Study on State asset management in the EU

Final study report for Pillar 2 – Germany

Contract: ECFIN/187/2016/740792

Written by KPMG and Bocconi University
February 2018

Università Bocconi
BAFFI CAREFIN CENTER
SIL Sovereign Investment Lab

EUROPEAN COMMISSION

Directorate-General for Economic and Financial Affairs
Directorate Fiscal policy and policy mix and Directorate Investment, growth and structural reforms

European Commission
B-1049 Brussels

Germany

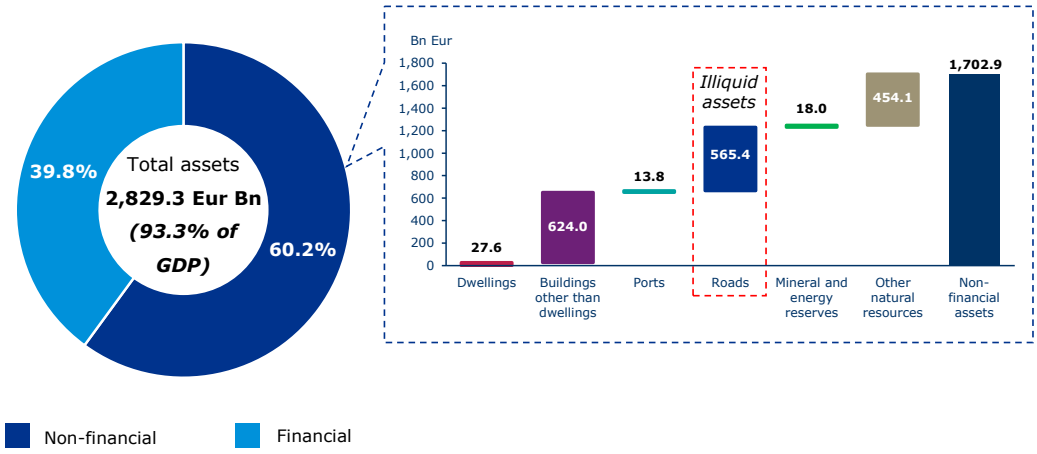
This Country fiche presents a quantitative overview of the mix of non-financial assets owned by the German General government.

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 German 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 German General government was equal to 1,703 Eur Bn, accounting for about 60.2% of the estimated value of all assets (including financial assets) owned by the General government[1].

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



Source: *KPMG elaboration. Data on Gross Domestic Product were directly retrivied 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 themselves[2].

(3) In this chart, the value of railways is not represented as it has already been accounted for in Pillar 1.

(4) Values of Dwellings, and Other natural resources 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.

(5) 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.

(6) The 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.

2. DWELLINGS

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

[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.

As shown in Table 1 below, the value of the German General government's dwellings in 2015 was equal to about 28 Eur Bn, accounting for 0.6% of the value of all the dwellings within the country.

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

Data in Eur Mn	2010	2011	2012	2013	2014	2015
General government	25,122	25,875	26,447	26,920	27,394	27,637
Share of the total economy	**0.6%**	**0.6%**	**0.6%**	**0.6%**	**0.6%**	**0.6%**

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 dwellings in the economy refers to the value of dwellings (rather than the number of dwellings).

3. OTHER BUILDINGS AND STRUCTURES

- *Buildings other than dwellings*

Eurostat and other sources do not provide the value of Buildings other dwellings for Germany, as Germany was granted a derogation to start transmitting relevant data in 2020.

The value of non-residential buildings has been estimated through a market approach, as outlined in Methodological Notes. As Table 2 shows, the estimated value of German non-residential buildings is equal to 624 Eur Bn in 2015.

Table 2 Estimated values of General government's Buildings other than dwellings (Eur Mn), Germany, 2010-2015

Data in Eur Mn	2010 (E)	2011 (E)	2012 (E)	2013 (E)	2014 (E)	2015 (E)
General government	686,837	711,745	656,649	672,421	616,419	624,018
Share of the total economy	**29.5%**	**29.5%**	**27.9%**	**27.9%**	**26.7%**	**26.6%**

Source: KPMG calculations on ENTRANZE and Eurostat data [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).

