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Working Paper Research

May 2022 N° 407

Economic importance of the Belgian maritime and inland ports – Report 2020

by Ilse Rubbrecht



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Abstract

In 2020, Belgian ports generated €31.8 billion in direct and indirect value added (7% of Belgian GDP) and employed 254 611 full-time equivalents (FTEs) either directly or indirectly (5.9% of Belgian domestic employment including the self-employed).

Despite the COVID-19 outbreak, direct employment at Belgian ports remained quite stable in 2020. The temporary lay-off system - more flexible during the pandemic - played a vital role in avoiding redundancies. Job losses in the port population were especially visible in the non-maritime cluster because the maritime activities were considered as essential and allowed to operate continuously.

Direct value added at Belgian ports fell by 1.2% in 2020 against a drop of 4% for the whole of the Belgian economy. The drop was particularly visible in the non-maritime cluster more precisely in those branches hit by the temporary imposed closure of businesses or impacted by demand contractions and supply-chain disruptions.

In 2020, direct investment by all Belgian ports taken together rose by 5.1% to €5.1 billion, thanks to higher sums invested in the chemicals industry and the cargo-handling sector. Analysing the investment degree levels by branch of activity, results indicate that shipping companies and port authorities invested relatively more given the competitive businesses in which they operate. A relatively high degree of investment is also notified for the energy sector and the industrial branches, whose operational activity is largely based on high technological knowledge and whose business is substantially subject to future developments.

During the pandemic, total turnover figures fell. Downscaling costs to the same extent as declining sales was difficult given the presence of fixed costs, accordingly the profitability level of a median port company declined slowly. However, while strong performing¹ port companies in terms of operating profit suffered a drop in profitability, weak performing businesses enhanced theirs owing to the generous government support measures. (In)direct support to wage and (para)fiscal payments endorsed port companies to maintain or even slightly strengthen their liquidity position, while their solvency was sustained as well.

This report is available for download at the following address <https://www.nbb.be>.

Key words: Belgian ports, microeconomic data, direct effects, indirect effects, input-output table, employment, value added, investment

JEL classification: C13, C43, C67, C81, J21, J49, L91, L92, R11, R15 and R41.

¹ All companies obtaining a positive operating result in 2018 and 2019, are defined in the analysis as strong performing port companies, the weak performing entities are those having a negative operating result in 2018 or 2019.

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Research results and conclusions expressed are those of the author and do not necessarily reflect the views of the National Bank of Belgium or any other institution to which the authors are affiliated. All remaining errors are ours.

Contents

Abstract	3
Foreword	7
Introduction	8
1 ECONOMIC IMPORTANCE OF THE BELGIAN PORTS	12
1.1 A turbulent (inter)national economic context	12
1.2 Maritime traffic fell by more than 3%	13
1.3 Competitive position was maintained	15
1.4 Demography of the Belgian ports	17
1.5 Decline in value added	20
1.6 Employment remained stable	24
1.7 Boost for investment	26
1.8 Financial ratios in the Belgian ports	30
1.8.1 Profitability	31
1.8.2 Liquidity	36
1.8.3 Solvency	38
2 ANALYSIS BY PORT	40
2.1 Port of Antwerp	40
2.1.1 Port developments	40
2.1.2 Value added	41
2.1.3 Employment	44
2.1.4 Investment	46
2.2 North Sea Port Flanders	49
2.2.1 Port developments	49
2.2.2 Value added	51
2.2.3 Employment	53
2.2.4 Investment	55
2.3 Port of Zeebrugge	57
2.3.1 Port developments	57
2.3.2 Value added	59
2.3.3 Employment	61
2.3.4 Investment	63
2.4 Port of Ostend	65
2.4.1 Port developments	65
2.4.2 Value added	66
2.4.3 Employment	68
2.4.4 Investment	70
2.5 Liège port complex	72
2.5.1 Port developments	72
2.5.2 Value added	72
2.5.3 Employment	75
2.5.4 Investment	77
2.6 Port of Brussels	79
2.6.1 Port developments	79
2.6.2 Value added	79

2.6.3 Employment.....	81
2.6.4 Investment.....	83
2.7 Outside port zone.....	85
2.7.1 Description.....	85
2.7.2 Value added.....	86
2.7.3 Employment.....	86
2.7.4 Investment.....	87
3 CONCLUSION.....	89
List of abbreviations.....	90
List of Tables.....	91
List of Tables in Annex 4.....	92
List of Figures.....	93
List of Figures in Annex 3.....	93
Bibliography.....	95
Annex 1 List of NACE-BEL branches (NACE-BEL 2008).....	97
Annex 2 Formulae.....	103
Annex 2.1 Contribution to growth.....	103
Annex 2.2 Decomposition of the globalised ratio.....	104
Annex 3 Definition of the financial ratios.....	105
Annex 4 Detailed tables by port area.....	109
Annex 4.1 Port of Antwerp.....	109
Annex 4.2 North Sea Port Flanders.....	110
Annex 4.3 Port of Zeebrugge.....	112
Annex 4.4 Port of Ostend.....	113
Annex 4.5 Liège port complex.....	115
Annex 4.6 Port of Brussels.....	116
Annex 4.7 Outside port zone.....	118
NATIONAL BANK OF BELGIUM - WORKING PAPERS SERIES.....	119

Foreword

Since 1991, the National Bank of Belgium has been monitoring the economic importance of the Belgian maritime and inland ports. The study aims to present an update until 2020, based on the full set of all available annual accounts for the accounting year 2020. Two aspects of the economic impact on the ports sector are highlighted: both direct and indirect effects. The former concern business activities resulting from the presence of maritime and non-maritime enterprises and public services in or near the ports, while the latter relate to the value added and employment generated by suppliers and subcontractors serving these enterprises and based in Belgium.

