



Study on State asset management in the EU

Final study report for Pillar 2 – Greece

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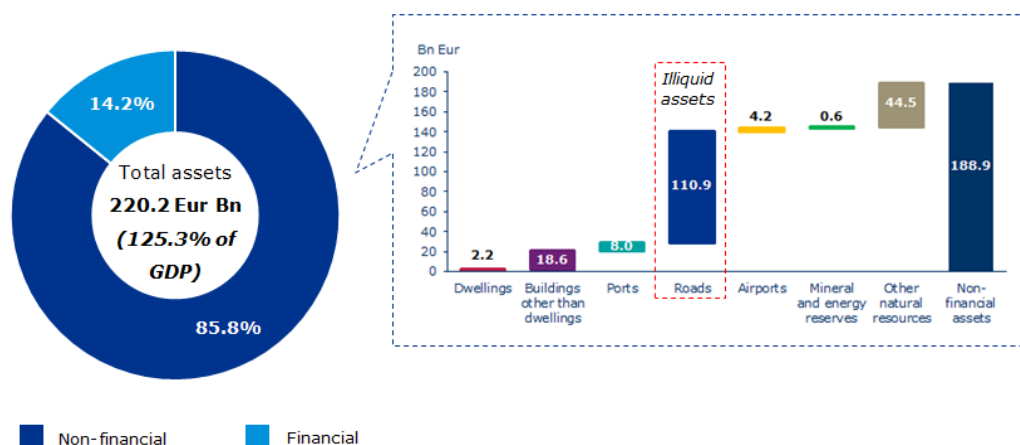
This Country fiche presents a quantitative overview of the mix of non-financial assets owned by the Greek General government.

A recap and a summary table on sources of data and valuation methods used to map and assess (as far as possible) non-financial assets owned by the Greek General government is reported in the Appendix (Table C).

1. OVERVIEW OF NON-FINANCIAL ASSETS

In 2015, the estimated value of Non-financial assets owned by the Greek General government was equal to 188.9 Eur Bn, accounting for about 86% of the estimated value of all assets (including Financial assets) owned by the General government¹.

Figure 1 General government's Financial and Non-financial assets (Eur Bn), Greece, 2015



Source: KPMG elaboration. Data on Gross Domestic Product were directly retrieved from Eurostat on 19th September 2017.

- (1) Estimated values refer to 2015 as the latest available year for both financial assets and all clusters of non-financial assets.
- (2) In this chart, the "estimated value" of financial assets is reported in terms of Total Assets of the country's PSHs as weighted by the stake(s) owned by the Public sector into the PSHs themselves².
- (3) In this chart the estimated value of Other natural resources only includes the estimated value of lands.
- (4) In this chart, the value of Railways is not represented as it has already been accounted for in Pillar 1.
- (5) Values of Dwellings, and Buildings other than dwellings were directly retrieved from Eurostat, while values for other Non-financial assets were estimated according to the valuation approaches explained in the Methodological Notes for Pillar 2.
- (6) Since roads are an illiquid asset we applied a Perpetual Inventory Method (PIM). However, this valuation method tends to slightly overestimate the value of the asset. Therefore the chart shows the lower bound figure of the range of road and railways valuation estimates only.
- (7) The estimated value for Mineral and Energy reserves refers to the estimate computed on 2015 average prices. Since the prices of Oil and Natural Gas can present many fluctuations over the year, the average of all price points was used as an accurate representation of the annual value of this assets, in order to better account for possible outliers.

¹ As explained in the Methodological Notes for Pillar 2, Non-financial assets that are owned by PSHs are evaluated through the equity method. Therefore their value is not represented in this Pillar as it has already been accounted for in Pillar 1. The allocation of Non-financial assets between Pillar 1 and 2 is listed in Table A in the Appendix to the EU Fiche.

² For more details on how Total Assets for Financial Assets are calculated, please see Pillar 1.

2. DWELLINGS

Eurostat provides a comprehensive coverage of data on the value of dwellings; therefore, data on Greek dwellings are retrieved from Eurostat only.

