



European Construction Sector Observatory

Country profile **Greece**

October 2021



In a nutshell

In 2020, Greece's GDP stood at EUR 168.5 billion, representing a decrease by 22.1% from the 2010 level. It has also declined annually by 8.2%, which reflects the impact of the global COVID-19 pandemic on the country's economy.

The **number of enterprises** in the broad construction sector in Greece stood at 120,734 in 2020¹, representing a decrease of 32.3% since 2010. This was due to declines in the number of enterprises in the manufacturing (-51.7%), the narrow construction (-34.8%) and the architectural and engineering activities (-29.8%) sub-sectors, offsetting an increase in the real estate activities sub-sector (+42.4%), over the 2010-2020 period.

Number of enterprises
in the real estate
activities sub-sector
between 2010 and 2020  **42.4%**

In parallel, the **volume index of production** in the broad construction sector witnessed a decline of 36.6% over the 2015-2020 period. This was due to declines in the volume index of construction of buildings (-37.8%) and the construction of civil engineering (-35.9%) over the same period.

Similarly, the total **turnover** of the broad construction sector reached EUR 17.1 billion in 2018, representing a 25.3% decline compared to 2010. Furthermore, in 2020 it increased to EUR 17.8 billion, representing 4.2% increment from 2018, but 22.2% decline from 2010.

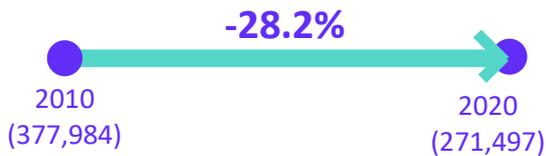
Additionally, the **gross operating surplus** of the broad construction sector amounted to EUR 1.9 billion in 2018, representing a 65.3% decline from the 2010 level. The **gross operating rate**² of the

broad construction sector, which indicates sector's profitability, reached at 14.2% in 2018, slightly below the 2010 level (14.8%) and also below the 2018³ EU-27 average (16.7%). This may be partly explained by the recently increasing **construction cost index**, which grew by nearly 100% in May 2021 in comparison to the previous year, following a continuous decline of 7.0 index points (ip) over the 2010-2018 period. This is partly explained by the economic recovery of the country from the COVID-19 pandemic. Similarly, the **gross operating surplus** of the broad construction sector recorded a decline of 53.6% over the period 2010-2017, reaching EUR 2.5 billion⁴. This decline was primarily driven by a decrease in the manufacturing (-of 77.3%), narrow construction (-57.3%) and architectural and engineering activities (-55.1%) sub-sectors. Correspondingly, the **gross operating rate**, an indicator of the sector's profitability, stood at 14.9% in 2017⁵, representing a decrease from 2011⁶ levels (20.7%).

Gross operating surplus
of the narrow
construction sub-sector
between 2010 and 2017  **57.3%**

In terms of employment, there were 271,497 **persons employed** in the broad construction sector in 2020⁷, representing a 28.2% decrease since 2010. This was due to declines in the manufacturing (-42.4%), the narrow construction (-33.8%) and the architectural and engineering activities (-15.3%) sub-sectors, offsetting an increase in the real estate activities sub-sector (+73.5%), over the 2010-2020 period.

Number of persons employed in the Greek broad construction sector



The **number of households** in Greece in 2020 reached 4.4 million units, representing a 0.8% growth from 2010 levels.

Number of households between 2010 and 2020



Additionally, the continuously declining **mortgage interest rates** since 2011 (reaching 2.0% in 2020), coupled with the increasing urbanisation rate and rising household income, contributed to a strong housing demand, which drove the housing prices up in 2020. According to Bank of Greece, house prices in Greece's urban areas rose by 3.4% during the year to the third quarter of 2020. However, this is comparatively lower than the previous year (8.5%). The annual slowdown in housing prices can be attributed to the imposition of strict lockdown measures across the country, in order to contain the COVID-19 pandemic. Foreign demand, which had been the driver of the Greek housing market, has also plunged. As a result, the property market accounted for a 25.3% share of total foreign direct investments (FDI) in Greece, down from 32.3% in the previous year. In order to uplift the housing market and the construction sector, the government introduced the **Reduction of the Single Property Tax (ENFIA)** measure to help reduce the tax burden.

Greece's National Recovery and Resilience Plan (NRRP), aiming to deploy funds amounting to EUR 30.5 billion in grants and loans, includes urban regeneration investment projects and renovation plans for upgrading the energy efficiency of residential buildings.

The plan includes providing support for the green transition through investments of EUR 1.3 billion in the energy-efficient renovation of more than 100,000 residences, including for low-income households. The country will invest EUR 160.0 million for the development of 5G networks, EUR 1.3 billion in the digital transformation of the public sector and another EUR 375.0 million for the digitalisation of businesses, promoting the integration of digital technologies in SMEs. Furthermore, as per the plan, the country will invest more than EUR 500.0 million to promote the digital transformation of the education and health system, while nearly EUR 750.0 million will be invested in digital upskilling⁸.

With regards to **non-residential construction and infrastructure**, there are 118 projects in progress, but not yet funded, in Greece's infrastructure pipeline. These projects are collectively valued at EUR 43.4 billion. They comprise of energy projects, railways and motorways, tourist infrastructure and waste management projects.

Presently, the Greek construction sector is hindered by the slow intake of innovations. As per **European Investment Bank Investment Survey (EIBIS) 2020**, the share of Greek construction firms reporting 'no innovation' was the highest (82.0%) in comparison with services (77.0%), manufacturing (58.0%) and infrastructure (59.0%) sectors. In this regard some initiatives supporting the digital transformation of the sector are worth highlighting, such as the establishment by the Ministry of Environment and Energy and the Secretary General of Spatial Planning and Urban Environment of an Interministerial Group for the Promotion of the modelisation of BIM construction information.

Following the policy and investments initiatives taken by the government, the infrastructure and housing market are expected to drive the growth of the construction sector. This will support its short term and gradual recovery.

Table of Contents

In a nutshell	2
1 Key figures	5
Construction market.....	5
Productivity	6
Turnover and profitability	6
Employment	7
2 Macroeconomic indicators	9
Economic development.....	9
Demography and employment.....	9
Public finance	9
Entrepreneurship and access to finance	10
3 Key economic drivers of the construction sector	12
Business confidence	12
Domestic sales	12
Export of construction-related products and services	13
Access to finance in the construction sector.....	13
Access to housing	14
Infrastructure.....	16
4 Key issues and barriers in the construction sector	17
Company failure	17
Trade credit	17
Late payment.....	18
Time and cost of obtaining building permits and licenses	18
Skills shortage	19
Sector and sub-sector specific issues	19
5 Innovation in the construction sector	22
Innovation performance.....	22
Eco-innovation and digitalization	22
6 National and regional regulatory framework	25
Policy schemes.....	25
Building regulations.....	26
Insurance and liability-related regulations.....	27
7 Current status and national strategies to meet Construction 2020 objectives	28
TO 1 – Investment conditions and volumes	28
TO 2 – Skills.....	30
TO 3 – Resource efficiency / Sustainable construction	31
TO 4 – Single Market	32
TO 5 – International competitiveness	33
8 Outlook	35

1

Key figures

Construction market

The **number of enterprises** in the broad construction sector in Greece totalled 120,734 in 2020⁹ (Figure 1), representing 32.3% decline from 2010 levels. With regards to the sub-sectors, the manufacturing sub-sector experienced the largest drop (-51.7%) in the number of enterprises over the 2010-2020 period, followed by the narrow construction (-34.8%) and the architectural and engineering activities (-29.8%) sub-sectors. On the contrary, the real estate activities sub-sector reported an increase of 42.4% in the number of enterprises, over the same period.

In 2020, the narrow construction sub-sector accounted for 55.5% (67,059) of the total number of enterprises in the broad construction sector in Greece, followed by architectural and engineering activities (30.9%, i.e. 37,355 enterprises), the real estate activities (7.0%, i.e. 8,401 enterprises) and the manufacturing (6.6%, i.e. 7,919 enterprises) sub-sectors.

Number of enterprises
in the broad
construction sector
between 2010 and 2020

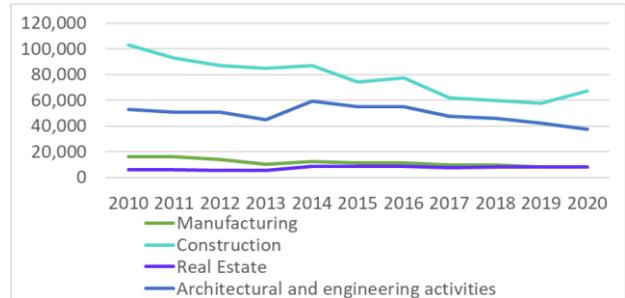
↓ 32.3%

The **volume index of production** in the broad construction sub-sector recorded a decline of 36.6% over the 2015-2020 period (Figure 2). This was due to the declines experienced in the volume index of production in the construction of buildings (-37.8%) and in the construction of civil engineering (-35.9%) over the same period. The overall decline can be partially attributed to the COVID-19 pandemic.

Volume index of
production in the
construction of buildings
between 2015 and 2020

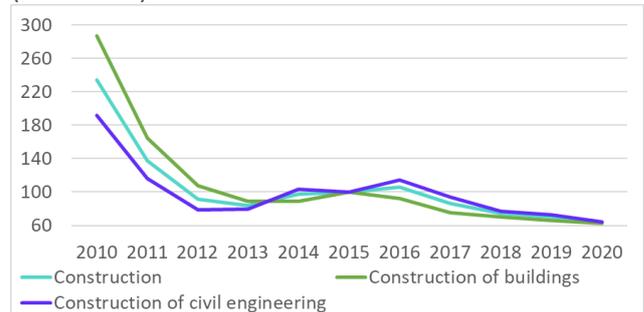
↓ 36.6%

Figure 1: Number of enterprises in the Greek broad construction sector between 2010 and 2020



Source: Eurostat, 2021.

Figure 2: Volume index of production in the Greek construction sector between 2010 and 2020 (2015=100)



Source: Eurostat, 2021.

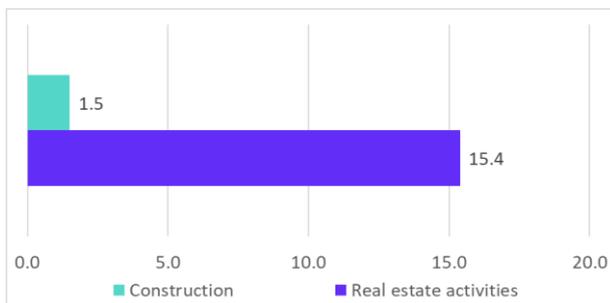
The **total added value at factor cost¹⁰** of the broad construction sector amounted to EUR 4.1 billion in 2020, representing 54.7% decline from 2010 levels. The narrow construction sub-sector accounted for a major share of this total (49.1%, i.e. EUR 2.0 billion), followed by the manufacturing (19.4%, i.e. EUR 789.6 million), the architectural and engineering activities (17.0%, i.e. EUR 691.8 million) and the real estate activities (14.6%, i.e. EUR 594.2 million) sub-sectors.

All sub-sectors witnessed a decline in the total added value at factor cost, with the narrow construction sub-sector being the highest (-62.8%), followed by the manufacturing (-62.5%) and the architectural and engineering activities (-46.0%) sub-sectors, over the 2010-2020 period. However,

in the real estate activities sub-sector it increased by 145.9% over the same period.

The **share of gross value added** of the broad construction sector in the GDP reached 16.8% in 2018¹¹, slightly above the 2018 EU-27 average (16.5%). Amongst the sub-sectors, the share of gross value added in the real estate activities and the narrow construction sub-sectors stood at 15.4% and 1.5% in 2020 (Figure 3).

Figure 3: Gross value added as a share of GDP in the Greek broad construction sector in 2020 (%)



Source: Eurostat, 2021.

Greece is composed of 13 NUTS 2 regions. However, the gross value added is mostly concentrated in the region of *Attiki* (where the capital city of Athens is located). In 2018¹², the region of *Attiki* accounted for 38.3% of the gross value added in the narrow construction sub-sector. This was followed by the Central Macedonia (*Kentriki Makedonia*) and Peloponnese (*Peloponnisos*) regions, which contributed 14.2% and 5.9%, respectively. In terms of the real estate activity sub-sector, in 2018¹³ the region accounting for the highest share in gross value added was *Attiki* with a 58.7% share. This was followed by the Central Macedonia and Peloponnese regions, which accounted for 10.8% and 4.3%, respectively.

Productivity

Apparent labour productivity¹⁴ in the Greek broad construction sector reached EUR 15,127 in 2018¹⁵, 29.1% below the 2011 level¹⁶. This is also below the 2018¹⁷ EU-27 average of EUR 51,960.

This decline was reflected in all sub-sectors, except the real estate activities sub-sector. The apparent labour productivity in the narrow construction sub-sector reached EUR 11,876 in 2020, representing the highest decline (46.3%) since 2010. Similarly, in the architectural and engineering activities sub-sector it reached EUR 12,919 in 2020,

representing a 36.4% decline since 2010. In the manufacturing sub-sector, it reached EUR 25,684 in 2020, witnessing 34.9% decline from 2010. Contrarily, in the real estate activities sub-sector, apparent labour productivity reached EUR 31,571 in 2020, representing a growth of 41.6% since 2010.

Apparent labour productivity in the real estate activities sub-sector between 2010 and 2020 **↑ 41.6%**

According to European Investment Bank Investment Survey (EIBIS) 2020, around 62.0% of the firms in Greece were operating at or above full capacity, higher than previous year's report (53.0%). The share of such firms in the construction sector was comparatively lower than services and infrastructure sectors¹⁸.

Figure 4: Apparent labour productivity in the broad construction sector in Greece between 2010 and 2020 (EUR k)



Source: Eurostat, 2021.

Turnover and profitability

The total **turnover** of the broad construction sector in 2018 amounted to EUR 17.1 billion, a 25.3% decline compared to 2010. However, it increased to EUR 17.8 billion in 2020, representing a 4.2% increment from 2018, but a 22.2% decline from 2010. In 2020, the narrow construction sub-sector, accounted for 64.8% (i.e. EUR 11.6 billion) of the total turnover in the broad construction sector, followed by the manufacturing (16.4%, i.e. EUR 2.9 billion), the architectural and engineering activities (9.5%, i.e. EUR 1.7 billion) and the real estate activities (9.3%, i.e. EUR 1.7 billion) sub-sectors. Over the 2010-2020 period, the architectural and engineering activities sub-sector witnessed 50.8% decline in total turnover, followed by the manufacturing (-43.6%) and the narrow construction (-16.1%) sub-sectors. Lastly the total

turnover in the real estate activities sub-sector increased by 214.4% over the same period.

Turnover of the broad construction sector between 2010 and 2020 ↓ 22.2%

The **gross operating surplus** of the broad construction sector amounted to EUR 1.9 billion in 2018, 65.3% below the 2010 level. The architectural and engineering activities sub-sector accounted for the highest share of the total gross operating surplus (31.7%, i.e. EUR 587.2 million), followed by the narrow construction (29.1%, i.e. EUR 538.3 million), the real estate activities (19.9%, i.e. EUR 369.4 million) and the manufacturing (19.3%, i.e. EUR 357.5 million) sub-sectors. Over the period 2010-2018, gross operating surplus in the real estate activities sub-sector registered an increase of 207.1%, whereas in the narrow construction, the manufacturing and architectural and engineering activities sub-sectors it declined by 83.0%, 64.3% and 44.1% respectively.

The **gross operating rate** of the broad construction sector¹⁹, which gives an indication of the sector's profitability, stood at 10.8% in 2018, significantly below the 2011 level (20.7%)²⁰, and the 2018 EU-27 average (16.7%). The gross operating rate in the architectural and engineering activities sub-sector stood at 28.3%, making it the most profitable sub-sector in 2018. It was followed by the real estate activities (22.1%), the manufacturing (10.8%) and the narrow construction (5.3%) sub-sectors.