The statistical data covers the 2015-2020 period. Data-gathering via annual accounts was completed at the end of February 2022. This study does not take into account any annual accounts information published after this date. Unless otherwise stated, the methodology remains unchanged: the criteria for selecting firms and the analysis itself are the same as in previous editions. The NACE-BEL 2008 code is used to select and classify companies by branch of activity.

The introduction comments briefly on the methodology. The first chapter describes the economic importance of Belgian ports as a unit in terms of cargo traffic, competitiveness, demography, value added, employment, investment and financial ratios. The second chapter is split into seven sections, the first six are devoted to each of the ports with particular attention paid to the change between 2019-2020, the last focusses on the outside port zone.

Introduction

General description of the methodology

This study analyses the evolving economic importance of Belgium's ports, presenting an update until 2020 based on a complete set of all available annual accounts for the accounting year 2020. The port population covers only firms belonging to branches of activity which have an economic link with ports. That link is defined in relation to a dual criterion: functional and geographical. The functional dimension refers to the nature of activity and the geographical dimension refers to the boundary² defined for each port. As such, two clusters are defined. The **maritime cluster**³ contains the branches of activities specific to the ports themselves and those whose existence is essential for them. There is a clear economic link between these maritime activities and the port in question. The **non-maritime cluster**⁴ contains segments that only have an economic link with port activity due to their geographical proximity and frequent use of port infrastructure. Details on the composition of the port population are given in the methodology part in Annex 1 by Lagneaux F. (2006).

In a first step, the paper looks at the actual activity of the companies considered in the port population, which implies calculation of the **direct effects** for three main economic variables: value added, employment and investment. More details on the definition of these variables are specified in [box 1](#). The microeconomic data used to calculate direct effects are mainly based on data from the annual accounts filed with the Central Balance Sheet Office. The latest annual accounts for the year 2020 included in this study were submitted to the CBSO at the end of February 2022⁵. Figures for public entities or administrations, for which no accounts are available at the Central Balance Sheet Office, were obtained via surveys.

In a second step, **indirect effects** are measured for value added and employment. They are calculated on a top-down basis, meaning that the estimated indirect effects are not confined to the immediate suppliers (level 1), but include the indirect effects observed over the whole upstream chain, to infinity. All these levels are aggregated in the total of the indirect effects, for value added and employment, for each year. The estimate of indirect effects of all port activities on the Belgian economy is based on three types of data, coming from the National Accounts Institute⁶ (NAI), namely:

- the share of the port population considered in each SUT⁷ branch at national level,
- the national levels for value added and employment per SUT branch,
- the links between branches deduced from supply and use tables (SUT 2015, 2016, 2017, 2018) and/or indicated by the input output tables (IOT) for 2010 and 2015.

In December 2021, a new SUT table for 2018 was published.

² The port areas were established by Royal Decree of 2 February 1993, defined in the Appendix to this Royal Decree, published on 4 March 1993 in the *Belgisch Staatsblad/Moniteur belge*. Our population file, originally based on this information, has been adapted according to the development of new port sites afterwards.

³ Maritime branches of activity are shipping companies, shipping agents and forwarders, cargo handling, storage, shipbuilding and repair, port construction, dredging, fishing, maritime and pilotage services, locks, etc.

⁴ The non-maritime cluster contains four segments: trade, industry, land transport and other logistic services.

⁵ Belgian companies have to submit their annual accounts to the Central Balance Sheet Office no later than seven months after the end of the financial year. On that date, there are some companies – mainly the smallest ones or those in difficulty – which have not yet met that obligation. At the end of February 2021, the number was very small and the impact of missing data was immaterial as statistical techniques have been used to estimate the missing figures as accurately as possible.

⁶ The National Accounts Institute in Belgium consists of three institutions: FPS Economy, SMEs, Self-employed and Energy (Directorate General Statistics), National Bank of Belgium (Statistics Department, National and Regional Accounts Service) and Federal Planning Bureau.

⁷ SUT stands for supply and use tables. These tables are published by the National Accounts Institute. These are matrices that record how supplies of different kinds of goods and services originate from domestic industries and imports and how those supplies are allocated between various intermediate or final uses including exports.

Since the data series needed to calculate indirect effects come from NAI, those estimated effects consider foreign companies, self-employed operators and public entities and authorities as well. Moreover, indirect effects are assessed for each port separately, assuming that national technical coefficients are also valid at regional level. So, computed indirect effect figures need to be interpreted with caution. They only give an indication of the importance of the ports concerned compared to the national or local economy and they illustrate changes over time. The reader should not pay too much attention to the absolute value itself.

Since ports have some economic link between them, a portion of the indirect effect calculated by port is cancelled out when calculated at a more aggregate level, for example, for all Belgian ports taken together. The sum of (in)direct effects by port is thus larger than the total (in)direct effects calculated for all Belgian ports as a whole⁸.

Maritime enterprises, based outside port zones, will be presented separately

While companies in the maritime cluster have a direct operational link with port activity, they are not necessarily situated in the port zone. Firms active in the maritime branches of fishing and fisheries industry, cargo handling, port authority, shipping companies and shipbuilding and repair are considered in the port population, regardless of the address of their location in Belgium since their activity is sufficiently precise to link them to port activity. Some entities can be associated with one of the Belgian ports, others cannot and are therefore classified as “outside port zones”. Until the last publication, the economic variable values related to these maritime businesses located in outside port zones, were allocated to the four Flemish seaports since these branches are directly connected with the activity of seaports. The breakdown method applied, was based on the share of the specific economic variable per branch per seaport.

From now on, the different economic variables for this group of entities will be published separately, as “outside port zones” and will no longer be assigned and allocated to the seaports. The total amounts of value added, employment and investments for the four Flemish maritime ports will accordingly be lower than the figures published in last year’s Working Paper (Rubbrecht I, Dhyne E, Duprez C, 2021). The new method will be applied for all years (2015-2020).