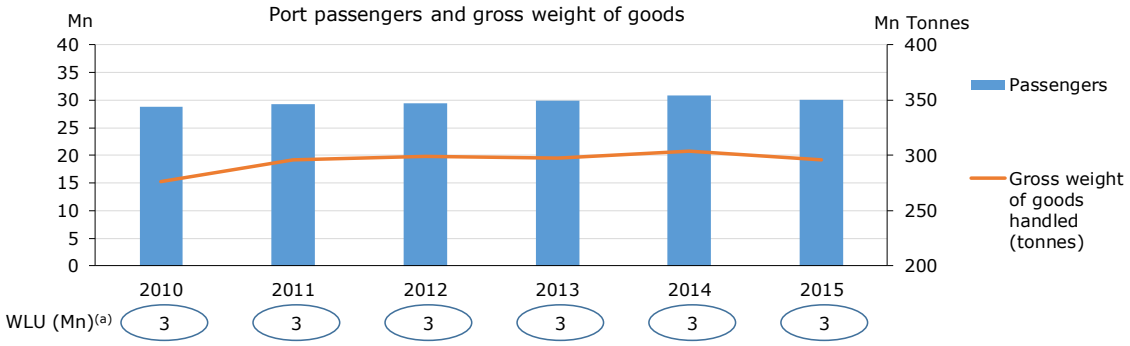
- *Ports*

In Germany, the prevalent model is the landlord model[3]: port infrastructure is owned by the municipality or the regional state (*Bundesland*) where the port is located. Several Government departments as well as local entities, when relevant, have a say in ports policies; however, the federal government is the only one responsible for setting rules and regulating access to land and sea.

Figure 2 shows maritime port traffic (for both passengers and goods) in Germany over the 2010–2015 time period[4].

[3] For a more detailed overview of the different port management structures and ownership models, please see World Bank (2016), *Port Reform Toolkit* PPIAF, 2nd Edition; available at: https://ppp.worldbank.org/public-private-partnership/library/port-reform-toolkit-ppiaf-world-bank-2nd-edition [accessed 30th march 2017].
[4] For the list of Maritime Ports included in this Study, please see Table B in the Appendix.

Figure 2 Port passengers and gross weight of goods, Germany, 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 transactions[5], 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 of German maritime ports was equal to about 13.8 Eur Bn.

Table 3 Estimated value for Maritime ports (Eur Mn), Germany, 2010-2015

Data in Mn Eur	2010	2011	2012	2013	2014	2015
Ports	12,837	13,764	13,890	13,824	14,126	13,763

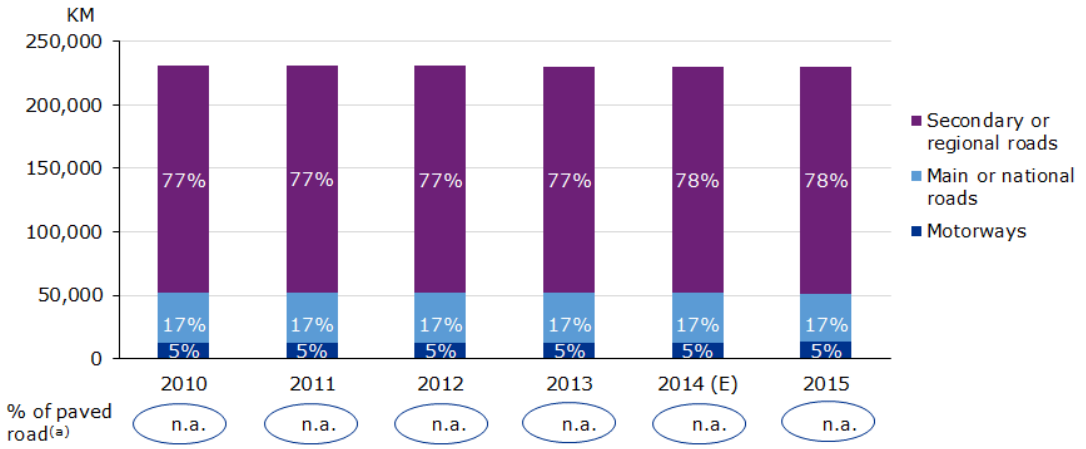
Source: *KPMG calculations based on Eurostat and the Mergermarket database, 2010-2015 [downloaded in March 2017].*

- *Roads*

Germany differentiates between federal, state, and municipal roads. Highways and most of the roads belong to the Federal Government, with the only exception being the road systems of major municipalities, which belong to the municipalities themselves.