The **construction cost index** over the 2015-2020 period decreased by 0.7% in 2020. This decrease was mainly driven by a 0.7% decrease in both the labour cost index and the input prices for materials index over the same period (Figure 5). However, following the recovery of the economy, there is a high demand for construction materials, which drove the prices up by 100.0% between May 2020 and May 2021²¹.

Figure 5: Construction cost index between over 2010 and 2020 (2015=100)



Source: Eurostat, 2021.

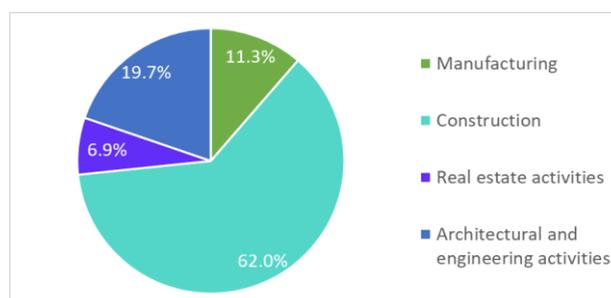
Employment

In 2020²², there were 271,497 **persons employed** in the broad construction sector, representing a 28.2% decline from 2010. The narrow construction sub-sector employed the majority of the total construction workforce in 2020 (62.0% i.e. 168,388 persons). This was followed by the architectural and engineering activities (19.7%, i.e. 53,547 persons), the manufacturing (11.3%, i.e. 30,741 persons) and the real estate activities (6.9%, i.e. 18,820 persons) sub-sectors.

Number of people employed in the broad construction sector between 2010 and 2020 ↓ 28.2%

Over the 2010-2020 period, the number of persons employed in the real estate activities sub-sector increased by 73.5%, whereas in the manufacturing, the narrow construction and the architectural and engineering activities sub-sectors, it decreased by 42.4%, 32.8% and 15.3% respectively.

Figure 6: Percentage of persons employed per construction sub-sector in Greece in 2020



Source: Eurostat, 2021.

In parallel, the number of **self-employed workers** in the narrow construction sub-sector declined by 41.4% over the 2010-2020 period. It accounted for 5.5% of all the self-employed workforce in the general economy in 2020. Similarly, the number of self-employed workers in the real estate sub-sector decreased by 59.1%, over the same period. In 2020, it represented 0.2% of all the self-employed workforce in the general economy.

Number of self-employed workers in the real estate activities sub-sector between 2010 and 2020

↓ 59.1%

The **number of full-time employees** in the narrow construction, manufacturing and real estate activities sub-sectors decreased by 56.3%, 22.0% and 19.6%, respectively, over the 2010-2020 period. However, over the same period, the **number of part-time employees** in the manufacturing sub-sector increased by 21.4%, whereas in the narrow construction sub-sector it decreased by 51.5%.

Regarding **employment by specific occupation** in the manufacturing sub-sector, the number of service and sales workers saw the highest increase

(+102.6%) over the 2010-2020 period, whereas the number of managers witnessed highest decrease (-63.8%). In the narrow construction sub-sector, the number of professionals saw the highest increase (+53.9%) over the same period, whereas the decline in number of managers was the highest (-83.3%). Lastly, in the real estate activities sub-sector, the number of technicians and associate professionals decreased by -47.4%, over the same period.

In terms of **regional employment**, in 2018²³, *Attiki* comprised of 32.9% of the total number of persons employed across all regions in the narrow construction sub-sector, followed by the Central Macedonia region, which comprised 13.7% of the total. Since 2010, the number of persons employed in both these regions has declined by 32.8% and 31.8%, respectively. Similarly, in the real estate activities sub-sector, *Attiki* comprised of 58.7% of the total number of persons employed across all regions, followed by the Central Macedonia region comprising 10.7% of the total, in 2018²⁴. However, the number of persons employed in both these regions has increased by 43.3% and 44.7%, respectively, during the same reference period.

2

Macroeconomic indicators

Economic development

Greek **GDP** reached EUR 168.5 billion in 2020, representing declines of 22.1% and 8.2% from 2010 and 2019 levels, respectively. The country's **potential GDP** stood at EUR 188.9 billion in 2020, leading to a negative **output gap** of -10.8%.

These declines can be attributed to the impact of the global COVID-19 pandemic, as a result of which the country sustained two consecutive nationwide lockdowns as containment measures – March to April and November to December, in 2020²⁵.

The **inflation rate** has also decreased annually from 0.5% in 2019 to -1.3% in 2020, remaining much below the 2020 EU-27 average 0.7%.

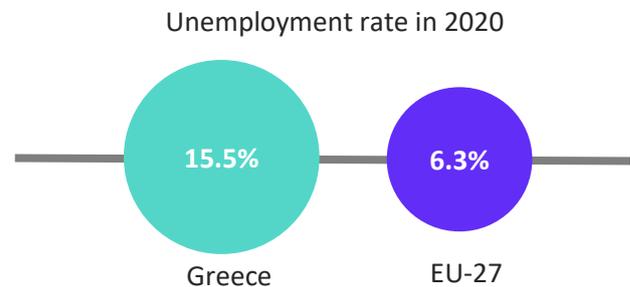
Demography and employment

The **total population** in Greece stood at 10.7 million in 2020. It is projected to decrease by 3.7% by 2030, reaching 10.3 million, and by 11.2% by 2050, reaching 9.5 million. These projections are also influenced by the **net migration**, which went negative from 2010 to 2015, and then positive from 2016 onwards – reaching 35,168 in 2019 (the highest in the decade). However, it reduced to 9,977 in 2020.

In 2020, the **working age population** in Greece made up 63.4% of the total population, slightly below the 2020 EU-27 average (64.3%). By 2030, this share is expected to have shrunk to 61.7%, and by 2050 to 53.9%. On the other hand, the **ageing population** in Greece made up 22.3% of the total population above the 2020 EU-27 average (20.6%). This is expected to reach up to 25.8% by 2030, and to 33.8% by 2050. This clearly indicates a potential increase in demand for elderly infrastructures (hospitals, care homes, access infrastructure), which could in turn provide further opportunities for the construction sector.

The overall **unemployment rate** in Greece is considered to be one of the highest in the EU-27, reaching 15.5% in 2020, well above the 2020 EU-27 average of 6.3%. While it has been decreasing since 2013 (25.5%), it remains significantly higher than the 2010 level of 11.4%. **Youth unemployment rate** (below the age of 25) stood at 35.0% in 2020, more than twice the EU-27 average (16.8%), and also higher than the 2010 level of 33.0%. This partly contributed to the emigration of young workers.

According to report published by the Hellenic Statistical Authority (ELSTAT), unemployment for young people (under 25) in Greece increased over the past year reaching 46.8% in 2021. The overall unemployment rate in Greece stood at 17.0% in March 2021 compared to 15.9% in March 2020²⁶.



Public finance

In 2020, **general government expenditure** in Greece accounted for 60.7% of GDP, which represents a significant increase from the previous year (47.9%), and the 2010 level (53.0%). It also lies above the EU-27 average (53.4%) in 2020. Greece's **general government deficit** in 2020 stood at -9.7% of GDP, much higher than the previous year (-1.1%). It was also higher than the EU-27 average (-6.9%) in 2020. For the same year, the **general government gross debt** in Greece was 205.6% of the GDP, higher than the previous year (180.5%) and the 2010 level (147.5%), and also higher than the EU-27 average in 2020 (90.7%).

Entrepreneurship and access to finance



According to the World Bank Doing Business 2020 report, Greece ranked 11th out of 190 countries in ease of starting a business in 2019. This is an improvement in comparison with previous year's ranking (44th)^{27,28}.

As per the report, starting a business in Greece requires three procedures, taking four days and costing 1.5% of income per capita²⁹.

With regards to the performance of small and medium enterprises (SMEs) in specific areas, Greece has experienced an increase in entrepreneurial activity in recent years. Particularly, during 2019, Greece's share of early-stage entrepreneurial activity increased, reaching 8.2%, supported by a moderate economic growth and the presence of new funding instruments. It is the highest recorded rate in the past decade³⁰. In 2020, this share increased by 0.4 pps reaching 8.6%.

In 2020, the Greek Ministry of Development and Investments, launched the Elevate Greece platform, which aims to offer targeted support to start-ups, making it easier to obtain information on specialised incentives and benefits. This initiative also includes a national start-up registry, which will help with monitoring the development of the start-up ecosystem at the national level³¹.

Despite these developments, the regulatory burden in Greece remains a key obstacle to entrepreneurship for SMEs and larger enterprises. Recent reforms were initiated to tackle this issue include the creation of an online platform to bring together all public sector digital services (gov.gr), the reduction of taxes and non-salary costs and the adoption of an out of court settlement mechanism³².



In terms of access to finance, Greece ranked 119th out of 190 countries for the ease of getting credit. This is a decline from previous year's ranking (99th)^{33,34}.

Access to finance is considered as one of the most important concerns for SMEs in Greece. It remains amongst the key aspects to be improved in the Greek business environment³⁵, as witnessed by the declining amount of loans to businesses.



In 2020, the outstanding loans to non-financial corporations in Greece stood at EUR 66.4 billion, representing 42.8% decline since 2010.

According to the **EIBIS 2020 report**, around 13.0% of firms were considered to be 'financially constrained', in line with the previous year (6.0%). In the general economy, the highest levels of dissatisfaction amongst SMEs regarding access to finance were with the cost of finance (12.0%) and collateral requirements (10.0%)³⁶.

According to the **Survey on the Access to Finance of Enterprises (SAFE) 2020**, 22.0% of SMEs in Greece express that access to finance continues to be their most important concern. It is the highest among EU-27 member states and slightly above the previous year (21.0%). Rising macroeconomic uncertainty and developments in the general economic outlook have negatively affected access to finance³⁷.

Furthermore, the COVID-19 pandemic had an impact on the needs and availability of financing. There have been significant increases in the need for financing such as bank loans, credit lines, leasing and equity, in comparison with the previous year. However, with regards to availability of financing, there has been significant declines in bank loans, credit lines, leasing and equity³⁸.

Equity funding for new and growing firms remains underdeveloped in Greece and lags behind other EU-27 member states. Seed, start-up and later stage venture capital investment in Greece represents less than 0.01% of GDP, compared to 0.04% of GDP in the EU-27 average³⁹.

As a measure to improve access to finance in the country, The Hellenic Development Bank, which supports micro enterprises and SMEs by making it easier for them to access funding sources to address and cover any market failures, created the **COVID-19 Loan Guarantee Fund** in 2020. This helps SMEs and micro enterprises access working capital loans by providing guarantees in a portfolio with a maximum loss amount. Its objective is to mitigate the effects of the COVID-19 pandemic on businesses by boosting their liquidity with working capital loans.

In addition, the General Directorate of Financial Services of the Ministry of Finance announced a **special purpose compensation for supporting businesses due to the outbreak of the COVID-19 pandemic** (*Αποζημίωση ειδικού σκοπού για την ενίσχυση επιχειρήσεων λόγω της εμφάνισης και διάδοσης του κορωνοϊού COVID-19*) in April 2020. The measure aims to provide financial support for those who have been financially affected by the

outbreak and spread of the COVID-19 pandemic, and for whom special and extraordinary measures have been adopted so as to prohibit or suspend their operations due to preventive and repressive reasons related to COVID-19. It aims to support the economy, economic activity and performance of Greek SMEs during the outbreak of COVID-19 pandemic.

The General Directorate of Financial Services of the Ministry of Finance also announced a support measure in March 2020 in the form of a Refundable Advance Payment to enterprises that were financially affected by the outbreak and spread of COVID-19 pandemic. The measure is a form of government loan – financing, provided with favourable terms. The main objective of this policy measure is to enhance the liquidity of small and medium-sized enterprises affected by the COVID-19 pandemic, who employ up to 500 employees and are permanently established or have their headquarters in Greece.

3

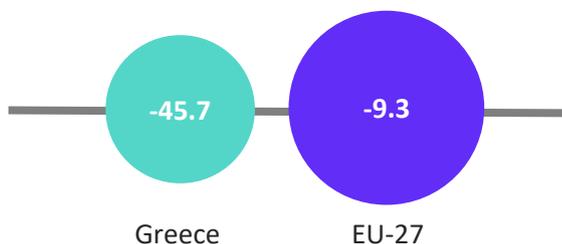
Key economic drivers of the construction sector

Business confidence

Over the 2010-2020 period, business confidence in Greece improved for all three consumer indicators. However, in comparison with the previous year, consumer and industry confidence indicators deteriorated, whereas the construction confidence indicator showed an improvement.

The **consumer confidence indicator** for Greece stood at -31.1 in 2020, higher than the 2010 level (-56.9) and lower than the 2019 level (-19.8). This is also lower than the 2020 EU-27 average (-14.6). Likewise, the **industry confidence indicator** reached -8.9 in 2020, higher than the 2010 level (-22.5) and lower than 2019 level (-0.1). This is, however, above the 2020 EU-27 average (-14.4). On the contrary, the **construction confidence indicator** increased to -45.7 in 2020, higher than the 2010 level (-55.4) and the 2019 level (-50.2). However, it was still below the 2020 EU-27 average (-9.3).

Construction confidence indicator in 2020



In parallel, following the weakened confidence in the sector, the **investment ratio** declined, reaching 11.0% in 2020, below the 2010 level (16.6%) and considerably lower than the EU-27 average of 21.8%.

In addition, **investment per worker** in the broad construction sector experienced a sharp fall, from EUR 97,215 in 2010 to EUR 17,661 in 2018⁴⁰ (-81.8%).

Domestic sales

The ranking of the most domestically sold construction products in Greece has changed over the 2010-2020 period. 'Portland cement, aluminous cement, etc.' (235112), which ranked first in 2010, moved to second rank in 2020 and 'Ready-mixed concrete' (236310), ranking second in 2010, moved to first rank in 2020. 'Prefabricated buildings of metal' (251110), which ranked third in 2010, moved to fourth rank in 2020 and 'Articles of cement, etc.' (236919), ranking fourth in 2010, moved to sixth rank in 2020. Finally, 'Marble, travertine, alabaster, etc.' (237011), ranking fifth in 2010, moved to 14th rank in 2020. The **top five most domestically sold construction products** in Greece and in the EU-27 are presented in Table 1. These represented 62.2% of total domestic construction product sales in 2020.

Table 1: Five most domestically sold construction products in Greece and in the EU-27 2020

	Greece			EU-27
	Product	Value (EUR m)	Share in construction products exports (%)	Product
1	Ready-mixed concrete (group 236310)	284.1	19.9	Other structures, etc. (group 251123)
2	Portland cement, aluminous cement, etc. (group 235112)	217.5	15.2	Ready-mixed concrete (group 236310)
3	Other structures,	180.3	12.6	Doors,

	Greece			EU-27
	Product	Value (EUR m)	Share in construction products exports (%)	Product
	etc. (group 251123)			windows, etc. (group 251210)
4	Pre-fabricated buildings of metal (group 251110)	110.4	7.7	Prefabricated buildings of metal (group 251110)
5	Doors, windows, etc. (group 251210)	96.5	6.8	Prefabricated structural components, etc. (group 236112)

Source: PRODCOM, 2021

Export of construction-related products and services

The ranking of the most exported products remained mostly stable over the 2010-2020 period. 'Portland cement, aluminous cement, etc.' (235112), 'Marble, travertine, alabaster, etc.' (237011) and 'Mortars' (236410) retained their first, second and fifth ranking, respectively, both in 2010 and 2020. 'Cement clinkers' (235111), ranking third in 2010, moved to sixth rank in 2020. 'Prefabricated structural components' (236112) ranking fourth in 2010, moved to ninth in 2020. The **top five most exported construction products** in Greece and in the EU-27 are summarised in Table 2. Together, these made up 69.1% of all construction products exports in 2020.