Minor revisions in published data

Some of the figures for the years from 2015 to 2019 may differ slightly from those noted in the last study. The availability of annual account figures (missing last year), more accurate data for specific companies, new information which we obtained and extrapolated to the past to ensure consistent time series, changing NACE codes (not correctly captured in the last publication), are various reasons why revisions in the published data may occur. Additionally, annual accounts of newly-established enterprises can only be recorded after a certain time lag. The most important changes that have an impact on the direct effects, are the following:

⁸ A very simplified example to illustrate: Container cargo arriving at the port of Antwerp which need to be further transshipped to the port of Brussels, impact direct value added (X) in Antwerp due to the effect of more cargo handling taking place in Antwerp itself, while indirect value added created by the activity in the port of Antwerp will rise as well (Y) as result of cargo handling which will occur in Brussels after the cargo is further shipped by inland waterways from Antwerp to Brussels. The moment those cargo flows via inland waterways arrive at Brussels, a direct impact (Z) will be measured in Brussels as well. Considering the cumulated impact of (in)direct value added in the port of Antwerp and Brussels together, the calculated effect will be lower than the sum of X, Y and Z together in order to prevent for double counting. The value added generated by cargo handling in Brussels may no longer be counted as an indirect effect produced by port of Antwerp.

- since the value added generated, employed workers and the implemented investments in the outside port zone, are no longer allocated to the different Flemish seaports, the levels for the four Flemish ports are much lower in this publication than last year's.
- the port population has been enlarged by adding some extra port companies, which had previously not been covered.
 - In Ostend, for example, GE Renewable Belgium has been added. This company focuses on manufacturing and deployment of onshore and offshore wind turbines. Although its head office is located in Mechelen, one of its branches is situated in the port zone of Ostend. As such, part of the group will be considered in the port population for the whole period (2015-2020), resulting in a substantial increase in the investment figures for the metalworking industry in 2018, a year in which the company invested heavily in “assets under construction”, linked to the offshore of the Haliade 150 (component of the Belwind wind farm).
 - In Liège, Smartvalue and Newpharma joined the port population as well, as they appear to have a logistics warehouse, located in port de Wandre in Liège, resulting in higher employment and value added level in the trade and shipping agents branches for the years 2015-2019.
 - Dassay Europe – active in the wholesale trade of workwear – owns a logistics warehouse at the port of Zeebrugge and is likewise added to the port population.
- For multi-district companies, the breakdown key values for the accounting year 2019 were updated in line with more accurate information from the National Accounts Institute.

Estimates of the indirect effects differ slightly from those in the previous publication, as a new SUT for 2018 was used.

This study, split into two parts, relies on annual account figures up to 2020. The first chapter focuses on the economic importance of Belgian ports as a unit, described in terms of cargo traffic, competitiveness, value added, employment, investment and financial ratios. The second chapter is split into seven sections, the first six sections are sequentially devoted to one of the ports, the last section describes the outside port zone. Each port section starts by outlining the most recent and crucial port developments (until 2021) to get a picture of the type of port involved, subsequently the three economic variables (value added, employment and investment) are provided for the period 2015-2020. Comments however are based on the main developments recorded in the 2019-2020 period.

Definition of the economic variables: value added, employment and investment

Value added⁹ at current prices

is the value a firm adds to its inputs during the financial year via the production process. The value added of a firm indicates its contribution to the wealth of the country or region (in percentages of GDP). Since value added is linked to unbiased market transactions, operating subsidies (code 740¹⁰ in annual accounts) will be deducted. In accounting terms, value added is calculated as the sum of staff costs (code 62), depreciation and value adjustments (code 630 and 631/4), provisions for liabilities and charges (code 635/7), other operating expenses (code 640/8) and the recurrent operating profit or loss (code 9901 plus code 66A¹¹ minus code 76A¹²), less operating costs capitalised as restructuring expenses (code 649).

Employment in full-time equivalents (FTEs)

is the average workforce (code 9087) over the financial year. Direct employment only covers employees on the payroll of the businesses and few public services concerned.

Investment at current prices¹³:

corresponds to the acquisition of tangible fixed assets during the year under consideration, including capitalised production costs¹⁴. In atypical cases like mergers and acquisitions, adjusted figures are used, in accordance with the national accounts method, based on VAT code 83. The investment figures cover both private and public investment. Public investment includes figures compiled by the Brussels, Flemish and Walloon authorities. Public investment figures comprise only new investment. Costs linked to an Ordinance¹⁵ are not considered, nor are the costs related to harbour masters' services, nor expenditure on maintaining maritime access.

⁹ In this report value added is calculated based on the cost approach, which differs from the production approach applied by NAI, measuring value added as production minus intermediate consumption. For more details:

https://www.nbb.be/doc/dq/e_method/gni_methodological_inventory_belgium_version_2022_publication.pdf

¹⁰ Code 740 concerns only non-product related subsidies (Eurostat, 2013), used to support employment or cover annual deficits.

¹¹ 66A are non-recurrent operating expenses.

¹² 76A are non-recurrent operating revenues.

¹³ Unless otherwise stated, investment is always indicated at current prices, in gross. Developments at constant prices (by volume) are explicitly mentioned. Investment at constant prices is calculated by means of the deflator of gross fixed capital formation.

¹⁴ Decommissioning of assets is not taken into account.

¹⁵ These are the charges linked to lock operations.

1 ECONOMIC IMPORTANCE OF THE BELGIAN PORTS

1.1 A turbulent (inter)national economic context

As Cariou (2020) stated: “Shipping remains a derived demand and future maritime demand will still continue to largely depend on the future changes in the world economy, the world population and GDP”, this paper starts with a brief overview on the national and international economic context in which Belgian ports had to operate.

