10 *Reduced Inequalities*: Although progress is made in relation to SDG10, significant challenges and stressors remain. The European Commission's New Pact on Migration and Asylum aims to create faster migration processes and stronger governance of migration and border policies. The Action Plan on Integration and Inclusion (2021–2027) supports migrants' inclusion in education and employment, access to health services and affordable housing. In Greece, the first-time asylum applications in 2023, reached 5900 (per million inhabitants), fact that stresses the need for relevant action. Growth rates of household expenditure or income per capita among the bottom 40% of the population and the total population (%), are noticed in Greece in the current year and reached 20.7% in 2023, while the Relative median at-risk-of-poverty gap was 22.5%.

To enhance economic growth of Greece and address the existing sustainability challenges in the business sector, the ESG (Environmental, Social and Governance) framework is adopted. ESG is related to all the non-financial risks and opportunities inherent to a company's day-to-day activities. Expanding from the ESG framework, the Corporate Sustainability Reporting Directive (CSRD) entered into force in January 2023, aiming to modernize and strengthen the rules concerning the social and environmental information that companies must report upon. The new rules will ensure that investors and other stakeholders have access to the information they need to assess the impact of companies on people and the environment and the financial risks and opportunities arising from climate change and other sustainability issues. The International ESG Monitor Survey 2024 conducted by the SEC Newgate, identified that 83% of Greeks believe that companies should act to the interest of all stakeholders. In addition, almost two-thirds of respondents (65%) stated that businesses should play a more active role in society. Finally, it worth mentioning that the top five challenges for sustainable businesses and economic activities in Greece as highlighted by respondents in the SEC Newgate survey, include: a. the rising cost of living; b. ensuring quality, affordable health care; c. strengthening the economy; d. reduction of crime and violence; e. improvement of wages and working conditions of employees. Environmental and social concerns were rated as the top priority for sustainable living in the country.

6. The Current State of Affairs of Research in Greece

From 2015 and onwards, research, for the first time, was placed at the core of Greece's reconstruction efforts with the creation and implementation of a coherent plan that had as its main objective the promotion of the knowledge economy as a new development model- the **"National Strategy for Sustainable and Fair Development 2030".**

As a direct result of the policies designed and implemented during the period 2015-2019, Greece's position has improved significantly. For example, in 2018, the Innovation Index reached 82% of the European average.

In 2023, Greece made significant strides in research and development (R&D), reflecting a commitment to innovation across various sectors. The country's R&D expenditure reached **€3.36 billion, marking a 9.5% increase from the previous year**. This investment elevated Greece's R&D intensity indicator to 1.49% of GDP, positioning the nation 14th among EU member states in this metric, according to the National Documentation and Electronic Content Centre (EKT). More specifically, according to R&D expenditure preliminary data, there is an increase in all sectors of activity: the business sector, the higher education sector, the government sector, and the sector of private non-profit institutions.

Greece ranks seventh in "Horizon Europe" participation: During the period 2021-2022, 829 projects with Greek participation were approved in the framework of Horizon Europe, 204 of which are coordinated by a Greek organization. In these projects, 505 unique Greek entities are participating, recording a total of 1,716 participations with approved funding from the European Commission amounting to **€644.72 million**.

Which Greek organisations are participating in Horizon Europe? For the 2021-2022 period, 505 unique Greek organizations (partner organizations) participated in the 829 approved Horizon Europe projects. Fifty-two organizations have taken on a coordinator role, i.e. 1 in 10. From the business sector, 59.9% of the participants are SMEs, from the higher education sector, all public universities are involved, from the public sector, all major research centres, and from the private non-profit institutions sector, all organisations active in food, ICT, bioeconomy, open science, etc.

"Horizon Europe: Pillar II "Global Challenges and European Industrial Competitiveness" Of the 829 projects approved in 2021-2022, almost three quarters (625) are under Pillar II "Global Challenges and European Industrial Competitiveness", which represents 75.4% of all projects. Pillar II projects attract 1,386 participations (80.8% of all Greek participations) and €546.48 million in funding (84.8% of all Greek funding).

According to the Rector of the National and Kapodistrian University of Athens (NKUA), Professor Gerasimos Siasos, despite all the obstacles and restrictions, our country has a significant research presence in various fields. For example, NKUA ranks among the top 30 countries in the world in basic and applied biomedical research.

According to the International Energy Agency, in 2023, Greece is focusing on enhancing its energy infrastructure by streamlining licensing processes for renewable energy projects, electricity infrastructure, and energy storage solutions. These reforms aim to accelerate the deployment of sustainable energy technologies, contributing to the country's energy transition goals. For the

future and considering the major challenges of our time, the triptych "Climate Crisis - 4th Industrial Revolution - Social Inequalities" will be the guiding principle for the design of research policy for the next decade.

Overall, there is an urgent need to fund scientific research. Consistent, systematic, and substantial public funding of research, combined with funding from private or community resources, ensures the sustainability of a national plan for research based on building the economy and the Knowledge Society. The central objective should be to secure and strengthen Greece's potential (i.e. people and research infrastructure), to promote and facilitate healthy innovative research-intensive entrepreneurship and to highlight the role of science in society by implementing flagship actions that respond to major societal challenges.