Table 2: Five most exported construction products in Greece and EU-27 in 2020

	Greece			EU-27
	Product	Value (EUR m)	Share in construction products exports (%)	Product
1	Portland and aluminous cement, etc. (group 235112)	135.3	26.3	Ceramic tiles and flags (group 233110)
2	Marble, etc. (group 237011)	127.6	24.8	Other structures, etc. (group 251123)
3	Doors, windows, etc. (group 251210)	34.6	6.7	Fibreboard of wood, etc. (group 162115)

	Greece			EU-27
	Product	Value (EUR m)	Share in construction products exports (%)	Product
4	Other structures, etc. (group 251123)	34.2	6.6	Doors, windows, etc. (group 251210)
5	Mortars (group 236410)	24.1	4.7	Builders' joinery and carpentry, etc. (group 162319)

Source: PRODCOM, 2021.

In terms of the **cross-border provision of construction services**⁴¹, Greece exported EUR 576.0 million of construction services worldwide in 2020, marking a 7.8% increase compared to 2010 (EUR 534.2 million). Notably, 36.8% of total exports (EUR 212.0 million) in 2020 were made to EU-27 countries. In parallel, Greece imported a total of EUR 222.0 million in construction services from worldwide in 2020, representing a decline of 8.2% since 2010 (EUR 241.7 million). Around 68.5% of the total imports (EUR 152.0 million) in 2020 were made from the EU-27 countries. Overall, Greece reported a **trade surplus** of EUR 354.0 million in 2020.

Access to finance in the construction sector

According to the **SAFE Report 2020**, the availability of financing in Greece decreased significantly compared to the previous year. The greatest decline in availability was witnessed in leasing, followed by credit lines and bank loans⁴². In fact, while 49.0% of SMEs applied for a loan (EU-27 average: 35.0%), 12.0% did not apply because of fear of rejection (EU-27 average: 4.0%).

This trend is also reflected in the country's construction sector. In particular, credit extended to the narrow construction sub-sector in Greece has been declining continuously over the 2010-2020 period, with an exception in 2013.



Credit extended to firms in the Greek narrow construction sub-sector reached EUR 5.7 billion in 2020, representing an annual decline of 22.6%. This also represents a decline of 50.1% since 2010.

Specific to the Greek construction sector, around 16.0% of the firms were considered to be financially constrained. The financing applications of around 10.0% of the construction firms were rejected⁴³.



Around 79.0% of firms in the construction sector reported the availability of finance as a long-term barrier in Greece, being highest among other sectors (infrastructure sector: 65.0%, manufacturing sector: 71.0% and services sector: 72.0%)⁴⁴.

With regards to the different attributes of access to finance, the share of firms in the construction sector in Greece dissatisfied with collateral requirements in 2020 were the highest (19.0%), in comparison with other sectors (manufacturing: 9.0%, services: 5.0% and infrastructure: 13.0%). Around 13.0% of firms in the construction sector were also dissatisfied with cost of financing⁴⁵.

In terms of access to finance, TMEDE (Engineers and Public Works Contractors Fund), which is the responsible body for issuing letters of guarantees for SMEs in order for them to participate to public tenders, signed a Memorandum of Understanding with the Hellenic Development Bank in order to facilitate access to sources of finance for freelancers as well as small and medium-sized construction enterprises composed of technical professionals. The aim, inter alia, is to create innovative support programs that could help finance the working capital for the 30,000 engineers and contractors of the TMEDE, as well as its 5,500 technical member companies⁴⁶.

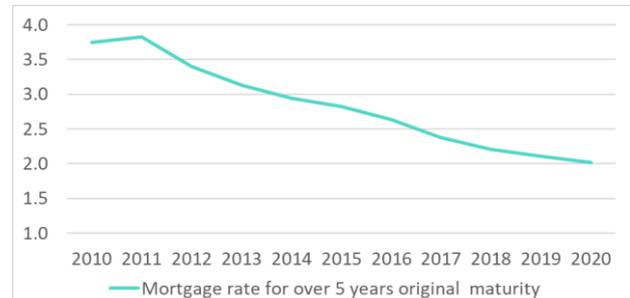
Access to housing

In Greece, the number of **households** increased by 2.2% compared to 2010, reaching 4.5 million in 2019. However, in 2020 it reduced to 4.4 million units, representing a 1.4% annual decline and an 0.8% increase from 2010 levels. At the same time, the **mean equivalised income** in 2020 stood at EUR 9,993, depicting an annual rise of 6.5%. However, this is 28.5% below the 2010 level.

In parallel, the **urbanisation rate** also grew from 76.3% in 2010 to 79.7% in 2020⁴⁷. However, the share of the total population living in densely populated areas reduced to 36.8% in 2020, compared to 43.8% in 2010. The **mortgage interest**

rates have been declining considerably since 2011 and reached a historical low of 2.0% in 2020 (Figure 7). In parallel, **housing loans to households** in Greece decreased by 34.5% over the 2010-2019 period reaching EUR 52.7 billion in 2019⁴⁸.

Figure 7: Mortgage rates for loans for over five years original maturity (%) between 2010 and 2020



Source: ECB MFI Interest Rate Statistics, 2021.

Owing to rising incomes since 2018, declining mortgage rates and growth in the urbanisation rate, housing demand in urban areas has surged in 2020. This has resulted in a rise in **house prices** but slower than in 2019. This is partly due to the imposition of strict lockdown measures across the country. According to the Bank of Greece, house prices in Greece's urban areas rose by 3.4% during the year to the third quarter 2020, less than the previous year's 8.5% growth. This is the slowest expansion in last two years⁴⁹.

The slowdown was also seen in the major cities such as Athens, which led with an annual house price increase of 5.6% in third quarter 2020, witnessed a sharp slowdown from the prior year's 11.7% growth. In Thessaloniki, the country's second largest city, house prices rose by 4.3% annually in third quarter 2020, a slowdown from an annual rise of 7.8% in third quarter 2019. In other cities, house prices' annual growth fell slightly by 0.4% in third quarter 2020, in contrast to an annual rise of 5.4% in third quarter 2019⁵⁰.

According to the Bank of Greece, house prices on average increased by 4.6% in 2020 and by 3.3% annually in first quarter 2021. Price growth in Athens and Thessaloniki was more pronounced, reaching 7.6% and 4.8% in 2020 and 5.4% and 3.7% in first quarter 2021, respectively. This shows that despite the COVID-19 restrictions and crisis, the Greek housing market proved to be resilient⁵¹.

Foreign demand, which had been driving the housing market in Greece, has also plunged due to closed borders and other COVID-19 related measures. In the first three quarters of 2020, capital inflows from abroad for the purchase of properties declined by 42.5% from a year earlier, to just EUR 593.0 million. The property market accounted for a 25.3% share of total foreign direct investments (FDI) in Greece, down from 32.3% in the previous year⁵².

The resilience portrayed by the Greek housing market was backed by the policy measures introduced by the government in order to contain the adverse effects of the pandemic. It has helped mitigate the impact of the pandemic on the property market. The government introduced pandemic support measures including job retention schemes, tax deferrals, loan guarantees and interest rate payment subsidies, which together with banks' loan moratoria provided support to households and businesses⁵³.

Amongst the measures introduced by the Greek government to support the housing market, the reduction of the single property tax (ENFIA) was noteworthy. Introduced in 2020, the ENFIA was reduced for individuals by 30.0% for properties valued up to EUR 60,000; 27.0% for those valued up to EUR 70,000; 25.0% for those valued up to EUR 80,000; 20.0% for those valued up to EUR 1.0 million; and 10.0% for properties valued more than EUR 1.0 million. A further 10.0% reduction, on average, is to be applied on all property owners 2020 onwards⁵⁴.

As a result of these measures, there was a significant growth in **building permits** which made construction activity robust in 2020. During the first nine months of 2020, the number of permits rose by 15.5% annually to 13,568 units, following annual rises of 13.5% in 2019, 10.1% in 2018 and 9.0% in 2017, according to the Hellenic Statistical Authority.

Specific to residential buildings, the building permits index grew by 178.0% over the 2015-2020 period. The building permits index for the 'One-dwelling buildings' and 'Two and more dwelling buildings' increased by 39.0% and 265.0% over the same period.

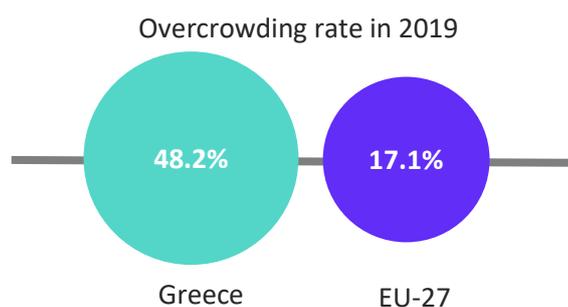
Building permits index for dwellings in residential buildings between 2015 and 2020

 **178.0%**

With regards to rentals, the indexed values of **actual rentals for housing** in Greece decreased by 7.8% over the 2015-2020 period. However, there has been an increase in demand for short-term rentals in Athens, and interest other tourist areas has grown significantly over the last few years. This has led to an increase in construction activity⁵⁵. In the centre of Athens gross rental yields on apartments are moderate, at around 4.2% for apartments of 120 square metres, but proportionately more for smaller apartments. The gross rental yield for apartments located in suburbs of Athens is slightly higher, at about 4.5%. Houses in the suburbs have very low yields, ranging from 2.6% to 3.2%⁵⁶.

The majority of buildings are **owner-occupied** in Greece. However, the share of owners has been fluctuating in the past decade. It reached 74.6% in 2020 in comparison with 77.2% in 2010. Furthermore, in 2020, 75.3% of people earning **above 60.0% of the median equivalised income** were house owners, while this percentage reached 71.5% for people earning **below 60.0% of the median equivalised income**.

Greece's **housing cost overburden rate**⁵⁷ stood at 36.2% in 2019, above the EU-27 average of 9.4%⁵⁸ and 2010 level of 18.1%, indicating issues around affordability. However, it decreased to 32.6% in 2020⁵⁹. Likewise, the **overcrowding rate**⁶⁰ in Greece stood at 48.2% in 2019, much above the EU-27 average of 17.1%⁶¹ and the 2010 level of 39.3%. In 2020, it dropped to 47.7%⁶². Lastly, the **severe housing deprivation rate**⁶³ in Greece stood at 6.0% in 2019, above the EU-27 average of 4.0%⁶⁴, but below the 2010 level of 7.6%. In 2020, it further decreased to 5.8%⁶⁵.



Infrastructure



According to the 2019 Global Competitiveness Report⁶⁶, Greece ranks 37th out of 141 economies for its infrastructure network and quality.

In particular, it performs well in terms of airport connectivity (27th), liner shipping connectivity (28th), efficiency of air transport services (35th) and quality of roads (44th). However, some of Greece's relative weaknesses include road connectivity (73rd) and efficiency of train services (70th)⁶⁷.

Infrastructure projects in Greece are generally hindered by regular slippages in preparation, execution and operation. The Greek government has prioritised the upgrade of existing regional infrastructure (regional airports, cross-border railways and ports) in the coming years. It also aims to transform the country into a European gateway

for electricity, natural gas and oil resources by launching major infrastructure projects⁶⁸.

As per Greece's **Stability Programme 2021**, high-quality investments in the context of the **National Recovery and Resilience Plan (NRRP)** are expected to advance a green and digital economy through the development and the modernisation of **infrastructure** and networks across the country⁶⁹.

As of October 2020, the number of projects either in progress or prepared but not yet funded, in the infrastructure pipeline amounts to 118 with a budget of EUR 43.4 billion. The pipeline is higher than in the past due to the addition of new high-cost projects in the preparation phase. Amongst the upcoming projects, around EUR 25.4 billion has been allocated to energy projects, EUR 8.7 billion to railways projects and around EUR 6.0 billion has been set aside for motorway projects. Tourist infrastructure and waste management projects accounted for a small part of the remaining budget, taking up about EUR 1.8 billion and EUR 1.6 billion respectively⁷⁰.

Finally, to promote sustainable and multi-modal transport, Greece's RRP includes of the deployment of more than 8,000 electric charging points and 220 green urban transport busses in Athens and Thessaloniki, an important investment programme in railways and a thorough reform of the transport sector⁷¹.

4

Key issues and barriers in the construction sector

Company failure

Business demography in the broad construction sector in Greece generally witnessed more company births than deaths over the 2015-2018⁷² period.

Specifically, in the narrow construction sub-sector, the number of **company births** increased by 11.2%, over the 2015-2018 period, reaching 2,599 in 2018. Similarly, in the real estate activities sub-sector, it recorded an increase of 134.9% over the same period, thus reaching 653 in 2018. Contrarily, in the architectural and engineering activities sub-sector, it witnessed a decline by 4.2% over the same period, reaching 1,887 in 2018.

The number of **company deaths** in the narrow construction sub-sector reached 1,234 in 2018, representing a 74.1% decline since 2015. Similarly, in the real estate activities and the architectural and engineering activities sub-sectors, the number of company deaths decreased by 61.6% and 57.9% over the 2015-2018 period, reaching 91 and 1,331 respectively, in 2018.

According to the Corporate Insolvencies in Europe report, Greece experienced 102 corporate insolvencies in 2020, representing a 4.7% decline from 2019 (107) and 46.0% decline from 2010 (189)⁷³.

Trade credit



Businesses in Greece accounted for a higher share than others in the western European region in terms of turning down requests for trade credit following the onset of the COVID-19 pandemic^{74,75}.

According to the Payment Practices Barometer report, Greece demonstrated a conservative approach to **trade credit** since a large portion of business payments are still made in cash across all the sector in the country. Although, 41.0% of businesses in Greece reported an average 40.0% increase in the total value of B2B (business to business) credit sales, credit requests amounting to 30.0% of the total value of B2B sales were refused. The refusal of credit requests was principally due to deterioration in customer creditworthiness. Trade credit is currently involved in 50.0% of B2B sales, below the western Europe average (55.0%)⁷⁶.

With regards to the purpose of using trade credit, around 38.0% of businesses reported that they use it to encourage SMEs sales on the domestic market; around 33.0% reported using it to stay competitive in the market and; around 28.0% of them said they granted trade credit as a source of short-term finance⁷⁷.

As per the **SAFE Report 2020**, the need for trade credit in Greece increased over the previous year in 2020, but that the availability trade credit decreased in comparison with the previous year. Around 45.0% of SMEs in Greece considered trade credit to be relevant for their business and 25.0% of SMEs reported having used it recently⁷⁸.

Around 12.0% of SMEs did not apply for trade credit due to fear of rejection. Out of the SMEs that applied for trade credit in 2020, 14.0% of them were rejected and around 42.0% received below the full amount in 2020⁷⁹.

Late payment



The late payment situation in the Greek economy further degenerated in 2020 compared to the previous year. Following the onset of the pandemic, late payments in Greece increased to 48.0% of the total value of B2B sales (up from last year's 28.0%). This represents an increase of 71.0% annually⁸⁰.

In 2020, around 64.0% of Greek SMEs faced late payment issues, higher than the 2019 level (62.0%). This is also higher than the 2020 EU-27 average (44.0%). Around 26.0% of SMEs faced late payment issues regularly, lower than the 2019 level (30.0%), but higher than the 2020 EU-27 average (13.0%)⁸¹.

Mirroring the trend in trade credit, the purpose of offering **longer payment terms** by businesses in Greece are generally to encourage domestic sales (as reported by 35.0% of businesses). This is followed by a share of businesses (27.0%) who did so to stay competitive on the domestic market. Lastly, around 24.0% of the businesses reported that they used offering longer payment terms as a way of providing short-term financing to clients⁸².

Around 64.0% of Greek businesses reported setting payment terms of up to 30 days on average, followed by 15.0% that set payment terms from 31 to 60 days. Around 10.0% of businesses set payment terms from 61 to 90 days and the remaining 11.0% from 90 days and above. Overall, this results in average payment terms of 50 days. Around 52.0% of businesses in Greece reported granting longer payment terms after the onset of the pandemic, most often up to 30 days longer. Around 41.0% of businesses reported no change in their payment

terms, while 7.0% of them requested shorter terms than before the pandemic, on average 10 days earlier than last year⁸³.