In 2020, almost all governments around the world took unprecedented health and safety measures to slow down the spread of the COVID-19 virus. Only one lockdown in most major economies proved insufficient. Relapses led to the reintroduction of restrictive measures. Therefore, all major countries with the exception of China went into a recession. The distinction in the magnitude of negative growth in the countries could be explained by the difference in the intensity of the pandemic, by the structural features of each economy and how strong each policy response was. Additionally, many countries were already struggling with weak growth in 2019 due to uncertainty triggered by trade disputes between the United States and China, geopolitical tensions in the Middle East and persistent uncertainty over Brexit (NBB, 2021).

In 2021, the world economy recovered but there were great differences between countries. Several explanations were given: unequal access to vaccines, new outbreaks of the more infectious Delta variant of the coronavirus, institutional differences and the level of support by governments. As economies re-opened, a fever of buying power for sustainable consumer goods arose in advanced countries in particular, leading to a mismatch between supply and demand with price increases and longer delivery times (NBB, 2022).

TABLE 1 GDP OF THE MAIN ECONOMIES AND OF BELGIUM
(percentage changes in volume compared to previous year)

	2019	2020	2021
Advanced economies	1.7	-4.5	5.0
of which United States	2.3	-3.4	5.6
Japan	0.0	-4.5	1.6
Euro area	1.6	-6.4	5.4
of which Belgium	2.1	-5.7	6.2
United Kingdom	1.4	-9.4	7.2
Emerging economies	3.5	-2.2	6.8
of which China	6.0	2.3	8.1
India	4.0	-7.3	9.0
Russia	2.0	-2.7	4.5
Brazil	1.4	-3.9	4.7
World	2.8	-3.1	5.9
p.m. World trade	0.9	-8.2	9.3

Source: NBB Annual Report (February 2022) and National Accounts Institute (April 2022).

In 2020, real GDP in Belgium fell by -5.7%. The COVID-19 pandemic caused an unprecedented fall in the Belgian domestic demand. Other than government consumption, all the components of domestic demand took a really bad hit. In 2021, Belgium's growth revival (+6.2%) was stronger than expected and even larger than in the neighbouring countries. All domestic components of demand (excluding stocks) increased considerably. The contribution of net exports to GDP growth was positive as well, due to a slightly stronger rise in exports than imports.

1.2 Maritime traffic fell by more than 3%

In 2020, maritime transshipments fell by 3.4% in all Belgian ports as a whole. The negative change was visible in each port except for Zeebrugge. The drop in cargo traffic was mainly attributable to the ports of Antwerp (contribution of -2.1 p.p.) and Ghent (contribution of -1 p.p. to overall change). From early 2020, the spread of the COVID-19 virus brought huge economic disruptions, and maritime goods transport was no exception. **The trend in 2021 was positive (+4.5%):** maritime transshipments rose in all Belgian ports except for Ostend. The revival of growth was still influenced by the pandemic and also by the March 2021 closure of the Suez Canal, when it was blocked by the container ship Ever Given, severely disrupting logistic chains and in turn reducing the handling capacity of container ships.

“The pandemic has brought to the fore the importance of maritime transport as an essential sector for the continued delivery of critical supplies and global trade in time of crisis, during the recovery stage and when resuming normality” (Review of Maritime Transport 2020).

The focus in this report is on the change between 2019-2020.

The decline in total maritime transshipments in and out of the **port of Antwerp** was limited in 2020, thanks to strong container traffic, once again recording stronger volumes despite the pandemic. Increasing global protectionism and the associated trade problems weighed negatively on conventional cargo flows. Steel, the major commodity in this segment, felt the impact especially. The automotive sector also suffered from the coronavirus crisis, causing roll-on roll-off traffic to decline. The growing supply of green energy and reduced demand for coal and ores from the steel industry explained the decline in dry bulk transshipments, while liquid bulk fell due to lower refining activities.

TABLE 2 CARGO TRAFFIC IN THE BELGIAN PORTS
(in millions of tonnes)

Ports	2015	2016	2017	2018	2019	2020	2021	Contribution to growth (p.p.) ¹ 2019-2020	Contribution to growth (p.p.) ¹ 2020-2021
Antwerp	208.4	214.1	223.7	235.3	238.2	231.0	239.8	-2.1	2.7
North Sea Port Flanders	26.4	29.1	32.5	32.6	32.5	29.1	31.5	-1.0	0.7
Zeebrugge	38.3	37.8	37.1	40.1	45.8	47.0	49.2	0.4	0.7
Ostend	1.3	1.5	1.4	1.5	1.6	1.5	1.4	0.0	0.0
Flemish ports	274.4	282.5	294.7	309.5	318.0	308.6	321.8	-2.8	4.0
Liège	14.6	15.5	15.9	16.0	15.9	14.0	14.9	-0.6	0.3
Brussels	4.4	4.5	4.8	5.2	5.2	4.9	5.5	-0.1	0.2
Inland ports	19.0	19.9	20.8	21.2	21.1	18.9	20.4	-0.6	0.4
Total	293.4	302.4	315.4	330.7	339.2	327.5	342.2	-3.4 ²	4.5 ²

Source: Port authorities.

¹ For a definition of contribution to growth in percentage points, see [Annex 2.1](#).

² Percentage change compared to the previous year.

In **North Sea Port Flanders**, the lower maritime traffic volumes in 2020 resulted from the COVID-19 pandemic, uncertainties about Brexit and the oil crisis. 2020 was a difficult year for the liquid petroleum industry, which partly explained the drop in liquid bulk. The fall in dry bulk was down to lower inputs of coal and iron ores for steel producers, while reduced traffic in conventional cargo was caused by lower imports of slabs linked to an economy that was temporarily shut down.

The lower volumes of freight shipped through **the Liège port complex and port of Brussels** reflected the economic impact of the pandemic as well.