As shown in Table 1 below, the value of the Greek General government's dwellings in 2015 was equal to about 2 Eur Bn, accounting for 0.7% of the value of all the dwellings within the country.

Table 1 General government's dwellings (Eur Mn), Greece, 2010-2015

Data in Eur Mn	2010	2011	2012	2013	2014	2015 (€)
General government	2,702	2,535	2,445	2,347	2,205	2,205
Share of the total economy	0.8%	0.7%	0.7%	0.7%	0.7%	0.7%

Source: Eurostat database, 2010-2015, Balance sheets for non-financial assets, Available at: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nama_10_nfa_bs&lang=en [downloaded in July 2017].

- (1) The share of Dwellings in the economy refers to the value of Dwellings (rather than the number of Dwellings).
- (2) Eurostat does not report the values for 2015 for the General government institutional sector. In addition, no other official national sources provide information on the value of General government's Dwellings. Therefore, the values for 2010 are held to be constant for the following years.

3. OTHER BUILDINGS AND STRUCTURES

- Buildings other than dwellings

Eurostat provides good coverage of data on the value of buildings other than dwellings owned by the Greek General government, hence data on this cluster of assets is retrieved from Eurostat only.

As shown in Table 2, the value of these assets has slightly decreased reaching a value of about 19 Eur Bn in the last year worth of data (2015) – or 23.6% of all Greek buildings other than dwellings.

Table 2 General government's Buildings other than dwellings (Eur Mn), Greece, 2010-2015

Data in Eur Mn	2010 (€)	2011 (€)	2012	2013	2014	2015 (€)
General government	19,762	19,353	19,137	18,956	18,557	18,557
Share of the total economy	24.4%	24.4%	24.4%	24.0%	23.6%	23.6%

Source: Eurostat database, 2010-2015, Balance sheets for non-financial assets, Available at: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nama_10_nfa_bs&lang=en [downloaded in July 2017].

- (1) The share of Buildings other than dwellings in the economy refers to the value of Buildings other than dwellings (rather than the number of Buildings other than dwellings).
- (2) Eurostat does not report the values for 2010 and 2011, because of the fact that data transmission from countries to Eurostat for this type of assets was on a voluntary basis until 2012. In addition, no other official national sources provide information on the value of General government's Buildings other than dwellings for 2010 and 2011. Therefore, values for these years were estimated so to reflect the general trend of the market value of the Total Economy's Buildings other than dwellings in each of these years. Moreover, Eurostat does not report the values for 2015 for the General government institutional sector too, and no other official national sources provide information on the value of General government's Buildings other than dwellings for 2015. Therefore, the value for 2014 is held to be constant for the following year.

- Ports

In Greek government's asset portfolio, there are two types of ports:

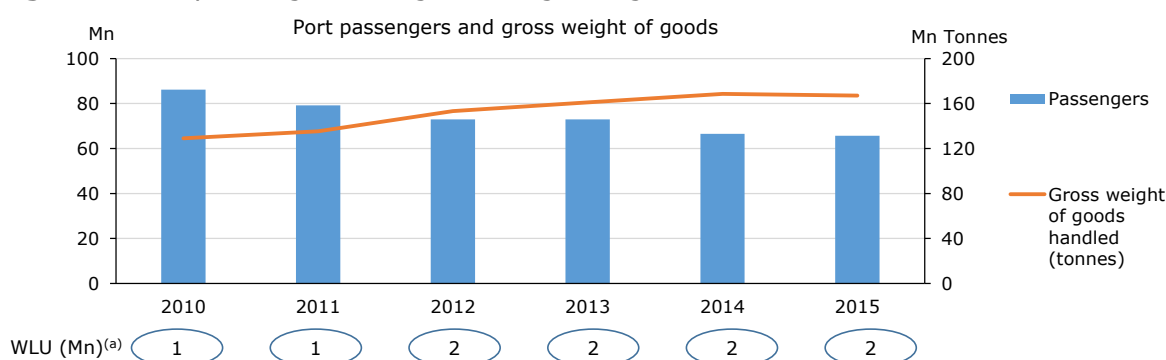
- state-owned ports under concession, which include 13 ports, namely Piraeus, Thessaloniki, Volos, Rafina, Igoumenitsa, Patras, Alexandroupolis, Heraklion, Elefsina, Lavrio, Corfu, Evia and Kavala³;
- municipal and local government-owned ports.