In 2020, nearly 50.0% of businesses reported having to wait longer to cash in their overdue invoices, (up to 26 days longer than last year). An average of 6.0% of the total value of B2B receivables was written off as uncollectable after the onset of the pandemic. Around 7.0% of the total value of receivables was still unpaid at 90 days overdue. This indicates that, on average, businesses in Greece have lost nearly 90.0% of the value of their B2B receivables that were not paid within 90 days⁸⁴.

As a **consequence of late payments** in Greece, around 74.0% reported that it affected payments to suppliers, 69.0% of them reported that it affected investments or new hiring, 59.0% of them reported that it affected production or operations and around 51.0% of them reported that it delayed repayments of loans⁸⁵.

Time and cost of obtaining building permits and licenses



Greece ranked 86th (out of 190) in "Dealing with Construction Permits", according to World Bank's Doing Business report 2020⁸⁶. This is a deterioration from previous year's ranking (39th)⁸⁷.

It requires 17 administrative procedures to build a warehouse⁸⁸ (considerably higher than the OECD high-income average of 12.7) and takes 180 days compared to the 152.3 OECD average (Table 3). The average cost of completing these formalities is marginally above the OECD high-income average, as it represents 1.9% of the warehouse value compared to 1.5% for the OECD high-income average⁸⁹.

Table 3: Construction procedures timing and costs in Greece⁹⁰

Procedure	Time to complete	Associated costs
Obtain proof of ownership, cadastral extract and cadastral plan	2 days	EUR 45.0
Obtain Topographical Survey map	10 days	EUR 1,000
Submit a petition for an archaeological clearance certificate	1 day	no charge

Obtain archaeological clearance certificate	12 days	no charge
Obtain approval of project from the Board of Architects	45 days	no charge
Obtain active fire protection approval	10 days	no charge
Obtain proof of advanced payment from the Unified Social Security Fund	2 days	no charge
Request and obtain initial permit/approval from the Municipality	16 days	no charge
Request and obtain building permit from the Municipality	15 days	EUR 12,798.0
Notify Archaeology Supervisory Authority of commencement of works and receive on-site inspection at excavation	7 days	no charge
Obtain stamp from the police on the final building permit	1 day	no charge
Notify the Municipality of the commencement of works	1 day	EUR 350.0
Request and obtain foundation work inspection	1 day	EUR 300.0
Receive final inspection from Board of Building Inspectors and receive completion certificate	5 days	EUR 600.0
Apply for water and sewage connection	1 day	EUR 63.0
Undergo investigation by the water company on the feasibility of the project	21 days	EUR 1,070.0
Obtain water and sewage connection	45 days	no charge

Source: Doing Business overview for Greece, World Bank, 2020.

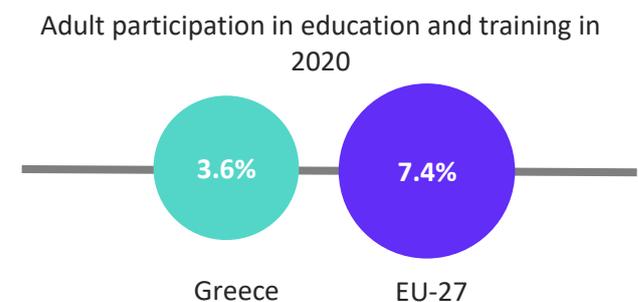
Skills shortage

The **job vacancy rate** in the narrow construction sub-sector declined to 0.4% in 2020 after reaching its peak in 2016 (1.5%). Similarly, in the real estate sub-sector, it declined to 1.5% in 2020 after attaining its peak in 2017 (15.3%). In parallel, the **number of job vacancies** in the narrow construction sub-sector declined to 216 in 2020, representing a 65.3% decrease since 2014⁹¹. On the contrary, the number of job vacancies in the real estate sub-sector has grown significantly to 113 in 2019, representing an increase of 348.5% since 2014⁹². However, in 2020 it declined annually by 60.0%, reaching 45. The overall growth for the period 2014-2020 was 79.2%

Job vacancies in narrow construction sub-sector between 2014 and 2020

↓ 65.3%

The **number of tertiary students** in engineering, manufacturing and construction reached 10,657 in 2019⁹³, representing an increase by 6.3% since 2010. However, this also represents an annual decline of 5.8%. This growth over the period 2010-2019 was mostly driven by the growth in tertiary students in the manufacturing and processing specialisation, as it reached 987 in 2019⁹⁴, representing 207.5% increment since 2010. On the contrary, tertiary students in the engineering and engineering trades specialisation decreased by 3.4% over the 2010-2019 period, reaching 5,947 in 2019⁹⁵. Similarly, tertiary students in the architecture and building specialisation decreased by 17.6% over the 2010-2019 period, reaching 2,925 in 2019⁹⁶. **Adult participation in education and training** in the narrow construction sub-sector in Greece stood at 3.6% in 2020 compared to the 2020 EU-27 average of 7.4%.



Although the **shortage of workers** in Greece had not been such a big challenge, it became a major concern with the onset of the COVID-19 pandemic⁹⁷. The numbers reported by the Greek construction sector with regards to the shortage of workers in first quarter 2020 stood at around 22, being the lowest in comparison with other EU Member States. However, it increased significantly to 90 in the second quarter of 2020⁹⁸. As per the list of shortage by occupation in Greece, published by Greek Federation of Enterprises, there is a shortage of builders (specific to the construction industry)⁹⁹.



As per the EIBIS Report 2020, around 65.0% of the firms in the Greek construction sector reported the availability of skilled staff as a long-term barrier¹⁰⁰.

PEDMEDE (Panhellenic Association of Engineers Contractors of Public Works) reports that there are several ongoing initiatives at government level to address the skill shortage and improve the Greek

training system. For instance, the Ministry of Labour and Social Affairs, announced that by the end of 2021 the legislation framework for the modernization of the Labor Employment Organization will be updated, laying the foundations for making the system of training and retraining in Greece much more reliable and effective in addressing the skill mismatch¹⁰¹.

In addition, the National Recovery and Resiliency Plan, Greece 2.0, stresses the need for up-skilling and reskilling programs boosting employment, including digital skills and encompassing Vocational Education Training and Apprenticeships, defining a specific policy area for funding under this scope. The plan tackles the need to upskill the workforce in key policy areas, such as energy efficiency, building renovation, construction/housing, climate policy, social policy, resource efficiency, circular economy as well as strongly focusing on digitalisation (e.g. BIM)¹⁰².

Sector and sub-sector specific issues

Material efficiency and waste management

Solid waste management has been a serious concern for Greece over the years. However, over the last two decades it has undergone remarkable improvement. Disposal in sanitary landfills is still the main method as the country relies on traditional this technique. However, there has been a decreasing trend toward landfilling since 2015, mainly due to the gradual increase in recycling. In 2018, total recycling operations (including composting) constituted 20.1% of the management of municipal solid waste and was much below the European average (47.0%)¹⁰³.

A new National Waste Management Plan (NWMP) was introduced in September 2020 (Government Gazette 185/A/29-09-2020) with an implementation period of 2020 2030¹⁰⁴.

The aim of the new NWMP is to adopt the appropriate strategic directions so that the national waste management policy is implemented through a coherent network of plans, programmes, actions and projects, and the established objectives are achieved. The NWMP defines the policy, strategies, axes and the qualitative and quantitative objectives

of waste management in the individual waste streams, defining the actions and measures required to achieve the objectives set by national and European waste management legislation. The new plan also sets an ambitious target for reducing waste disposal to 10% by 2030, five years ahead of the European guidelines (10% by 2035)¹⁰⁵.

The above goal can be achieved within the framework of national planning towards energy recovery. The plan encourages the construction of new treatment plants that will produce secondary fuel, biogas and electricity. The new NWMP proposes the construction of four waste-to-energy units with an estimated capacity of between 847,782 and 1,429,752 tonnes per year by 2030¹⁰⁶.

With regards to **construction and demolition wastes**, presently in Greece there are nine operating systems for alternative management of excavation, construction and demolition waste (CDW) in Greece. However, the country lacks appropriate sites for CDW to be temporarily stored, until they are processed¹⁰⁷.

According to the Greek National Waste Management Plan, a total amount of 690,000 tonnes of non-hazardous CDW is estimated to be generated annually by year 2020 in Greece¹⁰⁸.

The legislative framework for waste management in Greece is defined by **Law 4042 of 2012 'Penal protection of the environment - Compliance with Directive 2008/99/EC - Framework for waste generation and management - Compliance with Directive 2008/98/EC - Regulating issues of the Ministry of Environment, Energy and Climate Change'** which transposes the EU Waste Framework Directive (2008/98/EC) into Greek law. All provisions in the WFD related to CDW form the legal basis for the management of CDW in the country¹⁰⁹.

Moreover, in 2021 the Greek government adopted the **Law 4819/2021**, which provides for an integrated framework for waste management-incorporating Directives 2018/851 and 2018/852. The law includes measures on waste, packaging and packaging waste, framework of organization of the Hellenic Recycling Organization, provisions on plastic products and environmental protection, spatial-urban and energy emergency regulations. The framework focuses on protection of the environment and human health aimed at preventing waste generation, reducing its negative

effects, increasing recycling, limiting the overall impact of resource use and improving their efficiency with a view to moving to a circular economy. At the same time, provisions concerning the organization and operation of the Hellenic Recycling Organization (E.O.AN.) are contained, while other related issues are regulated¹¹⁰.

In the sector of Construction Demolition Waste (CDW) which constitutes one of the major challenges encountered in Greece towards circular economy, recycling, and overall management, PEDMEDE has founded **PEDMEDE ECO**, a Collective Waste Management System at national level, responding to the gap of a market for recycled materials, and linking regional CDW systems¹¹¹.

Climate and energy

Greece emits high amounts of greenhouse gases (GHG), (around 9.2 tonnes per capita/year), in comparison to the EU-28¹¹² level (around 8.8 tonnes per capita/year)¹¹³. GHG emissions per capita in Greece's remote rural regions are higher than in metropolitan regions¹¹⁴. Back in 2005, the energy industries accounted for the largest share (42.0%) of Greece's GHG emissions. However, over the 2005-2019 period, it reduced by close to 14.0%. This translates into 54.0% reduction in emissions since¹¹⁵.

Total GHG emissions in Greece are expected to decrease to 60.6 MtCO₂e¹¹⁶ in 2030. This shall be driven mostly by the power sector through reduction in diesel-fired plants and the phasing-out of lignite as a power source, in combination with increased use of renewable energy sources¹¹⁷.

Emissions of greenhouse gases (carbon monoxide and dioxide, methane and nitrous oxide) in the narrow construction sub-sector stood at 419,183.5 tonnes in 2019¹¹⁸, representing a decline of 54.0% over the 2010 level (911,729.3 tonnes). Similarly, in the real estate sub-sector, the emissions of greenhouse gases reduced by 15.5% from 6,952.0 tonnes in 2010 to 5,875.9 tonnes in 2019¹¹⁹.



5

Innovation in the construction sector

Innovation performance



In the European Innovation Scoreboard 2021, Greece has been classified as a Moderate Innovator. Its overall score relative to EU-27 in 2021 stood at 78.6¹²⁰.

According to the scoreboard, Greece's strong innovation dimensions are innovators, linkages and employment impacts. The top scoring indicators include sales of innovative products, innovative SMEs collaborating with others and product innovators (SMEs). Contrarily, the country's weak innovation dimensions are use of information technologies, finance and support and digitalisation. Foreign doctorate students, PCT patent applications and design applications comprise Greece's lowest scoring indicators¹²¹.

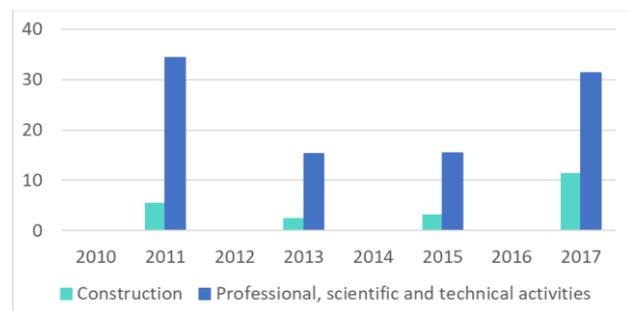
Greece's **business enterprise R&D expenditure (BERD)** in the narrow construction sub-sector¹²² increased from EUR 5.4 million in 2011¹²³ to EUR 11.3 million in 2017¹²⁴, representing an increase of 110.8% over the 2010-2017 period.

BERD expenditure in the narrow construction sub-sector between 2010 and 2017

↑ 110.8%

In terms of **R&D personnel**, in 2017¹²⁵, 66 full-time equivalents (FTEs¹²⁶) were employed in the narrow construction sub-sector, while 943 FTEs were employed in the professional and scientific activity sub-sector. Compared to 2011¹²⁷ levels, FTEs, both in the narrow construction and professional activity sub-sectors, increased by 560.0% and 78.3% respectively.

Figure 8: Business enterprise R&D expenditure (BERD) per construction sub-sector in Greece between 2010 and 2017 (EUR m)¹²⁸



Source: Eurostat, 2020.

In 2020, the number of **construction-related patent applications** stood at four, suggesting a low level of innovation in the sector. This has been fluctuating, with numbers totalling 11 in 2010, down to 6 in 2015, 3 in 2016, 9 in 2018 and 5 in 2019. Moreover, no Greek construction-related firm ranks within the top 1,000 EU companies by R&D (industrial sector ICB-3D), according to the 2019 EU R&D Scoreboard¹²⁹.

According to the SAFE Report 2020, the proportion of innovative enterprises among SMEs in Greece stood at 60.0%, being the third highest amongst EU-27 member states and above the EU-27 average (51.0%)¹³⁰.

Eco-innovation and digitalization

According to the EU Eco-Innovation Index 2021, Greece stood at 16th position, with a score of 102. Though this is below the EU-27 average score (121), it shows an improvement from the previous year's score (96)¹³¹.

As per the report, Greece has been categorised under '**Average Eco-Innovation performers**'. In 2021, the country scored below the EU-27 average on all five indicators – eco-innovation inputs, eco-innovation activities, eco-innovation outputs, resource efficiency outcomes and socio-economic outcomes. Out of these five indicators, Greece scored best in eco-innovation inputs (107) and eco-innovation outputs (104)¹³².

According to the European Commission Digital Economy and Society Index (DESI) 2020, Greece ranked 27th, with a score of 37.3, out of the EU-28 countries (average score: 52.6). The country's performance has improved compared to the previous year (37.3)¹³³.

With regards to different indicators in the DESI 2020 report, Greece scored 33.4 in terms of **connectivity**. This is 3.9 points up from the previous year's score. It ranked 28th under this indicator, in line with the previous year's rank. In terms of **human capital**, it scored 34.8 in 2020, which is 2.1 points up from previous year's score. However, it ranked 25th under this indicator, in line with the previous year's rank. The score for **use of internet services** in 2020 stood at 46.1, which is 2.8 points higher than the previous year. The ranking under this indicator was 25th, same as the previous year. The country's score in **integration of digital technology** dropped by 2.0 points annually, reaching 28.2 in 2020. The ranking under this indicator also dropped annually from 22nd in 2019 to 24th in 2020. Lastly, under **digital public services**, Greece scored 51.5 marking an improvement by 5.1 points from the previous year. However, the ranking was the same as previous year (27th)¹³⁴.

Greece had taken several digital initiatives to address the challenges and barriers triggered by the COVID-19 pandemic, accelerating the pace of the digital transformation. The sudden shift to digital platforms has strained the infrastructure. Recently, the **Greek Ministry of Digital Governance** gained strategic importance, as it was given the mandate to design, coordinate and implement the strategy for the digital transformation of the country. The ministry is responsible for providing digital services to citizens and businesses based on simplified administrative procedures. It is also responsible for ensuring the interoperability of processes with all other ministries and government agencies. The

objective is to transform Greece into '**digital by default**' by 2023¹³⁵.