In Liège, the volume of maritime traffic of most commodity types went down as many sectors were hard hit in 2020 by successive lockdowns and the resulting reduction in activity. Container volumes and the transshipment of secondary raw materials and waste transports were nevertheless up.

In the port of Brussels, the decline in maritime traffic was minimal, considering that the lockdown in the first quarter of 2020 had led to a sharp slowdown in port activity and, in the past, only the year 2018 and 2019 had exceeded 5 million tonnes of goods transported. The suspension of work on construction sites and the reduced number of moves during the spring lockdown explained the fall in transshipped building materials and petroleum products.

In 2020, only the **port of Zeebrugge** handled a higher volume than in 2019. The growing traffic in containers, liquid and dry bulk offset the decline in roll-on roll-off, mainly owing to the drop in car traffic because of the COVID-19 crisis. The increasing container traffic was visible in deep-sea, short-sea and estuary shipping. Liquid bulk rose due to an expansion in LNG. Dry bulk increased owing to infrastructure works in the port and due to the volume of animal feed that more than doubled.

TABLE 3 MARITIME TRAFFIC IN THE FLEMISH PORTS IN 2019-2020
(in millions of tonnes, unless otherwise stated)

	Antwerp	North Sea Port Flanders	Zeebrugge	Ostend	Total	Share (%)
2019						
Containers	138.7	0.3	16.2	0.0	155.3	48.8
Roll-on roll-off ¹	5.1	2.1	16.5	0.0	23.8	7.5
Conventional cargo ²	8.3	3.6	0.9	0.1	12.9	4.1
Liquid bulk	72.1	6.2	10.8	0.0	89.1	28.0
Dry bulk	13.9	20.2	1.3	1.5	37.0	11.6
TOTAL 2019	238.2	32.5	45.8	1.6	318.0	100.0
2020						
Containers	139.1	0.4	17.9	0.0	157.4	51.0
Roll-on roll-off ¹	4.6	2.0	14.2	0.0	20.8	6.7
Conventional cargo ²	6.6	3.1	0.6	0.2	10.5	3.4
Liquid bulk	69.0	4.5	12.6	0.0	86.2	27.9
Dry bulk	11.6	19.1	1.7	1.3	33.7	10.9
TOTAL 2020	231.0	29.1	47.0	1.5	308.6	100.0
Contribution to the growth (p.p.)³						
Containers	0.1%	0.0%	0.5%	0.0%	0.6%	
Roll-on roll-off ¹	-0.2%	-0.1%	-0.7%	0.0%	-0.9%	
Conventional cargo ²	-0.5%	-0.2%	-0.1%	0.0%	-0.7%	
Liquid bulk	-0.9%	-0.5%	0.6%	0.0%	-0.9%	
Dry bulk	-0.7%	-0.3%	0.1%	-0.1%	-1.0%	
TOTAL⁴	-2.3%	-1.1%	0.4%	0.0%	-3.0%	

Source: Port authorities.

¹ Roll-on roll-off, abbreviated as RoRo, refers to the horizontal handling of goods using wheeled equipment inside and outside the ship, in contrast to 'lift-on lift-off' which illustrates the vertical handling. RoRo data in the report do not take into account containerised cargo, because this is included in the line entitled "containers".

² Conventional cargo is non-containerised general cargo, mainly iron and steel, fruit, paper, wood and machinery.

³ For a definition of contribution to growth in percentage points, see [Annex 2.1](#).

⁴ Percentage change compared to the previous year.

In 2020, all maritime traffic types in the Flemish seaports ([Table 3](#)) declined except containerised trade that bucked the trend. The declining roll-on roll-off traffic was mainly down to the drop in car traffic because of the COVID-19 crisis. Lockdowns, travel restrictions and production cuts compressed demand for fuel as well. That is why the shipments of crude oil, refined petroleum products and gas fell sharply as did the transshipment of liquid bulk by Flemish ports. In the first half of 2020, the demand shock from the

pandemic added downward pressure on demand for coal and ores from the steel sector, explaining the drop in *dry bulk transshipment*.

1.3 Competitive position was maintained

As a result of the pandemic, maritime traffic declined in Belgian seaports. Still, they preserved their share in the Hamburg-Le Havre range, as did the Belgian inland ports compared to the largest and second largest European inland ports.

The share of the four Flemish maritime ports in the Hamburg – Le Havre range ([Table 4](#)) grew from 23% in 2015 to 26.6% in 2020. The Flemish seaports, grouped in a 100 km radius, play a major role in the import and export of goods at international and intra-European level. To analyse the competitive position of those Belgian maritime ports, a comparison is made with the Hamburg–Le Havre port range as these are competing European maritime ports serving the same hinterland. Together, they cover, from North to South, Hamburg and Bremen in Germany, Amsterdam and Rotterdam in the Netherlands, Antwerp, North Sea Port Flanders and Zeebrugge in Belgium, Dunkirk and Le Havre in France. In this analysis, the port of Ostend is also included in the Hamburg-Le Havre range. As the port of Ghent and the Dutch Zeeland Seaports Vlissingen and Terneuzen merged into North Sea Port, the Dutch part is added as well.

In [Table 5](#), **cargo traffic in and out of the Belgian inland ports** (Brussels and Liège) **is compared to that for the leading European inland ports** (Duisburg and Paris), which are also located in the large Rhine-Scheldt-Meuse basin. In 2020, all four recorded a reduction in their inland waterway transport, as a result of the pandemic.