National, state-owned ports are placed within the jurisdiction of the *Hellenic Republic Asset Development Fund (HRADF)*, and are managed and operated by many port authorities. Specifically, each port organisation signs a long-term concession agreement with the *HRADF*. This means that the Greek state keeps the ownership of ports, while grants ports management in concession to many autonomous, commercial legal entities.

As mentioned above, Greek state's portfolio includes smaller ports and municipal ports, which are managed by several minor port entities. These bodies govern each of the other ports/harbours under the auspices the *Ministry of Maritime and Island Policy*.

Figure 2 shows the overall maritime port traffic (for both passengers and goods) in Greece over the 2010–2015 time period⁴.

Figure 2 Port passengers and gross weight of goods, Greece, 2010-2015



Source: Eurostat database, 2010-2015 [downloaded in March 2017]. Country level - passengers embarked and disembarked in all ports by direction (available at: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=mar_mp_aa_cphd&lang=en) and Gross weight of goods handled in all ports by direction (available at: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=mar_go_aa&lang=en).

(1) With regard to passengers, all passengers embarked from and disembarked to all maritime ports within the country have been considered.

(2) With regard to the gross weight of goods handled, the Gross weight of goods handled in all maritime ports within the country have been considered.

(a) A Workload Unit (WLU) is defined as one passenger or 100 kg of cargo.

On the basis of the market value (per workload unit) for ports, retrieved from recent transactions⁵, the value of maritime ports in the country was estimated (as shown in Table 3) over the period 2010-2015. In 2015, the estimated value was equal to about 8.0 Eur Bn.

Table 3 Estimated value for Maritime Ports (Eur Mn), Greece, 2010-2015

Data in Mn Eur	2010	2011	2012	2013	2014	2015
Ports	6,339	6,594	7,394	7,747	8,064	7,993

Source: KPMG calculations based on Eurostat and the Mergermarket database, 2010-2015 [downloaded in March 2017].

³ Regulatory Authority of ports. Annual report 2016, p. 12- Available at: <http://www.raports.gr/en/node/81> [Accessed 15th November 2017].

⁴ For the list of Maritime Ports included in this Study, please see Table B in the Appendix.

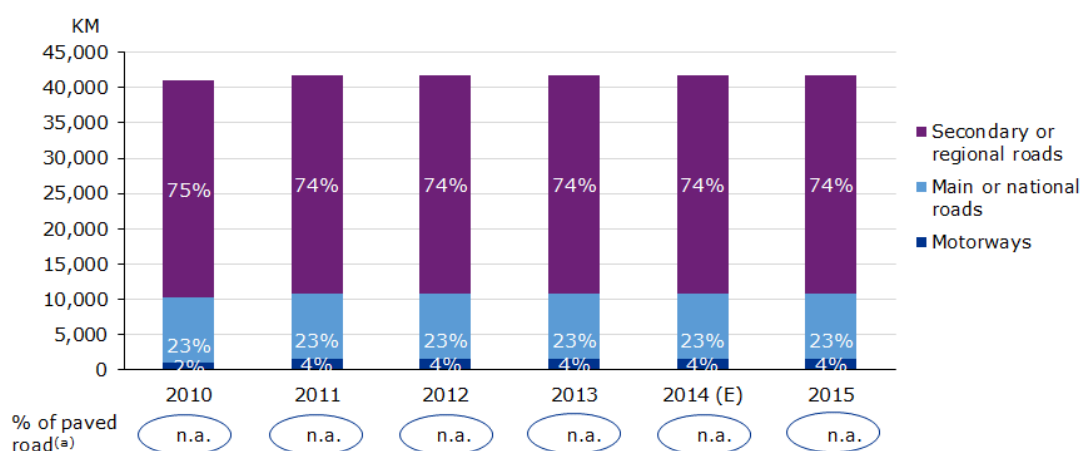
⁵ For the list of the so-called "comparable" transactions included in our "peer group", please see the list of Table 8 in the Annex.