As per the **EIBIS Report 2020**, the share of firms reporting '**no innovation**' in Greece stood at 67.0% (approximately), lower than the previous year (70.0%). However, it still lies much above the EU-28¹³⁶ average (42.0%). This highlights the low level of innovation in the country. Over one-third of all firms (36.0%) in Greece developed or introduced new products, processes or services as part of their investment activities. This includes 11.0% of firms reporting innovations new to the country or the global market. With regards to **firms implementing digital technologies**, Greece reports lower levels of implementation in 2020 (54.0%) compared to 2019 (66%) and the 2020 EU-28¹³⁷ average (63.0%)¹³⁸.

Specific to the **Greek construction sector**, the share of firms reporting '**no innovation**' in 2019 was the highest (82.0%) in comparison with services (77.0%), manufacturing (58.0%) and infrastructure (59.0%) sectors. Greek construction firms are the least likely to have implemented at least one digital technology (45.0%)¹³⁹.

The share of construction firms in Greece implementing 3-D printing and Internet of things stood at 14.0% and 34.0% in 2020, respectively, higher than the EU-28¹⁴⁰ average (10.0% and 22.0% respectively). However, around 15.0% and 5.0% of Greek construction firms implemented drones and augmented or virtual reality, respectively, below the than the EU-28¹⁴¹ average (19.0% and 11.0%)¹⁴².

Currently, the issue of **BIM (Building Information Modelling)** is limited to the representation of Greece to the EUBIM Task Group with two members: a representative of the Ministry of Environment and Energy and a representative of the Technical Chamber of Greece (TCG). The only application of BIM having taken place at a national level was for the Stavros Niarchos Foundation. This pilot application was developed on a 3D model before the construction process started¹⁴³.

In order to **reinforce interest in the use of BIM**, the Ministry of Environment and Energy and the Secretary General of Spatial Planning and Urban Environment undertook the initiative to establish an Interministerial Group for the Promotion of the modelization of BIM construction information. The group currently counts 10 members from the public

and private sectors and its mission is the promotion of BIM, enhancing knowledge transfer between the academia, the construction industry, designers and architects. The initiative aims also at reinforcing Greece in the EUBIM Task Group with the composition of the BIM Promotion Group (up to five members in total according to the European

specifications) and the undertaking common coordinated actions¹⁴⁴.

According to Greek legislation, while BIM can be implemented in public construction project plans, there are no further requirements or guidance in place that ensure its application in practice¹⁴⁵.

6

National and regional regulatory framework

Policy schemes

The Greek government has implemented several policy measures, financial and fiscal schemes to support the development of the rental and housing market. In 2019, a **means-tested rent subsidy** has been implemented in Greece. This policy measure can support low-income households in meeting their housing costs. However, the fact that it is not part of a national strategy to address housing problems, may become a hindrance for the effectiveness of this policy. This scheme is targeted at the households living in rented primary residences, and not to those who are paying mortgage loans for their primary residence. It is set at EUR 70.0 per month for a single-person household, increased by EUR 35.0 for each additional household member. This policy measure can support low-income households in meeting their housing costs.

The total amount of the rent subsidy cannot exceed EUR 210.0 per month, irrespective of the composition of the household¹⁴⁶. An estimated budget of EUR 300.0 million per year has been allocated for rent subsidies, to be drawn from the state budget²⁴⁴.

As for those who are paying mortgage loans for their primary residence, a separate legal framework has been adopted. It introduces a loan instalment subsidy scheme that has been implemented since the end of April 2019. Regarding the eligibility criteria for the rent subsidy, the relevant Joint Ministerial Decision of 2019 outlines that beneficiaries must have been legal and permanent residents of the country during the five years preceding the submission of the application, and must fulfil, cumulatively, a few criteria on income and assets. In particular, to be eligible for the rent

subsidy the total annual income of a single-person household cannot go beyond EUR 7,000, while for each additional household member (adult or child) this amount is increased by EUR 3,500¹⁴⁷.

Irrespective of the composition of the household, the total eligible annual income cannot exceed EUR 21,000. Moreover, the total taxable value of the single-person household's property cannot be over EUR 120,000, increased by EUR 15,000 for each additional member of the household (adult or child), while the maximum total taxable value of the property cannot exceed EUR 180,000¹⁴⁸.

The Greek government introduced the National Strategy for Social Inclusion (NSSI) (Εθνική Στρατηγική Κοινωνικής Ένταξης), which outlines a framework of principles, priorities and measures¹⁴⁹.

It aims to establish a combined framework for social inclusion policies aiming at vulnerable groups. It is based on three socio political pillars, namely combating extreme poverty through measures such as access to affordable and adequate housing, access to services and an inclusive labour market¹⁵⁰.

The Greek government has granted a three-month extension to a programme subsidising housing loans for households affected by the economic crisis caused by the COVID-19 pandemic. Currently, the government is estimated to disburse some EUR 230.0 million by September 2021. It had budgeted EUR 300.0 million for this initiative, leaving EUR 70.0 million available to be spent by the end of 2021 when the scheme expires¹⁵¹.

The first programme, **Gefyra 1**, subsidizes housing loan repayment instalments for nine months at variable rates, starting from 90.0% and declining

every three months. The second subsidy program, **Gefyra 2**, has made its first disbursements, worth EUR 44.2 million, to 7,774 recipients with 19,201 housing loans¹⁵².

Furthermore, additional support measures are set to be added to the government's plans for next year, with the Finance Ministry currently seeking the funds to finance its "**EUR 3+2 billion**" package for the 2022-23 period. It aims to have EUR 3.0 billion channelled into the market next year to support further growth. Amongst other measures, one will aim to combat energy poverty. With value-added tax on power at the bare minimum of 6.0%, the government is opting for direct subsidies to the most vulnerable households for their electricity bills, and the expansion of heating oil and gas subsidies¹⁵³. In April 2019, **Law 4605/2019** was adopted, as over-indebted households were at high risk of losing their primary residency. This particular law introduced a new legal framework for protecting the primary residences against foreclosure¹⁵⁴ due to households' over-indebtedness¹⁵⁵.

Building regulations

The legal framework governing construction activities in Greece is constituted by the **General Building Regulation** (*Γενικό Οικοδομικό Κανονισμό – Γ.Ο.Κ.*), with ensuing amendments which establish the terms and conditions for the proper development of construction projects within or outside urban settlements, aiming at protecting the physical, natural and cultural environment¹⁵⁶. A series of building regulations complementing the General Building Regulation contain provisions related to the classification of buildings, safety and resilience of structures, various structural elements (walls, openings, windows, etc.), basic facilities (plumbing, heating, elevators, etc.¹⁵⁷). Whereas spatial planning is governed by Law 2742 on **Spatial Planning and Sustainable Development**, urban planning is overseen by Law 2508/97 on Sustainable Residential Development¹⁵⁸. The execution of public construction work is defined by the Code of Construction and Public Works. It details the requirements for carrying out the work, and the procedure for selecting contractors and award criteria, among others¹⁵⁹.

The government introduced Law no 4178/13 on **Tackling Illegal Building Works, Safeguarding**

Environmental Harmony and other Provisions. It aims at putting an end to illegal construction activities (i.e. structures built without planning permission) and unauthorised uses of space (i.e. use of a space which is not consistent with the purpose originally declared in the building permit). Actions taken in this respect include a system of fines, prohibition of property transactions for assets containing illegal structures and requests for additional certificates of compliance during transactions.

The **Control and Protection of the Built Environment** law 4495/2017 (*Έλεγχος και προστασία του δομημένου περιβάλλοντος*) announced by the Greek government aims at simplifying and accelerating procedures for the issuance and control of building permits and reviewing the framework to tackle and sanction arbitrarily built housing. The law establishes a structure called the Structured Environment Observatory dealing with the control and quality of the built environment¹⁶⁰. Moreover, the procedure for submission, control and issuance of building permits, and notification of execution of additional works, is performed exclusively electronically under the responsibility of the engineer and the approval is issued automatically, immediately after the submission of the required supporting documents, and data¹⁶¹.

The building sector is of the utmost importance for energy savings. Therefore, according to the Greek government, renovations of existing buildings will be essential in reaching the energy efficiency targets. The current institutional framework provides for energy-efficient buildings through compulsory partial use of solar heating systems in new buildings; renovation of public buildings with new heating and cooling systems and mandatory (although gradually implemented) provision of new technology services and material and green procurement¹⁶².

Specific incentives have also been announced by the Greek government for citizens and local authorities, including special financing programmes, tax exemptions and incentives for the substitution of conventional heating and cooling systems and permitting favourable building coefficients¹⁶³.

When determining the construction capabilities of the land plot, four key coefficients are applicable

– building area, land-to-building ratio, coverage ratio, and the number of floors in a building¹⁶⁴.

- Under the permitted building area means the total area of all floors of the construction object. It is measured along the exterior perimeter of the building and does not depend on the number of its floors.
- The land-to-building ratio is established by law for determining the gross building area. It helps determine the permitted building area.
- The coverage ratio is expressed as a percentage, referring to the maximum area of the land plot which can be used for construction in Greece.
- The height of the building – the number of floors allowed for construction in a given region and a land plot. When determining this parameter, all floors are considered, including the attic and the socle floor¹⁶⁵.

Insurance and liability-related regulations

There is no formal requirement to be covered by insurance when conducting construction work in Greece. Although it has been planning to introduce such an insurance scheme, it did not materialise in practice, possibly due to the high costs of implementation¹⁶⁶. Yet, voluntary insurances for third-party liability, professional indemnity risks and risks arising through construction activity (Contractors' All Risks Insurance – CAR) are available. Furthermore, requirements associated with insurance are specified in the general conditions of the contract, particularly in the case of public works or large private projects¹⁶⁷.

The **Civil Code** defines the principles and duration of liability. According to Articles 692 and 693 of the code, the contractor is legally responsible, for 10 years following the handover, for defects in the building and remains liable for any hidden defects. The construction contract also plays a significant role in defining liability, since it can limit or extend the duration of liability¹⁶⁸.

7

Current status and national strategies to meet Construction 2020 objectives

TO 1 – Investment conditions and volumes

Total investment by the broad construction sector¹⁶⁹ has been fluctuating over the 2010-2019¹⁷⁰ period. Particularly, investment by the narrow construction sub-sector reached EUR 249.6 million in 2019¹⁷¹, after having declined from its peak (EUR 902.5 million) in 2013. Over the period 2010-2019¹⁷², this represented a growth of 166.4%. Investment by the real estate activities sub-sector has been declining continuously from 2010, reaching EUR 1.7 billion in 2019¹⁷³, thereby marking 86.2% decrease over the 2010-2019¹⁷⁴ period.

Total investment by the narrow construction sub-sector between 2010 and 2019

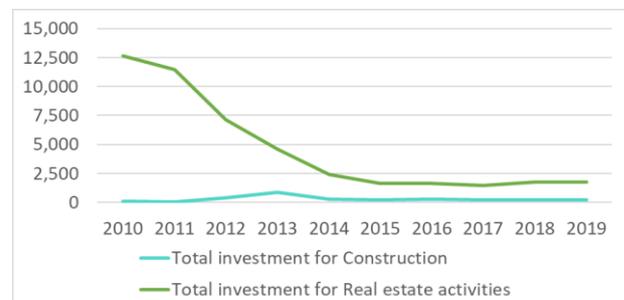
↑ 166.4%

In parallel, **investment in intellectual property** by the narrow construction sub-sector increased by 5.5% over the 2010-2019¹⁷⁵ period, after having increased from its lowest point (EUR 7.8 million) in 2015, thus reaching EUR 17.2 million in 2019¹⁷⁶. Investment in intellectual property by the real estate activities sub-sector reached EUR 33.9 million in 2019¹⁷⁷, after having increased from its lowest point (EUR 4.5 million) in 2012. This represents an overall decline of 24.5% over the 2010-2019¹⁷⁸ period.

Total investment in intellectual property products by the real estate activities sub-sector between 2010 and 2019

↓ 24.5%

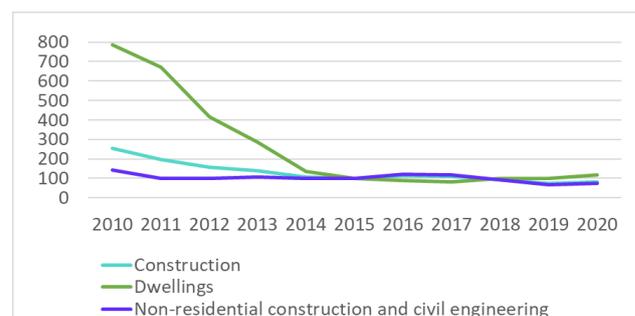
Figure 9: Investment by the Greek broad construction industry between 2010 and 2019 (EUR m)



Source: AMECO, 2021.

The **investment index in the broad construction sector**¹⁷⁹ decreased by 17.3% between 2015 and 2020 (Figure 10). Investment in dwellings by the whole economy increased by 17.0% over 2015-2020. However, investment in non-residential construction and civil engineering declined by 24.6% over the same period. In absolute terms, investment in the broad construction sector totalled EUR 5.7 billion in 2019¹⁸⁰, of which EUR 1.3 billion was invested in dwellings and EUR 4.4 billion in other buildings and structures¹⁸¹.

Figure 10: Investment index in the Greek construction sector between 2010 and 2020 (2015=100)



Source: Eurostat, 2021.

Total investment in the dwellings by the whole economy between 2015 and 2020



17.0%

In addition, total **inland infrastructure investment**¹⁸² as a share of GDP decreased from 0.7% in 2010 to 0.4% in 2019¹⁸³. In particular, over the period 2010-2019¹⁸⁴, the infrastructure investments for air transport infrastructure decreased from EUR 29.4 million to EUR 20.7 million (-29.8%), for rail it decreased from EUR 503.6 million to EUR 107.4 million (-78.7%), for road it increased from EUR 1.2 billion to EUR 710.3 million (-38.5%) and for sea it decreased from EUR 61.1 million to EUR 8.5 million (-86.1%).

Investments in sea infrastructure for the period 2010-2019



86.1%



In January 2021, Greece ranked 2nd, out of EU-28¹⁸⁵ member states in terms of the total investment set to be triggered by the European Fund for Strategic Investments (EFSI) as a proportion of GDP¹⁸⁶.

As of January 2021, the total financing under the EFSI in Greece amounted to EUR 2.9 billion, which is set to trigger EUR 14.1 billion in additional investments. With regards to infrastructure and innovation projects, 22 projects had been approved by the EIB with EFSI backing. These projects required up to EUR 2.4 billion of the total financing, which is set to trigger EUR 8.0 billion of total investments¹⁸⁷.



In 2020, the EIB Group invested almost EUR 791.0 million in infrastructure in Greece¹⁸⁸.

With regards to sustainable urban development in Greece, in October 2020, the Ministry of Interior and the Ministry of Environment and Energy launched two programmes which have been supported by an intermediated Framework Loan operation project. The Framework Loan to support local governments in multi-sector investments is aimed at sustainable development of urban areas. The two programmes aim at supporting municipalities, regional authorities and their agencies in order to invest in a wide range of projects contributing to the sustainable

development of urban areas. The first programme concerns the implementation of infrastructure projects. The second programme concerns the implementation of local spatial plans (LSPs), namely integrated plans and related interventions. The total cost of the project is estimated at EUR 2.3 billion and the proposed EIB finance amounts to EUR 500.0 million (approximately). The project was signed in March 2021¹⁸⁹.

Furthermore, the Ministry of Infrastructure and Transport is rolling ahead a EUR 13.0 billion masterplan in 2021. This covers a range of projects, from the completion of the country's highspeed motorway network to railway modernisation and urban transit systems. Under the masterplan, new road, rail, sky, and sea links are planned to be transformed capitalising on EU and EU-mobilised funds¹⁹⁰.