TABLE 4 TOTAL MARITIME TRAFFIC IN THE HAMBURG - LE HAVRE RANGE
(INCLUDING OSTEND AND ZEELAND SEAPORTS)
(in millions of tonnes, unless otherwise stated)

Ports	2015	2016	2017	2018	2019	2020	Change 2015-20 (%)	Change 2019-20 (%)	Share 2015-20 (%)	Share 2020 (%)
Amsterdam ¹	94.9	95.1	100.8	101.8	105.1	91.8	-0.7	-12.6	8.1	7.9
Rotterdam	466.4	461.2	467.4	469.0	469.4	436.8	-1.3	-6.9	38.0	37.6
Bremen and Bremerhaven	73.4	75.2	74.2	74.4	69.4	66.5	-2.0	-4.2	5.9	5.7
Hamburg	137.8	138.2	136.5	135.1	136.6	126.3	-1.7	-7.6	11.1	10.9
Dunkirk	46.6	46.7	50.3	51.6	52.7	45.1	-0.6	-14.3	4.0	3.9
Le Havre	68.3	66.0	72.7	71.7	65.8	52.4	-5.2	-20.4	5.4	4.5
North Sea Port			66.6	70.4	71.4	63.5		-11.1	3.7	5.5
of which North Sea Port Netherlands	33.1	33.2	34.2	37.8	38.9	34.4	0.8	-11.6	2.9	3.0
of which North Sea Port Flanders	26.4	29.1	32.5	32.6	32.5	29.1	2.0	-10.4	2.5	2.5
Antwerp	208.4	214.1	223.7	235.3	238.2	231.0	2.1	-3.0	18.5	19.9
Ostend	1.3	1.5	1.4	1.5	1.6	1.5	2.9	-6.2	0.1	0.1
Zeebrugge	38.3	37.8	37.1	40.1	45.8	47.0	4.2	2.7	3.4	4.0
Total Flemish ports	274.4	282.5	294.7	309.5	318.0	308.6	2.4	-3.0	24.5	26.6
Total 10 ports	1 195	1 198	1 231	1 251	1 256	1 162	-0.6	-7.5	100.0	100.0
Total world traffic	10 023	10 295	10 716	11 019	11 076	10 648	1.2	-3.8		
Share 10 ports / Total world traffic (%)	11.9	11.6	11.5	11.4	11.3	10.9				
Share Flemish ports / 10 ports (%)	23.0	23.6	23.9	24.7	25.3	26.6				
Share Flemish ports / Total world traffic (%)	2.7	2.7	2.7	2.8	2.9	2.9				

Sources: Port authorities and UNCTAD "Review of Maritime Transport 2021".

¹ It concerns the whole North Sea Canal Area.

TABLE 5 CARGO TRAFFIC BY SHIP IN THE PORTS OF DUISBURG, PARIS, LIÈGE AND BRUSSELS
(in millions of tonnes, unless otherwise stated)

Ports	2015	2016	2017	2018	2019	2020	Change 2015-20 (%)	Change 2019-20 (%)	Share 2015-20 (%)	Share 2020 (%)
Duisburg	51.9	53.1	50.2	48.1	47.6	41.1	-4.6	-13.7	53.6	49.6
Paris	20.2	20.3	21.2	22.1	25.3	22.8	2.5	-9.9	24.2	27.5
Liège	14.6	15.5	15.9	16.0	15.9	14.0	-0.9	-12.1	16.9	16.9
Brussels	4.4	4.5	4.8	5.2	5.2	4.9	2.5	-5.3	5.3	6.0

Sources: Port authorities.

1.4 Demography of the Belgian ports

In 2020, various government support policies prevented companies from going bankrupt, neither was the economic uncertainty beneficial for new companies to start up.

To obtain a demographic analysis on the Belgian port population for the period 2015-2020, data from the Crossroads Bank for enterprises (CBE) – managed by FPS Economy - is collected for each entity in the port population, excluding those active in the public sector. The population covers mainly Belgian commercial enterprises but also a limited number of non-profit organisations and branches of foreign firms are considered.

[Table 6](#) indicates the number of legal persons (regardless of the legal form of the entity) included in the study for the years 2015 and 2020 respectively. The column “*migrate-in*” refers to all entities that entered the port population during the period 2016-2020, implying all newly established companies after 2015 coming into the population (known as “*start-ups*”) and all existing companies that have started port activities, have taken over other entities within the port area or whose office has relocated into the geographical port zone. The “*migrate-out*” column lists all firms that left the port population during the years 2016-2020. Reasons can be diverse: companies who moved out of the geographical port area, changed its main activity to one that is not considered in the port population, merged with another company already established in the port – in which case only the acquiring company survives in the study –, stopped its activity or even went bankrupt. The last three cases are indicated as “*departures*”, considered a sub-set of the “*migration-out*” group.

Other logistic services seem to be the most dynamic branch

The number of legal entities shrank over the period 2015-2020, at a similar pace in both the maritime and non-maritime clusters. The biggest change is visible in the other logistic services segment, with many firms entering and leaving the port population, while the net migration figure in absolute value is the largest in trading activities (-113) and in the shipping agents and forwarders branch (-113).

Those changes in the port population are partly influenced by the methodology on how the port population is defined. A company that moves outside the geographical port area is still active, as is an entity that switches its main operational activity to one that is not considered in the port study. Those reasons for migrating out of the port population, do not imply those companies are no longer alive and healthy.