- *Roads*

According to current legislation, all Greek roads are state-owned, but their management model varies depending on the type of road. In particular, Greek roads can be divided into the following three main categories:

- *motorways*, which are state-owned and granted in concession to many private companies (e.g. *Attiki Odos, Ionia Odos, Egnatia Odos*);
- national roads, which are directly managed by the Central government;
- local roads, which are managed by the local governments.

Figure 3 Length (in km) of Motorways, Main or national roads and Secondary or regional roads, Greece, 2010-2015



Source: Directorate-General for Mobility and Transport (DG MOVE) database, 2010-2015 [downloaded in September 2017]. Values for percentage of paved road were calculated using Eurostat data on length of other roads by type of surface.

(1) DG MOVE's data does not report the length of Main or national roads and Secondary or regional roads for year 2014. Therefore, the values for the year 2014 have been estimated as average between 2013 and 2015 values.

(2) For the sake of accuracy and comparability among the EU28 Member States, the valuation includes Motorways, Main or national roads and Secondary or regional roads only.

(3) According to DG MOVE's data, the extension of the Greek road network is equal to 117,352 Km (including the length of Motorways, Main or national roads, Secondary or regional roads and Other roads) in 2015.

(4) Eurostat does not report the length of paved road network for years taken into account.

(a) The percentage of paved road has been calculated based on the total extension of the road network (including other roads). It represents the length of paved road network over the total length of road network.

Table 4 reports the results of the valuation exercise carried out according to the valuation procedure described in the Methodological Notes for Pillar 2. In this respect, please be reminded that, to ensure accuracy and comparability, the valuation includes motorways, Main or national roads, and Secondary or regional roads only.

In Greece, overall, in 2015 the estimated value of roads ranged between 111 Eur Bn to 122 Eur Bn. Secondary or regional roads take the lion's share with a estimated value between 52 Eur Bn and 55 Eur Bn.

Table 4 Estimated road value for Motorways, Main or national roads and Secondary or regional roads only (Eur Mn), Greece, 2010-2015

Data in Eur Mn		2010	2011	2012	2013	2014	2015
Motorways	Min	18,356	19,714	20,685	22,344	23,811	25,281
	Max	19,002	20,369	21,336	22,979	24,427	25,879
Main or national roads	Min	35,763	36,345	36,128	35,234	34,169	33,239
	Max	44,154	44,860	44,592	43,488	42,174	41,024
Secondary or regional roads	Min	56,250	57,255	56,914	55,508	53,834	52,371
	Max	59,455	60,508	60,148	58,661	56,892	55,346
Total	Min	110,369	113,314	113,728	113,086	111,815	110,890
	Max	122,611	125,737	126,077	125,128	123,493	122,250