As per the plan, Greek railways will benefit from the largest programme, budgeted at EUR 3.3 billion. A key project, the Thriasio Logistics Centre in western Attica, is planned to be accomplished as a part of this project. Once completed, it will provide a 235,000 square metre chain of warehouse and office space. Directly connected to the Attica motorway, the centre will be linked by rail to the Port of Piraeus, 23 kilometres away, and the Athens Eleftherios Venizelos Airport, at a distance of 44 kilometres¹⁹¹.

Greece's Recovery and Resilience Plan has earmarked EUR 452.0 million to build the E65 motorway, spanning from the town of Trikala in central Greece to the east-west Egnatia motorway in the country's north. The Recovery Fund also earmarks EUR 427.0 million for a 310 kilometre highway along the northern coast of Crete, while Attica's emblematic ring-road motorway is set to receive investments in 2022. The estimated cost of the project amounts to EUR 3.0 billion¹⁹².

With regards to **Greece's Thessaloniki Metro**, a EUR 2.26 billion project, with 18 stations under construction and another 16 planned for a later stage, the Thessaloniki's underground system is targeted to begin operation in April 2023. Since July 2019, the urban bus fleet in the city has grown from 235 vehicles to 454. Moreover, a highspeed rail passenger service between Athens and Thessaloniki, reducing travel time for the 500 kilometres trip to three hours and 20 minutes, is planned to begin soon¹⁹³.

The Hellenic Republic Asset Development Fund is expanding its mandate by creating a project preparation facility designed to overcome structural obstacles in the preparation and implementation of priority investment projects. The Strategic Projects Pipeline is expected to deal with projects having a budget in excess of EUR 20.0 million in energy, environment, transport and digital sectors. It anticipates facilitating 40-45 projects, with a median size of around EUR 120.0 million and will be coordinated at the level of the presidency of the government, outside the core structure of the ministries¹⁹⁴.

As per the **Greece's Draft Budget Plan 2021**, the implementation of the national strategic plan will be coordinated by the Ministry of Finance, in order to ensure efficiency in achieving the pursued objectives. Among others, the priorities of the plan under preparation focus on upgrading infrastructure and supporting the regional economy, in conjunction with and complementary with the other European Union programmes set out in the **Multiannual Financial Framework 2021-2027**. Other prioritised plans are supporting entrepreneurship; enhancing employment and social cohesion; green growth; and the digital transformation and technological upgrading of the public and private sectors¹⁹⁵.

Most of the projects co-funded or to be co-funded through the operational programme **Transport Infrastructure, Environment and Sustainable Development 2014-2020** have direct relevance to the recommendations of Greece's Draft Budget Plan 2021 and the implementation of the national strategic plan. There are in total 65 transport projects with a total budget of EUR 4.0 billion that are included in the overall planning and correspond to investments on safe and sustainable transport, as well clean urban transport. Among them there are four significant projects with a budget of EUR 980.0 million. Out of the already selected transport projects, 40 are either under construction or to be contracted in the following year and will thus contribute to the 2021 budget with a total of EUR 392.0 million¹⁹⁶.

These investments concern transport systems, including the upgrade of railroad and road networks, interventions for improving transport safety, the upgrade of airport and port

infrastructure, as well as infrastructure for clean urban transport (Metro lines in Athens and Thessaloniki)¹⁹⁷.

Household renovation spending reached EUR 122,700 in 2019¹⁹⁸, representing a 22.1% decrease from 2010 level. This also represents 0.2% of total household disposable income in 2019¹⁹⁹, lower than the 2010 level (0.5%).

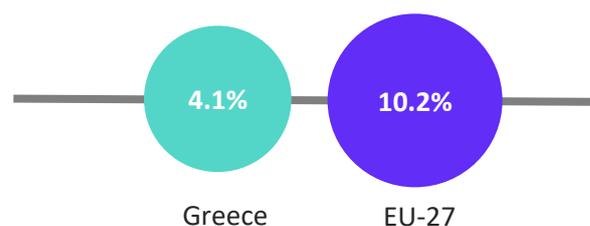
TO 2 – Skills

Greece performs well when it comes to skills, education, and training, with several indicators standing above the EU-27 average. For instance, in 2019²⁰⁰, **early leavers from education and training** in Greece stood at 4.1% (faring better than the 2009 level of 14.2%), lower than the EU-27 average of 10.2%. Greece's early school leaving is among the lowest in the EU region. The improvement in the rates over the 2009-2019 period is most pronounced in the rural areas²⁰¹.

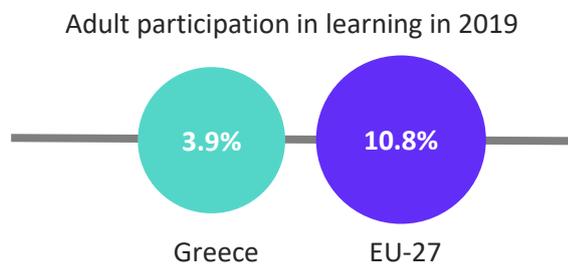
The country's share in **tertiary educational attainment** in 2019²⁰² reached 43.1% (above the 2009 level of 26.6%), still above the EU-27 average of 40.3%. However, the lack of soft skills amongst tertiary graduates affects their job prospects. Employers have witnessed a significant lack of skills related to communication, teamwork, flexibility and adaptability among job candidates in general. Greek students, while seemingly less aware of the relevance of soft skills than students in other countries, also feel they lack skills in areas they consider essential for job performance, including communication, teamwork, self-confidence and work ethics²⁰³.

According to a recent national study, the lack of digital skills prevents people from finding employment in Greece. It also poses a job risk for those employees whose work is already or will soon be affected by digitalisation²⁰⁴.

Early leavers from education and training in 2019



However, Greece's **employment rate of recent graduates by educational attainment** was 59.4% in 2019²⁰⁵ (below the 2009 level of 65.2%), and below the EU-27 average of 80.9%. Lastly, **adult participation in learning** in Greece reached 3.9% in 2019²⁰⁶ (up from the 2009 level of 3.5%), above the EU-27 average of 10.8%²⁰⁷. In Greece around 92.0% of adults agree that the government should prioritise investment in adult learning. The case for prioritising adult learning and training is strengthened by the 47.0% of adults in Greece who said that they lack some technical skills, and 38.0% that lack some of the basic skills to do their jobs at the required level compared to the EU-27 averages of 28.0% and 22.0% respectively²⁰⁸.



With regards to **vocational education and training (VET)**, the employment rate as per the Greece Education and Training Monitor 2020, stood at 50.9%, still far below the EU-27 average of 79.1%. The continuous development of the optional fourth apprenticeship year for upper secondary VET graduates with a strong work-based component is expected to strengthen the link between education and the labour market. Four thousand secondary VET teachers have been trained on apprenticeship issues and certification of career guidance counsellors is in progress. VET graduates' skills certification will simplify their integration into the labour market. Thorough monitoring of all VET initiatives and projects is expected to strengthen the sector²⁰⁹.

As per Greece's Draft Budget Plan 2021, building on the experience of COVID-19 and distance-learning, the country has invested in public networks/servers, digital literacy and digital skills training, as well as digital content-creation (reinforcing schools and the nationwide school network, propagating digital skills teacher training, introducing special training programme for distance-teaching etc.)²¹⁰.

TO 3 – Resource efficiency / Sustainable construction

The European Commission (EC) has assessed Greece's 2030 primary and final energy consumption targets as modest to low in ambition, respectively. Nevertheless, the EC acknowledges the application of the energy efficiency first principle. The final **National Energy and Climate Plan (NECP) 2019** focuses on measures to address the issue mostly through the buildings and transport sectors^{211,212}.

As per the NECP, buildings in Greece are currently responsible for around 40.0% of energy consumption. Hence, there is an excessive need to promote the improvement of the energy efficiency of buildings. This is achievable by renovating and modernising, as well as by adopting corresponding measures for renewing the stock of end-of-lifecycle buildings. To reduce the energy consumption of buildings, increased use of energy-efficient and low-emission heating systems should be adopted. The renovation or construction of smarter buildings, with improved insulation materials, inter alia, fully compliant with the principles of circular economy will also help in reducing the energy consumption²¹³.

In addition, the NECP 2019 highlights the optimal use of Renewable Energy Systems (RES) technologies to cover electricity, heating and cooling needs. These steps will ensure a lower cost of living. However, the necessary methods and means must be provided, to help Greece make this transition. Three different phases had been outlined in order to achieve this transition²¹⁴.

The **initial phase** covered the year 2020. All the regulatory aspects essential for the required mechanisms and structures to be developed were to be prepared by the end of this period. Additionally, raising awareness of energy efficiency was to be paired with economic incentives and pilot projects²¹⁵.

In the second phase known as the **acceleration phase**, spanning over the 2020-2040 period, a further development of technological innovation of products and techniques is foreseen. This will lead to a gradual cost reduction in energy efficiency measures and a proper understanding of the additional gains of a total renovation²¹⁶.

Finally, in the third **stability phase**, spanning over the 2040-2050 period, the energy market of building renovation is anticipated to become mature enough to include mobilisation of investments from the private sector as well (e.g. through public private partnerships)²¹⁷.

In accordance with Greece's Assessment of NECP 2019, in the 2021-2030 period, the country's contribution to the EU 2030 energy efficiency target is set at 18.1 million tonnes of oil equivalent (Mtoe), which translates into primary energy consumption for the year at 24.7 Mtoe²¹⁸.

In March 2021, Greece introduced its long-term renovation strategy. This document is based on the latest available data on the country's building stock (2011) and takes into consideration the age and number of buildings, the climatic zones where they are located, and their energy consumption levels and characteristics²¹⁹.

Government support for private individuals will come in the form of subsidies for each investment, up to 85.0% of the investment or EUR 50,000 per household. Upgrades to building or building unit insulation, energy autonomy interventions, and installation of charging points for electric vehicles all fall within the scope of the planned subsidies²²⁰.

The Greek energy ministry is set to announce the details of the next **Saving at Home** programme, subsidising energy efficiency upgrades, ahead of its launch in October 2021. The ministry has set an objective for energy efficiency upgrades of 50,000 homes through the new programme, a 38.0% increase compared to the previous cycle. The new subsidy programme, worth a total of EUR 632.0 million, is expected to offer subsidies averaging 62.0% of energy efficiency project costs. The annual objective for energy savings is expected to be exceeded by 108.0%. Priority will be given to low-income households, individuals with special needs, single-parent families, long-term unemployed, large families and households with increased energy needs²²¹.

Besides its preparatory work for the next edition of the Saving at Home programme subsidising energy efficiency upgrades of homes, the Greek energy ministry is also moving ahead with its **Electra programme**, designed to subsidize the upgrade of public buildings²²².

The Electra programme, worth EUR 500 million, will aim to provide energy savings totalling 230,000 meters watts hours (MWh) by 2025 as result of energy efficiency upgrades to public buildings. The ministry aims to announce the programme's details by October 2021 so that interested eligible parties can begin preparing their applications²²³.

Public office buildings, hospitals, medical clinics, schools and other education institutions, cultural centres, sport facilities, as well as care centres for the elderly, underprivileged and children will all be eligible for Electra programme upgrade subsidies. Buildings will need to be used at least eight months per year to be eligible for the programme, according to one of the prerequisites expected to be set. The Electra programme will remain open for applicants until all its available funds have been absorbed²²⁴.

Greece's Recovery and Resilience Plan includes investments of EUR 1.3 billion in the energy-efficient renovation of more than 100,000 residences, including for low-income households²²⁵.

TO 4 – Single Market



As per the 2020 Single Market Scoreboard, Greece's performance remains below the EU-28²²⁶ average.

Greece's performance regarding the **transposition deficit** stood at 0.8% in 2019, representing a deterioration from the previous year (0.5%). The 2019 EU-28²²⁷ average stood at 0.6%. The **conformity deficit** increased to 1.0% in 2019 from 0.4% in the previous year, whereas the EU-28²²⁸ average stood at 1.2%. The **number of pending cases** under infringement stood at 44 (where 16 cases were new, including 6 in the environment sector, and 5 cases closed) in 2019 compared to previous year (33 pending cases). This marks a sharp increase of 11 cases annually. The EU-28²²⁹ average was 29 cases. The **average case duration** reached 32.7 months, compared with 47.3 months the previous year and 34.8 months for the 2019 EU-28²³⁰ average. The country's **compliance with court rulings** stood at 29 months compared to the previous year (28.9 months) and the EU-28²³¹ average (29.5 months). Greece's average response time currently exceeds the 70-day time limit of EU Pilot by only three days²³².

Greece continues to perform well in terms of **Internal Market Information Systems**. Greece's performance improved in four of five indicators. The percentage of requests answered by the agreed deadline increased significantly to 11 in 2019, much above the European Environment Agency (EEA) average (19). All five indicators were above the EEA average. Greece has low **trade integration** in the single market for goods, while trade integration for services is slightly below the EU-28²³³ average. Overall, Greece's performance in **public procurement** in 2019 was unsatisfactory²³⁴.

The public procurement sector in Greece is characterised by a high level of corruption. The risks of corruption are widespread in the economy. As a result, it severely impacts the country's business environment, distorting market competitiveness²³⁵.

In processes of awarding public contracts, businesses have reported common occurrences of bribes and irregular payments. They have also indicated favouritism in the decision-making of government officials and diversion of public funds²³⁶. In order to tackle this issues, the Greek government reformed the existing regulatory framework for public supply, service and works contracts of Law 4412/2016, introducing Law 4782/2021 with the aim of simplifying and clarifying the provisions, reducing bureaucracy, increasing the efficiency of public procurement procedures, expanding the use of e-procurement, increasing the participation of SMEs in public procurement procedures and addressing pathogenies, such as the issue of excessively low tenders and the excessive attachment to formality versus the substance of tenders²³⁷.

TO 5 – International competitiveness



Greece ranked 59th out of 141 economies in the 2019 Global Competitiveness Index. This is a deterioration from the previous year's ranking (57th)^{238,239}.

According to the index, with regards to in trade openness, Greece ranked the best in trade tariffs (7th). It ranked 39th in prevalence of non-tariff barriers and 48th in border clearance efficiency.

However, it ranked 113th in complexity of tariffs, the lowest performing indicator for the country²⁴⁰.

The **internationalisation of construction products and services** in the Greek construction sector experienced a modest increase over the 2010-2019 period, however, it declined in 2020. Specifically, the export value of all construction-related products reached EUR 515.1 million in 2020, representing 11.0% increment since 2010, but a 12.1% decline since 2019. Likewise, the share of exports value of all construction-related products as a percentage of total value of production increased from 22.0% in 2010 to 36.1% in 2019, but dropped to 31.3% in 2020.

Export value of all construction-related products between 2010 and 2020  **11.0%**

Contrarily, the export value of all architectural services dropped by 99.1% over the 2010-2020 period, reaching EUR 2,508 in 2020. It also dropped by 97.2% annually. The share of export value of all architectural services was consistently negligible over the 2010-2018²⁴¹ period.

Export value of all architectural services between 2010 and 2020  **99.1%**

In the context of **inward FATS (foreign affiliates statistics)**²⁴², value added at factor cost and turnover in the manufacturing sub-sector increased by 20.1% and 92.3%, respectively, over the 2012-2018²⁴³ period. The value added at factor cost and turnover in the narrow construction sub-sector, increased by 44.1% and 131.5% respectively, over the 2012-2017²⁴⁴ period. Lastly, in the real estate activities sub-sector, the value added at factor cost and turnover increased by 24.1% and 61.8%, respectively, over the same period.

With regards to **outward FATS**, turnover and the number of persons employed in the manufacturing sub-sector decreased by 25.7% and 46.5% respectively, over the 2010-2018²⁴⁵ period. In the narrow construction sub-sector, turnover and number of persons employed increased by 6.8% and 29.1% respectively, over the same period. Lastly, in the real estate activities sub-sector, turnover increased by 100.0%, whereas the number of persons employed witnessed a decrease by 96.4% over the same period.