[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.

Figure 3 Length of Motorways, Main or national roads and Secondary or regional roads, Germany, 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 German road network is equal to 230,082 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 and Main or national roads only.

In Germany, overall, in 2015 the estimated value of roads ranged between 565 Eur Bn to 619 Eur Bn.

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

Data in Eur Mn		2010	2011	2012	2013	2014	2015
Motorways	Min	90,171	96,337	102,286	107,894	112,626	116,480
	Max	101,679	107,941	113,943	119,552	124,189	127,866
Main or national roads	Min	134,268	136,471	138,200	139,325	139,278	138,224
	Max	163,406	165,853	167,718	168,846	168,556	167,053
Secondary or regional roads	Min	289,226	296,494	302,798	307,850	310,371	310,652
	Max	303,173	310,559	316,928	321,981	324,386	324,452
Total	**Min**	**513,665**	**529,303**	**543,285**	**555,068**	**562,275**	**565,357**
	Max	**568,259**	**584,353**	**598,590**	**610,379**	**617,130**	**619,372**

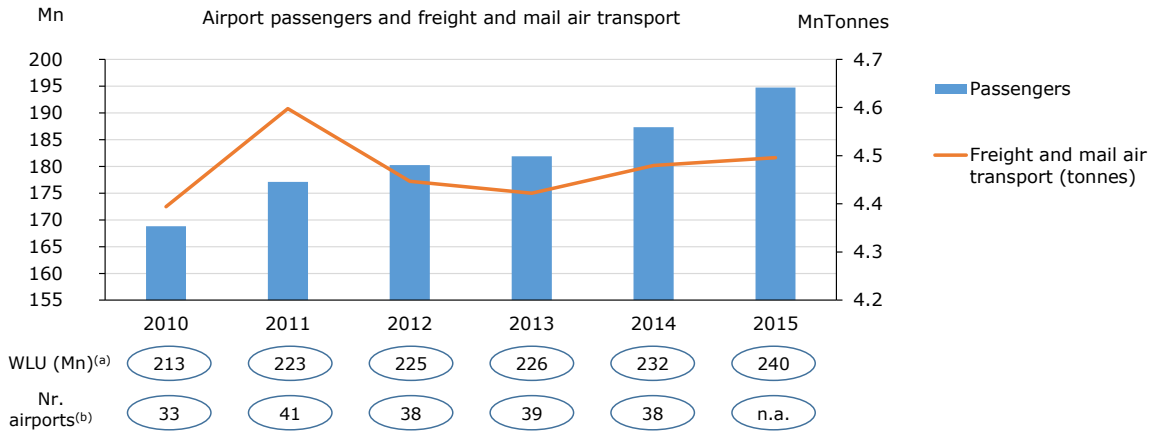
Source: KPMG calculations on Directorate-General for Mobility and Transport (DG MOVE) and Eurostat data [downloaded in July 2017].

- *Airports*

According to Article 9 of the *Luftverkhrsgesetz (LuftVG)*[6], the property of German airports has been transferred to the local authority where airports are located, which is responbile for managing the infrastructure through PSHs[7].

Airport infrastructures are granted in concession to the operators through concession agreements lasting for an indefinite period of time (e.g. *Frankfurt Airport* is managed by the PSH *Fraport AG* for an indefinite time period as reported in its annual report[8]).

Figure 4 Airports passengers and freight and mail air transport, Germany, 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_gooa&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).