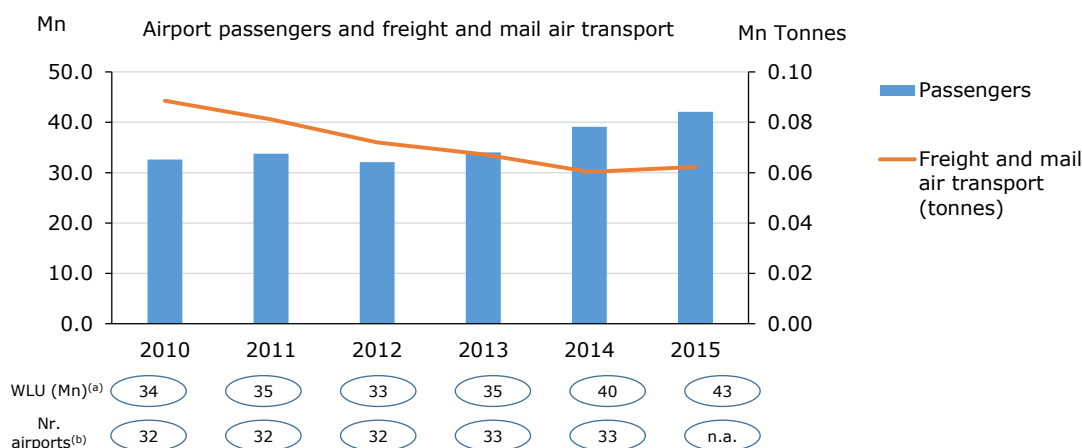
Source: KPMG calculations on Directorate-General for Mobility and Transport (DG MOVE) and Eurostat data [downloaded in July 2017].

- Airports

According to current legislation, Greek airport infrastructures are state-owned. Then, the Central government can grant their management in concession to companies, both private and PSHs, through the *Hellenic Republic Asset Development Fund (HRADF)*.

As shown in Figure 4 below, airport traffic in Greece has been increasing over the 2010–2015 time period⁶.

Figure 4 Airports passengers, freight and mail air transport, Greece, 2010-2015



Source: Eurostat database, 2010-2015, [downloaded in March 2017]. Air passenger transport by main airports in each reporting country (available at: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=avia_paoa&lang=en), Freight and mail air transport by main airports in each reporting country (available at: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=avia_qooa&lang=en) and Number of commercial airports with more than 15,000 passenger units per year (available at: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=avia_if_arp&lang=en).

(1) The number of passengers refers to all on board passengers.

(2) All freight and mail air transport is included.

(3) Eurostat does not report the number of commercial airports for 2015.

(a) A Workload Unit (WLU) is defined as one passenger or 100 kg of cargo.

(b) Total number of airports (with more than 15,000 passenger units per year).

To assess the value of airports, an income approach was applied (for more details, please see the Methodological Notes for Pillar 2).

⁶ For the list of Airports included in this Study, please see Table A in Appendix.

According to the estimates reported in Table 5, in 2015, the overall estimated value of Public Airports was equal to about 4.2 Eur Bn, with an increase of about 25.4% since 2010.

Table 5 Estimated value for airports (Eur Mn), Greece, 2010-2015

Data in Mn Eur	2010	2011	2012	2013	2014	2015
Airports	3,352	3,386	3,195	3,338	3,847	4,202

Source: KPMG calculations on Eurostat database, 2010-2015 [downloaded in May 2017].

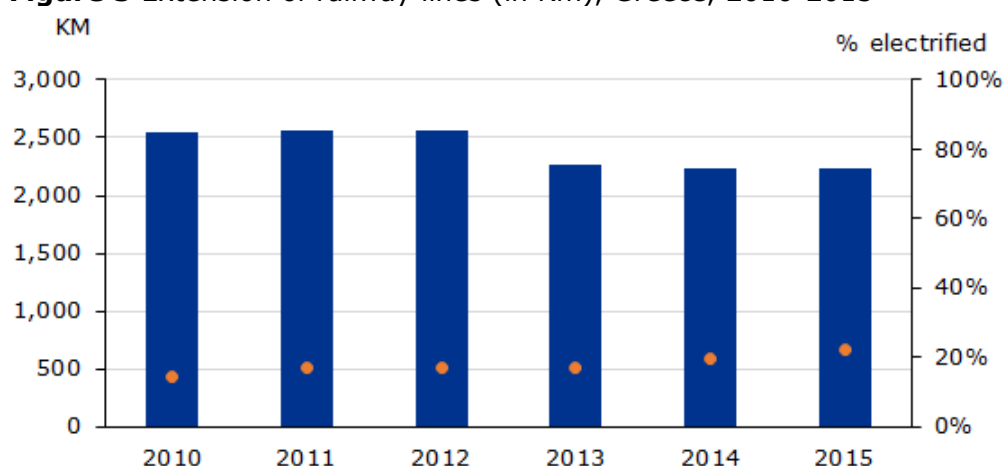
(1) The WLUs used to calculate the value of airports do not match with those represented in Figure 4 as they were calculated by adding the WLUs of all airports considered within the scope of this Pillar (see Table A in Appendix).