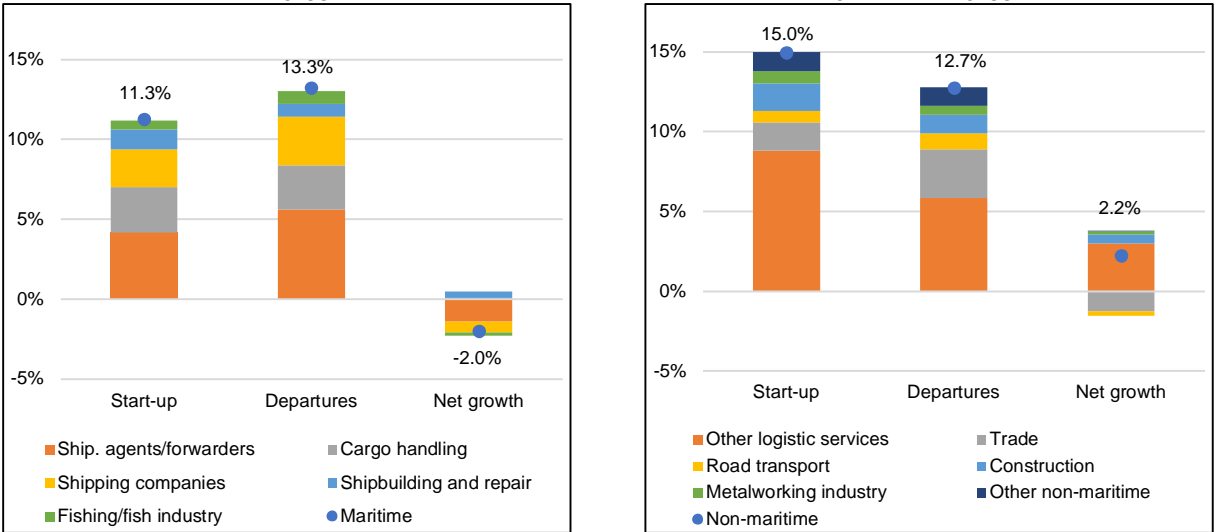
A large number of departures offset by a relatively large number of start-ups is often a sign of innovation and strengthening of competitiveness

To have a clear picture on the real demographic dynamics, we have to count the start-ups and departures instead. To assess the dynamics objectively, it is useful to compare the figures with the numbers of active companies in the starting period. As such, the start-up ratio is calculated as the ratio of the number of start-ups during 2016-2020 over the number of active companies in the port population in 2015. The departure ratio is the number of deletions and opening of bankruptcy proceedings over the years 2016 to 2020 to the number of companies operating in 2015. The difference between these two ratios is considered as the net growth ratio.

The left-hand side of [Figure 1](#) illustrates a negative net growth ratio (-2%) in the maritime cluster which means that the number of maritime companies contracted over the period 2015-2020 because the death ratio (13.3%) has been higher than the start-up rate (11.3%). This was especially evident in the shipping agents and forwarders segment and shipping companies branch where competition is quite fierce. In the last few years before the pandemic, the container segment of the shipping industry was struggling with an oversupplied market and slow demand growth, which had kept container freight rates generally low while large-scale consolidations took place. Since the height of the pandemic, ship owners have been cutting capacity even to the extent that since 2021, supply has lagged behind demand, leading to higher freight rates.

The cargo-handling business also experienced some demographic dynamics, being prone to the impact of technology and automation.

FIGURE 1 BREAKDOWN OF START-UP, DEPARTURES AND NET GROWTH RATIOS BETWEEN 2015 AND 2020



Source: NBB.

While [Table 6](#) shows a decline in the number of non-maritime companies in the port population surveyed, [Figure 1](#) demonstrates a positive net growth of 2.2% over the period 2015-2020, implying that the decline in the non-maritime port population is mainly explained by movements out of the geographical port site or by companies changing their operational activities to branches that are not considered in the study. The smaller non-maritime population is not caused by more departures than start-ups, since a positive net growth ratio is observed. This net increase is primarily due to the positive contribution by other logistic services (adding 3 p.p. to total growth) partly offset by trade (contributing -1.3 p.p. to total change). Head offices, business and other management consultancy activities accounted for most of the start-ups and departures in the other logistic services segment.

The level of company failures was lowest in 2020

So far, the demographic structure aggregated over the period 2015-2020 has been considered. Looking at the year-on-year dynamics, a start-up, departure and net growth ratio are calculated for each year comparing the movements in year t to the active companies in year t-1 for the entire port population. The results illustrate that the level of start-ups and departures dropped drastically in 2020, leading to a low start-up and departure ratio ([Figure 2](#)). Although Belgian ports were affected by the COVID-19 pandemic, various temporary government support measures and moratoria on insolvencies prevented companies from going bankrupt, so there were no additional increases in departures, nor in company failures. But then the restrictions hardly created a beneficial environment for new companies to start up.

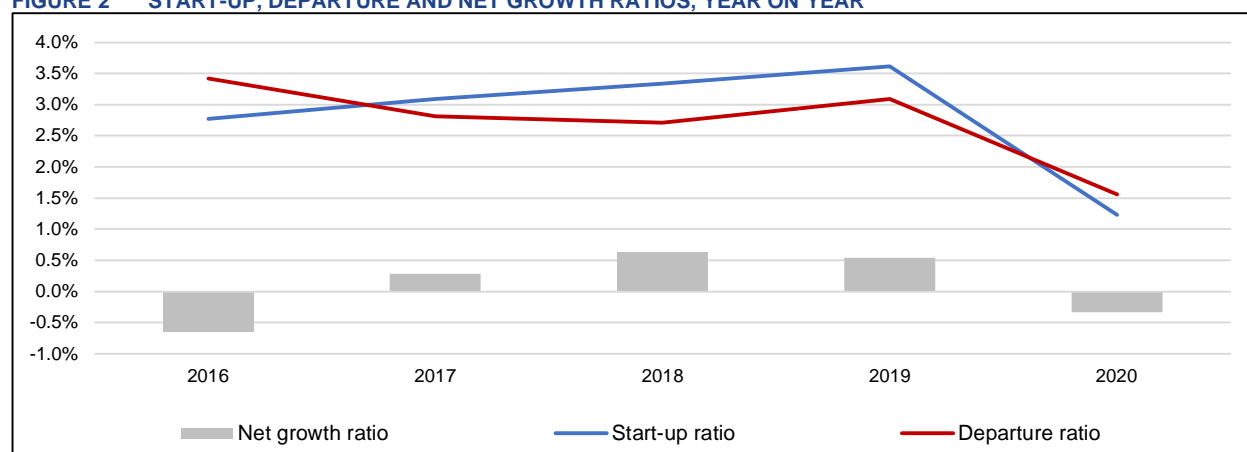
TABLE 6 DEMOGRAPHY OF BELGIAN PORTS FOR THE PERIOD 2015-2020