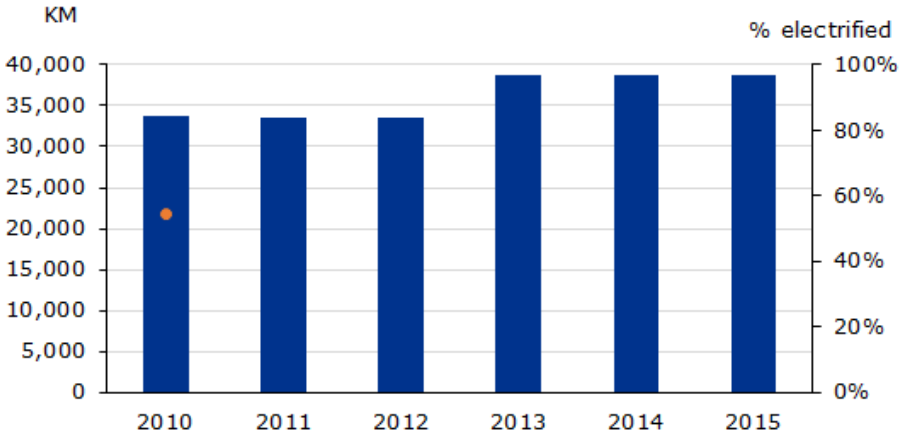
Because the management of German airports is granted in concession to airport operators for an indefinite period of time, then the airport infrastructures are to be considered, effectively, owned by PSHs themselves. Therefore, German airports cannot be classified as public Non-financial assets, and are valuated in Pillar 1 of this Study.

- *Railways*

As shown in Figure 5, the extension of the railway network in Germany was equal to about 37,800 km in 2015.

[6] *Luftverkhrsgesetz (LuftVG)*. Available at: https://www.gesetze-im-internet.de/luftvg/ [Accessed 11th May 2017].
[7] Although this data collection and analysis exercise represents the "best effort" to provide an updated picture on EU28 ownership/management models for Non-financial assets, due to data limitations, we have assumed the prevalent ownership model to be applicable for all other assets within the cluster.
[8] Fraport Group AG, Annual Report 2016. Available at: http://www.fraport.com/content/fraport/en/investor-relations/events-und-publications/publications/annual-reports.html [Accessed 11th May 2017].

Figure 5 Length of railway lines (in Km), Germany, 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.

(2) Eurostat does not report the value of electrified network for the years after 2011, because data transmission from Member Countries to Eurostat for this type of assets is still on a voluntary basis. In addition, no other official national sources provide us with this data.

The German railway network is owned and managed by a PSH, *Deutschen Bahn (DB) Netze AG*[9], which is a fully owned subsidiary of *DB AG*. Therefore, its value is assessed by applying the Equity method, and it is in the scope of Pillar 1 of this Study (i.e. Financial assets)[10].

4. NATURAL RESOURCES

- *Mineral and Energy reserves*

According to the *Federal Mining Act* of 1980[11] and a number of Mining Ordinances on technical and procedural issues, mineral and energy reserves in Germany are owned by the federal state, which can grant the concession of exploiting them to private companies.

Table 5 Proven reserves of mineral and energy reserves, Germany, 2015

Data	Oil (Barrels)	Natural gas (cubic meters)
Proven reserves	249,220,000	74,000,000,000

Source: Federal Institute for Geosciences and Natural reources - BGR (2016). "Energy study 2016. Reserves, Resources and Availability of Energy Resources". Available at: https://www.bgr.bund.de/EN/Themen/Energie/Downloads/energiestudie_2016_en.pdf?__blob=publicationFile&v=2 [downloaded in December 2017].

[9] KPMG for DG ECFIN (2014). *"Study to assess the financial situation of SOEs in the energy and railway sectors"*.

[10] More precisely, *DB Netz* is not directly assessed in Pillar 1. However, it is assessed indirectly through the *DB AG*, which fully owns *DB Netz*.

[11] Federal Mining Act of 13th August 1980 (Federal Law Gazette I p. 1310), last amended by Article 11 of the Act of 24 May 2016 (Federal Law Gazette I p. 1217). Available at: https://www.gesetze-im-internet.de/englisch_bbergg/englisch_bbergg.html [accessed 11th May 2017].

As shown in Table 6, the estimated value for Oil reserves in Germany in 2015 was equal, on average, to 12 Eur Bn. With regard to Natural Gas, the estimated value was instead equal to an average of about 6 Eur Bn.

Table 6 Estimated value of oil and natural gas proven reserves (Eur Mn), Germany, 2015

Data in Mn Eur	Min	Max	Average
Oil	8,116	15,233	12,047
Natural gas	4,008	7,864	5,998
Total	**12,125**	**23,097**	**18,046**

Source: KPMG calculations on Federal Institute for Geosciences and Natural reources data , 2015 [downloaded in December 2017].
(1) Proven reserves are valuated using average prices for 2015.
(2) Range is calculated using the minimum and the maximum prices for 2015.