- Railways

In Greece, the National Railway Infrastructure is owned by the *Hellenic Railways Organization (OSE) SA*, which is responsible for the constructing, upgrading and maintaining the existing railway infrastructure and superstructure, electromechanical systems, signaling, telecommunications and electrification, tunnels, bridges, as well as all other facilities required for network operations⁷.

As shown in Figure 5, the extension of the railway network in Greece was equal to about 2.200 km in 2015.

Figure 5 Extension of railway lines (in Km), Greece, 2010-2015



Source: Directorate-General for Mobility and Transport (DG MOVE), 2010-2015 [downloaded in October 2017]. The percentages of electrified lines were calculated using Eurostat database "Railway transport - length of tracks" available at: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=rail_if_tracks&lang=en [downloaded in October 2017].

(1) The percentage of electrified network represents the length of electrified railway tracks over the total length of railway tracks for year.

Since the Greek railway network is owned by a PSH, then its value is assessed using the equity method (please see the Methodological notes for Pillar 2 for more details), and results are reported in Pillar 1 of this Study.

⁷ Hellenic Railways Organization (OSE) SA website. Available at: <http://www.ose.gr/en/25-about-ose/89-%CF%83%CE%B9%CE%B4%CE%B7%CF%81%CE%BF%CE%B4%CF%81%CE%BF%CE%BC%CE%B9%CE%BA%CE%AE-%CF%85%CF%80%CE%BF%CE%B4%CE%BF%CE%BC%CE%AE-2> [Accessed 18th May 2017].

4. NATURAL RESOURCES

- *Mineral and Energy reserves*

The reference legislation for mining industry is the *Mining Code (Legislative Decree 210/1973, as amended by several Laws)* and the *Regulation on Mining and Quarrying activities (Ministerial Decision 12050 of 2011)*. According to these laws, mining is considered of public interest and it is protected by the *Greek Constitution*.

In particular, according to Art. 65 of the Greek *Mining Code*, the mineral right is defined as a particular property right that is separated from ground property rights. It is granted through a Presidential Decree to one or more persons or entities, and it is registered in the official land registry. Mineral rights normally do not exceed a period of 50 years, with an option for a maximum of two following extension for the equivalent of 25 years each (following the Minister's agreement stated through the provision of a specific license).

Table 6 reports capacity of the Greek proven Mineral and Energy reserves in 2015.

Table 6 Proven reserves of mineral and energy reserves, Greece, 2015

Data	Oil (Barrels)	Natural gas (cubic meters)
Proven reserves	10,000,000	991,100,000

Source: Central Intelligence Agency (CIA). World Factbook Database, 2015 [downloaded in March 2017].

As shown in Table 7, the estimated value for Oil reserves in Greece in 2015 was equal, on average, to 0.5 Eur Bn. With regard to Natural Gas, the estimated value was instead equal to an average of about 0.1 Eur Bn.

Table 7 Estimated value of oil and natural gas proven reserves (Eur Mn), Greece, 2015

Data in Mn Eur	Min	Max	Average
Oil	326	611	483
Natural gas	54	105	80
Total	379	717	564

Source: KPMG calculations on World Factbook Database, 2015 [downloaded in March 2017].

(1) Proven reserves are valued using average prices for 2015.

(2) Range is calculated using the minimum and the maximum prices for 2015.

- *Other natural resources*

Eurostat and National Statistics do not provide figures for the cluster of "Other natural resources" in Greece.