Emeritus Professor of Genetic Medicine at the University of Geneva, member of the Swiss Academy of Sciences and former President of the International Human Genome Organization (HUGO), Stylianos Antonarakis, sums it up best: "Without research, tomorrow is the same as today."

Section III: Conclusions

The IHGP studied the Current State of Affairs in various Greek economic sectors, considering the necessary transformations of the Greek economy towards full engagement with the Digital Revolution while strengthening traditional industry sectors. Its conclusions - in summary- are as follows:

- in the area of Agrifood, the new EU Common Agriculture Policy (CAP) Plan heralds a transformative production model, focusing on innovation, technology adoption, and young entrepreneurship to boost competitiveness. It emphasizes securing fair farmer incomes while prioritizing the sustainable development of rural areas and reducing agriculture's environmental footprint,
- in the area of Tourism, the sector holds immense potential for growth, driven by its rich cultural heritage, natural beauty, and strategic initiatives such as EU-funded programs and sustainable tourism in protected areas. Maritime and yacht tourism, as well as senior and health tourism, present lucrative opportunities to diversify offerings and attract high-value visitors.
- in the area of Agrifood-tourism a unified national gastronomic identity, coupled with investments in agritourism and thematic tourism programs, has the potential to make Greece a global leader in culinary tourism, benefiting both sectors significantly,
- in the area of Shipping, the sector is facing several key challenges on the path to maintaining its global leadership and securing future viability. Key challenges include a) Environmental concerns and regulatory compliance, b) rapid technological change, c) shortage of skilled and talented personnel, and d) political unrest, imposed sanctions and geopolitical tensions,
- in the area of Logistics and Transport, three main restraining factors in business activity continued to be related to the weaknesses of the public sector. Inefficient public administration is in first place, followed by the functioning of the judiciary. In third place are the discontinuities observed in state functioning. Next are the obstacles raised by the tax regime, namely its frequent changes and high taxation,
- in the area of Energy, it has become evident that Greek electricity generation relies almost equally on fossil fuels and renewable sources of energy, while wind power generation in Greece remains a dominant contributor,
- in the area of Banking, Greek banks have redefined themselves as central pillars of economic progress at a pivotal moment as Greece prepares to tackle new challenges in competitiveness, and the twin transitions to a digital and a greener economy,
- on the area of Housing, the combination of low wages and escalating property prices has made homeownership a difficult quest for most Greeks, contributing to a particularly challenging situation for Greek citizens, but the rise in supply will eventually lower the prices making the situation better.
- in the area of Capital Markets, the Greek stock market has experienced sustained growth, reflecting the strong performance and optimistic outlook for the Greek economy, while local and national investors have regained confidence in Greece, following years of skepticism.

In addition, IHGP focused on the prospects to the strengthening certain sectors of the Greek economy that have a significant growth and enjoy comparative advantages and can upgrade Greece's position in international competition. Its conclusions - in summary- are as follows:

The Draghi Report's implications for Greece: This report's relevance to Greek economic growth *per se* is rather limited, for a variety of reasons related to the report's core-periphery approach and the idiosyncratic characteristics of the Greek economy. More specifically, Greece's productivity issues are mainly related to its ageing population, public sector inefficiencies, the slow judicial system, education system rigidities, and fiscal policy constraints. In that respect, both the Pissarides Commission 2020 report and the McKinsey 2012 report (updated in 2017), offer more suitable recommendations to guide the Greek economy towards economic growth and improved debt management.

Closing the Innovation Gap in Greece: Bridging the innovation gap will require a comprehensive approach that balances local needs with global best practices. Strengthening the foundations of the innovation ecosystem through investments in education, infrastructure, and private-sector partnerships, while fostering a culture of adaptability and resilience, will be key to ensuring Greece's long-term economic competitiveness.

Innovation Ecosystem developments in Greece: In 2024 Greece is classified by the European Innovation Scoreboard as a "Moderate Innovator," ranking 24th of 27 EU member states with a summary innovation index of 77.5 vs the EU average of 27 countries. The country has made a significant improvement of 16 positions since the base year of 2017, highlighting the progress made in the past 7 years.

Growth in ICT and Cybersecurity in Greece: In 2024, Greece's sectors of Information and Communications Technology (ICT) and Cybersecurity have experienced notable expansion, spurred by targeted government initiatives, increased private investments, and strong backing from the European Union (EU). Sustained investment and adherence to EU regulations will be essential to maintaining this positive trajectory and fostering a secure, resilient digital ecosystem for all involved.

Sustainability at a glance in Greece: In the latest, Sustainable Development Report 2024, on the performance of the Sustainable Development Goals (SDGs) in the 193 UN countries, issued in June 2024, Greece scores 78.7 out of 100, slightly above the regional average (77.2 for OECD countries) and is placed 29th globally. Overall, the rating for Greece in the 2024 SDR, indicates limited progress with remaining or significant challenges for most SDGs.

Research in Greece: There is an urgent need to fund scientific research. The central objective should be to secure and strengthen Greece's potential (i.e. people and research infrastructure), to promote and facilitate healthy, innovative, research-intensive entrepreneurship and to highlight the role of science in society by implementing flagship actions that respond to major societal challenges.

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