- *Other natural resources*

For more details about limitations on data on Other natural resources and a detail of what is mapped and valuated in this country Fiche, please refer back to the relevant section of the Methodological Notes for Pillar 2.

Germany reports the value of all Other natural resources (as classified by ESA2010) in its National Accounts, as shown in Table 7.

Table 7 Other natural resources, Land (Eur Mn), Germany, 2010-2015

Data in Eur Mn		2010	2011	2012	2013	2014	2015
Land (net)	General government	368,994	383,158	390,339	417,017	433,143	454,056
	Share of the total economy	**12.4%**	**12.3%**	**12.2%**	**12.1%**	**12.0%**	**12.0%**

Source: Eurostat database, 2010-2015 [downloaded in July 2017].
(1) The share of the economy refers to the value of lands (rather than the surface area of lands).

Appendix I Germany

Table A List of airports, Germany, 2015 (Number of airports: 25)

List of airports
Financial (Pillar 1)[a]
BERLIN-SCHOENEFELD airport
BERLIN-TEGEL airport
BREMEN airport
DORTMUND airport
DRESDEN airport
DUESSELDORF airport
ERFURT-WEIMAR airport
FRANKFURT/MAIN airport
FRANKFURT-HAHN airport
FRIEDRICHSHAFEN airport
HAMBURG airport
HANNOVER airport
KARLSRUHE/BADEN-BADEN airport
KOELN/BONN airport
LEIPZIG/HALLE airport
LUEBECK-BLANKENSEE airport
MEMMINGEN airport
MUENCHEN airport
MUENSTER/OSNABRUECK airport
NIEDERRHEIN airport
NUERNBERG airport
PADERBORN/LIPPSTADT airport
SAARBRUECKEN airport
STUTTGART airport
SYLT 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) Not valuated here since they are not in the scope of Pillar 2

Table B List of ports, Germany, 2015 (Number of ports: 80)

List of ports	
Non-financial (Pillar 2)[a]	
Amrum	Kiel
Andernach	Köln
Anklam	Krefeld
Baltrum	Langeoog
Beidenfleth	Leer
Bensersiel	List/Sylt
Berlin	Lübeck
Berndshof	Lülsdorf
Borkum	Mühlheim an der Ruhr
Brake	Nessmersiel
Bremen	Neuharlingersiel
Bremerhaven	Neuss
Brunsbüttel	Neustadt/Holstein
Burgstaaken/Fehmarn	Norddeich
Büsum	Nordenham
Bützfleth	Norderney
Carolinensiel	Nordstrand
Cuxhaven	Oldenburg (Oldenburg)
Dagebüll	Orsoy
Demmin	Papenburg
Dortmund	Peine
Duisburg	Pellworm
Düsseldorf	Puttgarden
Eckernförde	Rendsburg
Emden	Rheinberg-Ossenberg
Emmelsum	Rostock
Flensburg	Salzgitter
Föhr	Sassnitz
Gelsenkirchen	Spieckeroog
Glückstadt	Spyck
Greifswald	Stade
Hamburg	Stralsund
Hanau	Ueckermünde
Heiligenhafen	Wangerooge
Helgoland	Wedel-Schulau
Hörnum/Sylt	Wesel
Husum	Wilhelmshaven
Itzehohe	Wischhafen
Juist	Wismar
Kappeln	Wolgast

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 valuate Non-Financial assets in this Study, Germany

Clusters of Non-financial assets	Valuation approach	Sources
Dwellings	Market value	- Eurostat
Buildings other than dwellings	Market value	- ENTRANZE - Eurostat
Ports	Market value	- Eurostat - Merqermarket
Roads	Perpetual Inventory Method (PIM)	- DG MOVE - Eurostat - EIB - Other sources
Airports	Equity method (Pillar 1)	- Bureau van Dijk (BvD) Orbis
Railways	Equity method (Pillar 1)	- Bureau van Dijk (BvD) Orbis
Mineral and Energy reserves	Market value	- Federal Institute for Geosciences and Natural reources
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.