The value of other natural resources has been estimated through a market approach, as outlined in Methodological Notes. As Table 8 shows, the estimated value of Other natural resources is equal to 44 Eur Bn in 2015.

Table 8 Estimated values of General government's Other natural resources (Eur Mn), Greece, 2010-2015

Data in Eur Mn		2010 (€)	2011 (€)	2012 (€)	2013 (€)	2014 (€)	2015 (€)
Land (net)	General government	46,212	47,424	45,206	42,799	42,750	44,489
	Share of the total economy	13.0%	13.0%	13.2%	13.1%	12.7%	12.4%

Source: KPMG calculations on Eurostat data [downloaded in July 2017].

(1) The share of the economy refers to the estimated value of natural resources (rather than the volume of the natural resources).

Appendix I Greece

Table A List of airports, Greece, 2015 (Number of airports: 39)

List of airports	
Non-financial (Pillar 2) ^(a)	
ALEXANDROUPOLIS/DIMOKRITOS airport	KOS/IPPOKRATIS airport
ALMIROS/NEA ANCHIALOS airport	KOZANI/FILIPPOS airport
ARAXOS airport	LEROS airport
ASTYPALAIA airport	LIMNOS/IFAISTOS airport
ATHINAI/ELEFTHERIOS VENIZELOS airport	MIKONOS airport
CHANIA/IOANNIS DASKALOGIANNIS airport	MILOS airport
CHIOS/OMIROS airport	MITILINI/ODYSSEAS ELYTIS airport
IKARIA/IKAROS airport	NAXOS airport
IOANNINA/KING PYRROS airport	PAROS airport
IRAKLION/NIKOS KAZANTZAKIS airport	PREVEZA/AKTION airport
KALAMATA airport	RODOS/DIAGORAS airport
KALYMNOS airport	SAMOS/ARISTARCHOS OF SAMOS airport
KARPATHOS airport	SANTORINI airport
KASSOS airport	SITIA/VITSENTZOS KORONAROS airport
KASTELORIZO airport	SKIATHOS/ALEXANDROS PAPADIAMANDIS airport
KASTORIA/ARISTOTELIS airport	SKIROS airport
KAVALA/MEGAS ALEXANDROS airport	SYROS/DIMITRIOS VIKELAS airport
KEFALLINIA/ANNA POLLATOU airport	THESSALONIKI/MAKEDONIA airport
KERKIRA/IOANNIS KAPODISTRIAS airport	ZAKINTHOS/DIONISIOS SOLOMOS airport
KITHIRA/ALEXANDROS ARISTOTELOUS ONASSIS airport	

Source: Eurostat database, 2015 [downloaded in May 2017].

(1) The list above includes the airports defined by Eurostat as "main airports", which meet the following criteria: at least 150 000 passenger movements per year.

(a) Within the scope of this Pillar.

Table B List of ports, Greece, 2015 (Number of ports: 177)

List of ports	
Non-financial (Pillar 2) ^(a)	
Achladi	Faneromeni Salaminas
Adamas Milou	Fiskardo Kefallinias
Agia Marina Attikis	Folegandros Kyklades
Agia Marina Fthiotidas	Fournoi Samou
Agia Pelagia	Galatas Troizinias
Agia Roumeli Chanion	Gavdos Chanion
Agioi Theodoroi	Gavrio
Agioi Theodoroi	Gavrio
Agiokampos Larisas	Glossa Skopelou
Agios Efstratios Lesvos	Glyfa Fthiotidas
Agios Kirykos	Greece - other ports
Agios Konstantinos	Gytheio
Agkistri Aiginas	Ierapetra Lasithiou
Aidipsos	Igoumenitsa
Aigiali Amorgou	Ios
Aigina	Irakleia, Kyklades
Aigio	Irakleio
Alexandroupolis	Isthmia
Aliverio	Itea
Alonnisos	Ithaki
Amaliapolis Magnisias	Kalamata
Amfilochia	Kalathos Rodou
Ammouliani	Kaloi Limenes Rethymnou
Amorgos (Katapola)	Kalymnos
Anafi, Kyklades	Karlovasi
Andros	Karpathos
Antikyra	Kasos
Antiparos	Kasteli Kissamou
Antirrio	Kavala
Araxos	Kea
Argostoli	Keramoti
Arkitsa Fthiotidas	Keratsini
Aspropyrgos	Kerkyra
Astakos	Kiato
Astros Arkadias	Kimolos
Astypalaia	Korinthos
Chalki Dodekanisou	Kos
Chalkida	Kosta Ermionidas
Chios	Koufonisi, Kyklades
Chora Sfakion	Kylini
Dafni Agiou Orous	Kymasi
Diafani Karpathou	Kymi
Diakofti Kythiron	Kythnos
Domvraina Voiotias	Lakki Lerou
Donousa, Kyklades	Larymna
Drepano Riou	Lavrio
Elafonisos Lakonias	Lefkimmi
Elefsina	Leipsoi Dodekanisou
Eleftheres	Linaria Skyrou
Eretria Evvoias	Linoperamata Irakleiou
Ermioni	Lixouri
Evdilos	Loutro Chanion