In the context of **Foreign Direct Investment (FDI)**, in the manufacturing sub-sector, direct investment abroad (DIA) increased by 14.5%, whereas the direct investment in the reporting economy (DIRE) declined by 10.8%, over the 2013-2017²⁴⁶ period. Similarly, in the narrow construction sub-sector, the DIA increased by 9.5%, whereas DIRE declined by 34.8%, over the same period. Lastly, in the real estate activities sub-sector, the DIA in 2017 was in line with 2013, whereas DIRE witnessed a growth of 10.7% over the same period.



Internationalisation remains a challenge for SMEs in Greece. As per the 2021 SME Country Fact Sheet, only 5.3% of them export and only 6.3% import intra-EU goods. Greek SMEs are also among the lowest online intra-EU importers and exporters²⁴⁷.

In order to boost SME performance in the domestic and international markets, and to contribute to the production of new, innovative, improved products and services of high added value, as well as increase competitiveness, the Special Management Body of the Regional Operational Programme of Eastern Macedonia and Thrace introduced **support provided for the modernisation and upgrade of existing enterprises, with priority in areas of the Regional Smart Specialisation Strategy (Action 3d.5-6.1)** (*Ενίσχυση για τον εκσυγχρονισμό-αναβάθμιση υφιστάμενων επιχειρήσεων, κατά προτεραιότητα σε τομείς της Περιφερειακής Στρατηγικής Έξυπνης Εξειδίκευσης (Δράση 3δ.5-6.1)*) in January 2020. This measure refers to investments in tangible and intangible assets in relation to the creation of a new business venture or the expansion of the capacity of an existing business, as well as the diversification of the production process or the fundamental change of the whole production process of the business²⁴⁸.

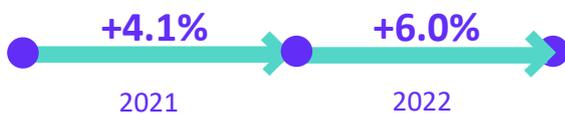
8

Outlook

After witnessing an annual decline of 8.2% in 2020 due to the COVID-19 pandemic, the Greek economy is expected to revive and register growth post 2020.

Greek GDP is expected to grow annually by 4.1% in 2021 and 6.0% in 2022, reaching EUR 175.4 billion.

Expected GDP growth in 2021 and 2022



The **volume index of production** in the broad construction sector is expected to increase annually by 13.1 ip and 17.3 ip in 2021 and 2022 respectively. This is expected to be mostly driven by annual increases in the volume index of construction of civil engineering by 16.3 ip and 21.8 ip in 2021 and 2022 respectively. The volume index of construction of buildings is also expected to increase annually by 3.7 ip and 4.0 ip in 2021 and 2022 respectively.

The **turnover** of the broad construction sector is projected to increase annually by 7.3% in 2021, reaching a value of EUR 19.1 billion. The narrow construction sub-sector is expected to contribute to major share (62.4%) of total turnover in 2021, whereas turnover in the architectural and engineering activities sub-sector is expected to increase annually by 19.2% in 2021, being the highest among sub-sectors.

The **total value added** of the broad construction sector is expected to decrease annually by 9.5% in 2021, reaching EUR 4.5 billion. This is forecast to be driven largely by an annual growth in the value added of the architectural and engineering activities sub-sector (+19.2%) in 2021. The narrow construction sub-sector is expected to contribute to major share (46.3%) to total turnover in 2021, amongst other sub-sectors.

In parallel, the number of **persons employed** in the broad construction sector is also expected to annually increase by 9.0% reaching 296,006 in 2021. Most of this increase is forecast to come from the annual increase in the architectural and engineering activities sub-sector (+19.2%). The narrow construction sub-sector is expected to contribute a major share (59.4%) to the total number of persons employed in 2021.

The Greek **housing market** witnessed a decent annual increase of 3.3% in house prices in the first quarter of 2021. This growth was more pronounced in Athens and Thessaloniki, which witnessed growth of 5.4% and 3.7%, respectively in the first quarter 2021. The increase in the prices in 2021 has been backed by the recovering economy, along with increasing demand due to greater household incomes and urbanisation. The government's ENFIA measure, the reduction of the single property tax, introduced in 2020 has also boosted affordability amongst buyers.

In the years to come, foreign demand will likely continue to be the main driver of the residential property market, while the revival of the domestic market will be determined by Greece's ability to achieve sustainable growth that will create jobs and increase incomes. The evolution of the residential real estate market in Greece is tightly linked with the demand for tourism related investments²⁴⁹. Moreover, the government believes that the recovery of the tourism sector by the second half of 2021 will lead to further growth in housing prices and rental demand^{250,251}.

Greece's **National Recovery and Resilience Plan (NRRP)**, aiming to deploy funds amounting to EUR 30.5 billion in grants and loans, includes urban regeneration investment projects and renovation plans for upgrading the energy efficiency of residential buildings. This will help renovate the older housing stock and could create new

prospects for the Greek residential market. These factors collectively are set to drive the housing market forward in 2021 and the years to come²⁵².

Greece's **non-residential construction and civil engineering** is set to be driven forward by various projects lined up under the government's EUR 13.0 billion masterplan in 2021, including the completion of the country's highspeed motorway network and railway modernisation and urban transit systems. The country's EUR 2.26 billion Thessaloniki Metro project is also expected to begin in April 2023.

The long-term prospects for the construction sector as a whole will depend on Greece's ability to recover from the COVID-19 crisis, and to sustain a stable macroeconomic and political environment. However, the factors mentioned above, along with government's measures to revive the economy and planned infrastructure projects, points to a positive outlook for the Greek construction sector, making it more promising for investment in the coming years²⁵³.

References

- 1 Please note that this 2020 data is a nowcast - please refer to the methodology notes for further details.
 2 The gross operating rate is the ratio of Gross Operating Surplus to Turnover, and is an indicator of profitability
 3 More recent data is not available.
 4 More recent data is not available.
 5 More recent data is not available.
 6 2010 data is not available
 7 Please note that this 2020 data is a nowcast - please refer to the methodology notes for further details.
 8 European Commission, Greece's recovery and resilience plan- Greece. https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility/greeces-recovery-and-resilience-plan_en
 9 Please note that this 2020 data is a nowcast - please refer to the methodology notes for further details.
 10 Please note that the share of each sub-sector in the value added of the broad construction sector should not be compared to the shares of the Gross Value Added in the GDP, since the GDP also includes taxes and excludes subsidies.
 11 More recent data is not available for subsequent years.
 12 More recent data is not available for subsequent years.
 13 More recent data is not available for subsequent years.
 14 Apparent labour productivity refers to the gross value added per person employed.
 15 No data available for subsequent years.
 16 No data available for 2010
 17 No data available for subsequent years.
 18 EIB Investment Survey 2020 Greece, https://www.eib.org/attachments/efs/eibis_2020_greece_en.pdf
 19 The gross operating rate is the ratio of Gross Operating Surplus to Turnover, and is an indicator of profitability.
 20 No data available for 2010.
 21 The Greek Guru, In surprise jump, Greece sees spike in building activity despite soaring costs
<https://www.greekguru.net/single-post/greece-sees-building-boom-in-may-despite-soaring-construction-costs>
 22 Please note that this 2020 data is a nowcast - please refer to the methodology notes for further details.
 23 No data available for subsequent years
 24 No data available for subsequent years
 25 Ibidem.
 26 Unemployment Rises in Greece, Particularly Amongst Young People, <https://greekreporter.com/2021/07/11/unemployment-rises-greece-particularly-amongst-young-people/>
 27 World Bank Doing Business Report 2020, <https://www.doingbusiness.org/content/dam/doingBusiness/country/g/greece/GRC.pdf>
 28 As the publication of the WB Doing Business report 2021 was not available at the time of the writing, this report relies on the data provided by the 2020 edition
 29 World Bank Doing Business Report 2020, <https://www.doingbusiness.org/content/dam/doingBusiness/country/g/greece/GRC.pdf>
 30 2021 SME factsheet – background document,
https://ec.europa.eu/growth/sites/default/files/background_documents_of_the_sme_fact_sheets_2021.zip
 31 Ibidem.
 32 Ibidem.
 33 World Bank Doing Business Report 2020, <https://www.doingbusiness.org/content/dam/doingBusiness/country/g/greece/GRC.pdf>
 34 As the publication of the WB Doing Business report 2021 was not available at the time of the writing, this report relies on the data provided by the 2020 edition
 35 2021 SME factsheet – background document,
https://ec.europa.eu/growth/sites/default/files/background_documents_of_the_sme_fact_sheets_2021.zip
 36 EIB Investment Survey 2020 Greece, https://www.eib.org/attachments/efs/eibis_2020_greece_en.pdf
 37 SME access to finance conditions 2020 SAFE infographic report, <https://ec.europa.eu/docsroom/documents/43869>
 38 Ibidem.
 39 2021 SME factsheet – background document,
https://ec.europa.eu/growth/sites/default/files/background_documents_of_the_sme_fact_sheets_2021.zip
 40 More recent data is not available.
 41 According to Eurostat, construction services comprises Construction Abroad (code 250) and Construction in the Compiling Economy (code 251). They do not include architectural services, or engineering services.
 42 SME access to finance conditions 2020 SAFE infographic report, <https://ec.europa.eu/docsroom/documents/43869>
 43 EIB Investment Survey 2020: Finland Overview, <https://op.europa.eu/en/publication-detail/-/publication/259f07ac-433c-11eb-b27b-01aa75ed71a1>
 44 Ibidem.
 45 Ibidem.

46 Interview with PEDMEDE (Panhellenic Association of Engineers Contractors of Public Works)
 47 World Bank, Urban population (% of total), 2019.
<https://data.worldbank.org/indicator/sp.urb.totl.in.zs?end=2018&start=1960&view=chart>
 48 Data for 2020 not available
 49 Pandemic slows house price growth in Greece, <https://www.globalpropertyguide.com/Europe/Greece/Price-History>
 50 Ibidem.
 51 Greek Residential Property Market Resilient Going into 2021, but Underlying Prospects Tied to the Economy, <https://www.ot.gr/wp-content/uploads/2021/07/%CE%94%CE%B5%CE%AF%CF%84%CE%B5-%CE%B1%CE%BD%CE%B1%CE%BB%CF%85%CF%84%CE%B9%CE%BA%CE%AC-%CF%84%CE%B7%CE%BD-%CE%AD%CF%81%CE%B5%CF%85%CE%BD%CE%B1.pdf>
 52 Ibidem.
 53 Ibidem.
 54 Pandemic slows house price growth in Greece, <https://www.globalpropertyguide.com/Europe/Greece/Price-History>
 55 DBRS says Greek housing market not immune to crisis, <https://www.amna.gr/en/article/474378/DBRS-says-Greek-housing-market-not-immune-to-crisis>
 56 Pandemic slows house price growth in Greece, <https://www.globalpropertyguide.com/Europe/Greece/Price-History>
 57 The housing cost overburden rate is the percentage of the population living in households where the total housing costs represent more than 40% of disposable income.
 58 This figure is an estimation, as per the website.
 59 Eurostat, Housing cost overburden rate by age, sex and poverty status - EU-SILC survey.
http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=ilc_lvho07a&lang=en
 60 The overcrowding rate is defined as the percentage of the population living in an overcrowded household.
 61 This figure is an estimation, as per the website.
 62 Eurostat, Overcrowding rate. http://ec.europa.eu/eurostat/product?code=ilc_lvho05a&language=en&mode=view
 63 Eurostat, Severe housing deprivation rate is defined as the percentage of population living in the dwelling which is considered as overcrowded, while also exhibiting at least one of the housing deprivation measures. Housing deprivation is a measure of poor amenities and is calculated by referring to those households with a leaking roof, no bath/shower and no indoor toilet, or a dwelling considered too dark.
 64 This figure is an estimation, as per the website.
 65 Severe housing deprivation rate, http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=ilc_mdho06a&lang=en
 66 World Economic Forum, The Global Competitiveness Report 2019.
http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf
 67 Ibidem.
 68 European Semester Country Report – Greece 2020, <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020SC0507&from=EN>
 69 Stability Programme 2021, Greece, https://ec.europa.eu/info/sites/default/files/2021-greece-stability-programme_en.pdf
 70 Infrastructure in Greece, October 2020, https://www.pwc.com/gr/en/publications/Infrastructur_Greece_2019_EN.pdf
 71 European Commission- Greece’s recovery and resilience plan.
https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility/greeces-recovery-and-resilience-plan_en
 72 Data unavailable before 2015 and after 2018.
 73 Corporate Insolvencies In Europe, 2020, <https://www.febis.org/2021/06/08/corporate-insolvencies-in-europe-2020/>
 74 As per Atradius N.V., Western Europe comprises of the following countries: Austria, Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Netherlands, Spain, Sweden, Switzerland and United Kingdom
 75 Greece: companies cautious on credit but upbeat in 2021, <https://atradius.com.ru/reports/payment-practices-barometer-greece-2020-companies-cautious-on-credit-but-upbeat-about-2021.html>
 76 Ibidem
 77 Ibidem
 78 SAFE Report 2020, <https://ec.europa.eu/docsroom/documents/43869>
 79 SAFE Full Report 2020, <https://ec.europa.eu/docsroom/documents/43872>
 80 Greece: companies cautious on credit but upbeat in 2021, <https://atradius.com.ru/reports/payment-practices-barometer-greece-2020-companies-cautious-on-credit-but-upbeat-about-2021.html>
 81 SAFE Report 2020, <https://ec.europa.eu/docsroom/documents/43869>
 82 Greece: companies cautious on credit but upbeat in 2021, <https://atradius.com.ru/reports/payment-practices-barometer-greece-2020-companies-cautious-on-credit-but-upbeat-about-2021.html>
 83 Ibidem
 84 Ibidem
 85 SAFE Report 2020, <https://ec.europa.eu/docsroom/documents/43869>
 86 Since World Bank Doing Business report for 2021 unavailable as the World Bank has decided to discontinue this, used 2020 report only.
 87 World Bank Group. Doing Business 2020. Economy Profile for Greece.
<https://www.doingbusiness.org/content/dam/doingBusiness/country/g/greece/GRC.pdf>
 88 The warehouse in this example is defined as a structure for general storage activities, with two stories, above ground and with total constructed area of approx. 1,300 square meters. The ground, on which the warehouse is built is owned by the company that will use it

and valued at 50 times income per capita. There are architectural and technical plans prepared for the warehouse, which are also taken into account and counted as procedures if their preparation requires obtaining further documentation or getting prior approvals from external agencies. Finally, in this example the warehouse takes 30 weeks to construct, excl. all delays due to administrative and regulatory requirements.

- 89 World Bank Group. Doing Business 2020. Economy Profile for Greece.
<https://www.doingbusiness.org/content/dam/doingBusiness/country/g/greece/GRC.pdf>
- 90 As the publication of the WB Doing Business Report 2021 was not available at the time of the writing, this report relies on the data provided by the 2020 edition.
- 91 Data before 2014 not available.
- 92 Data before 2014 not available.
- 93 Data for 2020 not available.
- 94 Data for 2020 not available.
- 95 Data for 2020 not available.
- 96 Data for 2020 not available.
- 97 Shortage occupations in Greece, 2021, <https://wagecentre.com/work/work-in-europe/shortage-occupations-in-greece>
- 98 Review of the Construction Labour Demand and Shortages in the EU, <https://www.mdpi.com/2075-5309/11/1/17>
- 99 Shortage occupations in Greece, 2021, <https://wagecentre.com/work/work-in-europe/shortage-occupations-in-greece>
- 100 EIB Investment Survey 2020 Greece, https://www.eib.org/attachments/efs/eibis_2020_greece_en.pdf
- 101 Interview with PEDMEDE (Panhellenic Association of Engineers Contractors of Public Works)
- 102 Ibidem
- 103 Waste Management in Greece: A Herculean Task, <https://waste-management-world.com/a/waste-management-in-greece-a-herculean-task>
- 104 Ibidem.
- 105 Ibidem.
- 106 Ibidem.
- 107 Progress and Challenges in C&D Waste Management in Greece,
https://www.researchgate.net/publication/333683274_Progress_and_Challenges_in_CD_Waste_Management_in_Greece/link/5cff9d194585157d15a22dc7/download
- 108 Ibidem.
- 109 Construction and Demolition Waste management in Greece,
https://ec.europa.eu/environment/pdf/waste/studies/deliverables/CDW_Greece_Factsheet_Final.pdf
- 110 Interview with PEDMEDE (Panhellenic Association of Engineers Contractors of Public Works)
- 111 Ibidem
- 112 As the EU-27 average data was not available, the EU-28 average was used for comparative purpose
- 113 European Semester Country Report – Greece 2020, <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020SC0507&from=EN>
- 114 Regional Outlook 2021 - Country notes, Greece, Progress in the net zero transition,
<https://www.oecd.org/regional/RO2021%20Greece.pdf>
- 115 European Commission, Climate action in Greece,
[https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/690685/EPRS_BRI\(2021\)690685_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/690685/EPRS_BRI(2021)690685_EN.pdf)
- 116 Million tonnes of carbon dioxide equivalent
- 117 European Commission, Climate action in Greece,
[https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/690685/EPRS_BRI\(2021\)690685_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/690685/EPRS_BRI(2021)690685_EN.pdf)
- 118 Data unavailable for 2020.
- 119 Data unavailable for 2020.
- 120 European innovation scoreboard 2021, Greece, <https://ec.europa.eu/docsroom/documents/45916>
- 121 Ibidem.
- 122 BERD for real estate activities and professional, scientific and technical activities sub-sectors were zero from 2010 to 2020.
- 123 Data unavailable before 2011.
- 124 Data unavailable for subsequent years
- 125 Data unavailable for subsequent years
- 126 A full-time equivalent (FTE) is a unit to measure employed persons in a way that makes them comparable, although they may work a different number of hours per week. The unit is obtained by comparing an employee's average number of hours worked to the average number of hours of a full-time worker. A full-time person is therefore counted as one FTE, while a part-time worker gets a score in proportion to the hours worked.
- 127 Data unavailable before 2011.
- 128 Eurostat data available only for 2011, 2013 and 2015 for Construction and Professional, scientific and technical activities.
- 129 The 2020 EU Industrial R&D Investment Scoreboard, <http://iri.jrc.ec.europa.eu/scoreboard/2020-eu-industrial-rd-investment-scoreboard>
- 130 SAFE Report 2020, <https://ec.europa.eu/docsroom/documents/43869>
- 131 The Eco-Innovation Scoreboard and The Eco-Innovation Index, https://ec.europa.eu/environment/ecoap/indicators/index_en
- 132 Ibidem.
- 133 Digital Economy and Society Index (DESI) 2020, Greece, <https://digital-strategy.ec.europa.eu/en/policies/desi-greece>

134	Ibidem.
135	Ibidem.
136	As the EU-27 average data was not available, the EU-28 average was used for comparative purpose.
137	As the EU-27 average data was not available, the EU-28 average was used for comparative purpose.
138	EIB Investment Survey 2020 Greece, https://www.eib.org/attachments/efs/eibis_2020_greece_en.pdf
139	Ibidem.
140	As the EU-27 average data was not available, the EU-28 average was used for comparative purpose.
141	As the EU-27 average data was not available, the EU-28 average was used for comparative purpose.
142	EIB Investment Survey 2020 Greece, https://www.eib.org/attachments/efs/eibis_2020_greece_en.pdf
143	How to Adopt BIM in the Building Construction Sector across Greece? https://www.researchgate.net/publication/339326378_How_to_Adopt_BIM_in_the_Building_Construction_Sector_across_Greece
144	Ibidem.
145	COVID-19: Extension to deadlines for renewable energy projects in Greece, https://www.nortonrosefulbright.com/en/knowledge/publications/0a3ccf14/covid-19-extension-to-deadlines-for-renewable-energy-projects-i
146	Implementation of a new means-tested rent subsidy in Greece, https://ec.europa.eu/social/BlobServlet?docId=21389&langId=en
147	Ibidem
148	Ibidem
149	Housing Europe, The National Strategy for Social Inclusion – Greece. January 2015. https://www.google.lu/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&cad=rja&uact=8&ved=0ahUKewj45YGS0zNAhVEMhokHaJfAeMQFgnMAE&url=http%3A%2F%2Fwww.housingeurope.eu%2Ffile%2F255%2Fdownload&usq=AFQjCNHR1vdwmWHxWw-SXuECi_GxgOdAlg
150	Ibidem.
151	Housing loan subsidy may be extended, https://www.ekathimerini.com/economy/1166926/housing-loan-subsidy-may-be-extended/
152	Ibidem.
153	Greece: Plan sees extra help for households in 2022, https://vema.com.au/greece-plan-sees-extra-help-for-households-in-2022/
154	Foreclosure is a legal process in which a lender attempts to recover the balance of a loan from a borrower who has stopped making payments to the lender by forcing the sale of the asset used as the collateral for the loan.
155	National strategies to fight homelessness and housing exclusion Greece, https://www.emfasisfoundation.org/wp-content/uploads/2020/07/ESPN_EL_homelessness-and-housing-exclusion_2019-1.pdf
156	Ministry of Justice, Transparency and Human Rights, ΓΕΝΙΚΟΣ ΟΙΚΟΔΟΜΙΚΟΣ ΚΑΝΟΝΙΣΜΟΣ. http://www.ministryofjustice.gr/site/kodikēsEυρετήριο/ΓΕΝΙΚΟΣΟΙΚΟΔΟΜΙΚΟΣΚΑΝΟΝΙΣΜΟΣ/tabid/226/language/el-GR/Default.aspx
157	Hellenic Institute for Occupational Health and Safety, Εθνική Νομοθεσία. http://www.elinyae.gr/el/keywords.jsp?keyword=469
158	Ministry of Environment and Energy, ΝΟΜΟΘΕΣΙΑ. http://www.ypeka.gr/Default.aspx?tabid=323&locale=el-GR&language=en-US
159	Ministry of Justice, Transparency and Human Rights, ΚΩΔΙΚΑΣ ΚΑΤΑΣΚΕΥΗΣ ΔΗΜΟΣΙΩΝ ΕΡΓΩΝ. http://www.ministryofjustice.gr/site/kodikēsEυρετήριο/ΚΩΔΙΚΑΣΚΑΤΑΣΚΕΥΗΣΔΗΜΟΣΙΩΝΕΡΓΩΝ/tabid/285/language/el-GR/Default.aspx
160	Dikaiologitika News, The draft law on the control and protection of the built environment. June 2017. https://www.dikaiologitika.gr/eidhseis/oikonomia/160423/to-sxedio-nomou-gia-ton-elegxo-kai-tin-prostasia-tou-domimenou-perivallontos
161	E- nomothesia. “Ο Νέος τρόπος έκδοσης οικοδομικών αδειών” November 2017. https://www.e-nomothesia.gr/law-news/neos-tropos-ekdoses-oikodomikon-adeion.html
162	Real Estate in Greece, https://www.lexology.com/library/detail.aspx?g=8bbdb9ca-f42f-4b70-b1c8-e1717a4f1877
163	Ibidem
164	Building requirements in Greece: building regulation, https://greece-invest.com/construction/stroitelnye-normy-v-gretsii
165	Ibidem.
166	ELIOS 2, European Liability Insurance Organisation Schemes, Final Report. February 2015. http://www.elios-ec.eu/sites/default/files/elios2-final-report.pdf
167	ELIOS, Liability and insurance regimes in the construction sector: national schemes and guidelines to stimulate innovation and sustainability. April 2010. http://www.elios-ec.eu/sites/default/files/pdf/EliosSpecialReporton27MemberStates.pdf
168	Ibidem.
169	This includes total investment by the construction and real estate sub-sectors, defined as gross fixed capital formation, i.e. acquisitions minus disposal, of total fixed assets (e.g. machinery and equipment, vehicles, dwellings and other buildings).
170	Data not available for 2020.
171	Data not available for 2020.
172	Data not available for 2020.
173	Data not available for 2020.
174	Data not available for 2020.
175	Data not available for 2020.
176	Data not available for 2020.
177	Data not available for 2020.
178	Data not available for 2020.
179	This includes total investment (i.e. gross fixed capital formation) in dwellings and non-residential construction and civil engineering by investors in the general economy (e.g. industry, financial and non-financial services, households, agricultural sector, etc.).

180 Data not available for 2020.

181 The indicator gross fixed capital formation in non-residential and civil engineering refers to the Eurostat indicator «Other buildings and structures»

182 According to OECD, Inland infrastructure includes road, rail, inland waterways, maritime ports and airports and takes account of all sources of financing, <https://data.oecd.org/transport/infrastructure-investment.htm>

183 Data not available for 2020.

184 Data not available for 2020.

185 As the EU-27 average data was not available, the EU-28 average was used for comparative purpose

186 Investment Plan results, Breakdown of results by country and sector from the European Fund for Strategic Investments, https://ec.europa.eu/commission/strategy/priorities-2019-2024/jobs-growth-and-investment/investment-plan-europe/investment-plan-results_en

187 Investment Plan: Greece, https://ec.europa.eu/info/strategy/priorities-2019-2024/economy-works-people/jobs-growth-and-investment/investment-plan-europe/investment-plan-results/investment-plan-greece_en

188 Finland and the EIB. <https://www.eib.org/en/projects/regions/european-union/finland/index.htm>

189 SUSTAINABLE URBAN DEVELOPMENT IN GREECE, <https://www.eib.org/en/projects/pipelines/all/20200177>

190 Infrastructure And Logistics Investment Sectors, Greece, <https://www.greeceinvestorguide.com/sectors/infrastructure-and-logistics/>

191 Ibidem.

192 Ibidem.

193 Ibidem.

194 Ibidem.

195 Greece, DRAFT BUDGETARY PLAN 2021, https://ec.europa.eu/info/sites/default/files/economy-finance/2021_dbp_el_en.pdf

196 Ibidem.

197 Ibidem.

198 Data unavailable for 2020.

199 Data unavailable for 2020.

200 Data unavailable for 2020.

201 Education and Training Monitor 2020 Greece, <https://op.europa.eu/en/publication-detail/-/publication/c952f294-2497-11eb-9d7e-01aa75ed71a1/language-en/format-PDF/source-171316620>

202 Data unavailable for 2020.

203 Education and Training Monitor 2020 Greece, <https://op.europa.eu/en/publication-detail/-/publication/c952f294-2497-11eb-9d7e-01aa75ed71a1/language-en/format-PDF/source-171316620>

204 Ibidem.

205 Data unavailable for 2020.

206 Data unavailable for 2020.

207 Ibidem.

208 Why investment in learning for adults should be a priority in Greece, <https://www.cedefop.europa.eu/en/news-and-press/press-and-media/press-releases/why-investment-learning-adults-should-be-priority-greece>

209 Education and Training Monitor 2020 Greece, <https://op.europa.eu/en/publication-detail/-/publication/c952f294-2497-11eb-9d7e-01aa75ed71a1/language-en/format-PDF/source-171316620>

210 DRAFT BUDGETARY PLAN 2021, Greece, https://ec.europa.eu/info/sites/default/files/economy-finance/2021_dbp_el_en.pdf

211 Energy efficiency first: accelerating towards a 2030 objective of 32.5%, https://ec.europa.eu/info/news/energy-efficiency-first-accelerating-towards-2030-objective-2019-sep-25_en

212 Climate action in Greece, Latest state of play, [https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/690685/EPRS_BRI\(2021\)690685_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/690685/EPRS_BRI(2021)690685_EN.pdf)

213 National Energy and Climate Plan, https://ec.europa.eu/energy/sites/ener/files/el_final_necp_main_en.pdf

214 Ibidem

215 Ibidem

216 Ibidem

217 Ibidem

218 Assessment of the National Energy and Climate Plan of Greece 2019 – July 2019. https://ec.europa.eu/energy/sites/ener/files/documents/gr_swd_en.pdf

219 Climate action in Greece, Latest state of play, [https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/690685/EPRS_BRI\(2021\)690685_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/690685/EPRS_BRI(2021)690685_EN.pdf)

220 Ibidem

221 Ministry working on Electra program for public building upgrades, <https://energynews.eu/tag/saving-at-home/>

222 Ibidem

223 Ibidem.

224 Ibidem

225 European Commission- Greece's recovery and resilience plan. https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility/greeces-recovery-and-resilience-plan_en

226 As the EU-27 average data was not available, the EU-28 average was used for comparative purpose

227 As the EU-27 average data was not available, the EU-28 average was used for comparative purpose

228 As the EU-27 average data was not available, the EU-28 average was used for comparative purpose
 229 As the EU-27 average data was not available, the EU-28 average was used for comparative purpose
 230 As the EU-27 average data was not available, the EU-28 average was used for comparative purpose
 231 As the EU-27 average data was not available, the EU-28 average was used for comparative purpose
 232 Greece - The Single Market Scoreboard - European Commission,
https://ec.europa.eu/internal_market/scoreboard/docs/2020/07/member-states/el_en.pdf
 233 As the EU-27 average data was not available, the EU-28 average was used for comparative purpose
 234 Greece - The Single Market Scoreboard - European Commission,
https://ec.europa.eu/internal_market/scoreboard/docs/2020/07/member-states/el_en.pdf
 235 Greece Corruption Report, <https://www.ganintegrity.com/portal/country-profiles/greece/>
 236 Ibidem.
 237 Interview with PEDMEDE (Panhellenic Association of Engineers Contractors of Public Works)

238 World Economic Forum, The Global Competitiveness Report 2019.
http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf
 239 As the World Economic Forum Global Competitiveness Index – Special Edition 2020 did not provide updated data on infrastructure, this report relies on the data provided by the 2019 edition.
 240 Ibidem.
 241 Data not available for subsequent years.
 242 Inward FATS describe the overall activity of foreign affiliates resident in the compiling economy. A foreign affiliate within the terms of inward FATS is an enterprise resident in the compiling country over which an institutional unit not resident in the compiling country has control.
 243 Data not available before 2012 and after 2018
 244 Data not available before 2012 and after 2017
 245 Data not available for subsequent years.
 246 Data not available before 2013 and after 2017
 247 2021 SME COUNTRY FACT SHEET'S BACKGROUND DOCUMENT,
https://ec.europa.eu/growth/sites/default/files/background_documents_of_the_sme_fact_sheets_2021.zip
 248 Μακεδονίας και Θράκης / "Support provided for the modernization - upgrading of existing enterprises, with priority in areas of the Regional Smart Specialization Strategy (Action 3d.5-6.1), <https://www.espa.io/wp-content/uploads/2020/01/enischisi-eksigxronismos-anavathmisi-ifestamenon-epicheiriseon-kata-proteraiotita-tomeis-ris3.pdf>
 249 Greek Residential Property Market Resilient Going into 2021, but Underlying Prospects Tied to the Economy, <https://www.ot.gr/wp-content/uploads/2021/07/%CE%94%CE%B5%CE%AF%CF%84%CE%B5-%CE%B1%CE%BD%CE%B1%CE%BB%CF%85%CF%84%CE%B9%CE%BA%CE%AC-%CF%84%CE%B7%CE%BD-%CE%AD%CF%81%CE%B5%CF%85%CE%BD%CE%B1.pdf>
 250 Greece residence permit for investment, <https://immigrantinvest.com/en/insider/greece-apartment-prices/>
 251 Real estate in Greece, <https://immigrantinvest.com/en/insider/property-prices-in-greece-2021/>
 252 Greek Residential Property Market Resilient Going into 2021, but Underlying Prospects Tied to the Economy, <https://www.ot.gr/wp-content/uploads/2021/07/%CE%94%CE%B5%CE%AF%CF%84%CE%B5-%CE%B1%CE%BD%CE%B1%CE%BB%CF%85%CF%84%CE%B9%CE%BA%CE%AC-%CF%84%CE%B7%CE%BD-%CE%AD%CF%81%CE%B5%CF%85%CE%BD%CE%B1.pdf>
 253 Ibidem.