Source: Eurostat database, 2015 [downloaded in March 2017].

(1) The list above includes those ports defined by Eurostat as "reporting ports", for which statistics of inward and outward maritime transport flows are compiled.

(a) Within the scope of this Pillar

[Continue]

List of ports	
Non-financial (Pillar 2) ^(a)	
Marmari	Preveza
Meganisi	Prinos Thasou
Megara	Psachna
Megisti Kastelorizou	Rafina
Messolongi	Rethymno
Mesta Chiou	Rio
Molyvos Lesvou	Rodos
Moudros Limnou	Sami
Mykonos	Samothraki
Myrina	Schoinari Zakynthou
Mytilini	Schoinousa, Kyklades
Nafplio	Serifos
Naxos	Sifnos
Nea Moudania Chalkidikis	Sikinos, Kyklades
Nea Styra	Siteia
Neapoli Lakonias	Skiathos
Nissyros	Skopelos
Nydri	Souda Bay
Oinousses	Spetses
Oropos	Stavros Chalkidikis
Ouranoupoli Chalkidikis	Stratonio
Palaia Psara Chiou	Stylida
Paloukia Salaminas	Symi
Paros	Syros
Patmos	Thasos
Patra	Thessaloniki
Paxoi	Thira
Peiraias	Thirasia
Perama	Tilos Dodekanisou
Perama Geras Mytilinis	Tinos
Pessada Kefallinias	Trypiti Chalkidikis
Petra Lesvou	Vasiliki Lefkadas
Pisaetos Ithakis	Vathy Samou
PlatygiAli Aitolokarmanias	Volos
Politika	Voreios Evvoikos
Poros Kefallinias	Ydra
Poros Troizinias	Zakynthos
Porto Lagos	

Source: Eurostat database, 2015 [downloaded in March 2017].

(1) The list above includes those ports defined by Eurostat as "reporting ports", for which statistics of inward and outward maritime transport flows are compiled.

(a) Within the scope of this Pillar

Table C Overview of the valuation approaches and the sources used to value Non-Financial assets in this Study, Greece

Clusters of Non-financial assets	Valuation approach	Sources
Dwellings	Market value	- Eurostat
Buildings other than dwellings	Market value	- Eurostat
Ports	Market value	- Eurostat - Mergermarket
Roads	Perpetual Inventory Method (PIM)	- DG MOVE - Eurostat - EIB - Other sources
Airports	Market value	- Eurostat
Railways	Equity method (Pillar 1)	- Bureau van Dijk (BvD) Orbis
Mineral and Energy reserves	Market value	- World Factbook Database
Other natural resources	Market value	- Eurostat

Sources: KPMG elaborations

(1) For more details on "other sources" used to carry out road valuations, please see Table 3, Table 4, and Table 5 in Annex.

(a) n.a. = not available as it was not reported by Eurostat or by any other relevant sources.