	Active 2015	Active 2020	Migrate-in	Migrate-out	Start-ups	Departures	Restructuring	Failure
Shipping agents and forwarders	697	584	99	212	70	94	28	62
Cargo handling	363	356	85	92	48	47	22	25
Shipping companies	320	293	59	86	40	51	14	36
Shipbuilding and repair	138	123	35	50	21	14	2	12
Fishing and fisheries industry	113	105	13	21	9	13	2	11
Port trade	30	21	3	12	1	2	0	2
Port construction and dredging	14	10	1	5	1	2	2	0
Port authority	8	8	0	0	0	0	0	0
Maritime	1 683	1 500	295	478	190	223	70	148
Other logistic services	848	783	274	339	204	135	50	82
Trade	601	488	95	208	41	71	27	44
Road transport	213	181	40	72	17	23	11	12
Construction	207	184	59	82	40	27	12	15
Metalworking industry	132	132	33	33	18	13	6	7
Other industries	113	110	31	34	9	10	3	7
Chemicals industry	101	100	22	23	6	8	5	3
Food industry	31	31	6	6	3	3	2	1
Energy	26	29	8	5	8	3	2	1
Car manufacturing	20	15	2	7	0	3	1	2
Electronics	13	10	4	7	1	0	0	0
Fuel production	9	11	5	3	1	0	0	0
Other land transport	8	6	1	3	0	0	0	0
Non-maritime	2 322	2 080	580	822	348	296	119	174
Total	4 005	3 580	875	1 300	538	519	189	322

Source: NBB.

Notes:

- Active 2015: number of active entities in port population in 2015
- Active 2020: number of active entities in port population in 2020
- Migrate-in: number of new arrivals in port population during 2016-2020
- Migrate-out: number of disappearing entities out of port population during 2016-2020
- Start-ups: number of newly created port entities during 2016-2020
- Departures: number of disappearing port entities during 2016-2020 because of restructuring, bankruptcy or stopping their operational activity
- Restructuring: number of disappearing port entities during 2016-2020 because of a merger or split
- Failure: number of disappearing port entities during 2016-2020 because of opening of bankruptcy proceedings and bankruptcies itself.

FIGURE 2 START-UP, DEPARTURE AND NET GROWTH RATIOS, YEAR ON YEAR

Source: NBB.

1.5 Decline in value added

Direct value added fell by 1.2% in 2020, particularly in non-maritime branches hit by imposed business closures or impacted by demand contractions and supply-chain disruptions

The (in)direct value added generated at the Belgian ports between 2015-2020 is reported in [Table 7](#) and [Table 8](#), the former giving an overview of the contribution of each port to total direct value added and the latter breaking the total down into its main branches of activity. It should be noted that the percentages in the columns “contribution to growth (p.p.)” are different from the growth percentages for each port or branch of activity.

TABLE 7 OVERVIEW OF VALUE ADDED BY PORT
(in € million - current prices)

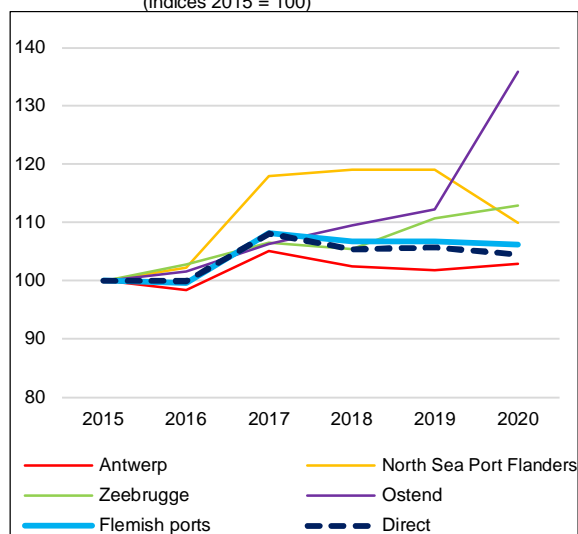
Ports	2015	2016	2017	2018	2019	2020	Contribution to growth (p.p.) ¹ 2019-2020
Antwerp	10 862.4	10 691.3	11 422.1	11 129.9	11 060.8	11 176.2	0.6
North Sea Port Flanders	3 774.1	3 858.7	4 450.3	4 494.4	4 495.1	4 147.1	-1.8
Zeebrugge	961.7	988.0	1 024.0	1 014.2	1 064.1	1 086.4	0.1
Ostend	521.2	529.2	554.1	570.4	584.7	708.2	0.6
Flemish ports	16 119.5	16 067.3	17 450.4	17 208.8	17 204.8	17 117.8	-0.5
Liège	1 073.7	1 172.6	1 156.7	989.8	1 045.5	1 056.9	0.1
Brussels	804.8	740.8	854.1	805.1	839.9	696.6	-0.7
Inland ports	1 878.4	1 913.4	2 010.9	1 795.0	1 885.4	1 753.5	-0.7
Outside port zone	138.3	153.4	145.3	109.9	84.4	80.8	0.0
Direct	18 136.2	18 134.0	19 606.6	19 113.7	19 174.6	18 952.1	-1.2 ²
Indirect	12 971.7	12 551.6	13 389.6	13 131.9	13 164.7	12 807.8	
Total	31 107.9	30 685.6	32 996.2	32 245.6	32 339.3	31 759.9	

Source: NBB.

¹ For a definition of contribution to growth in percentage points, see [Annex 2.1](#).

² Percentage change compared to the previous year.

FIGURE 3 VALUE ADDED AT THE BELGIAN PORTS
(indices 2015 = 100)



Source: NBB.

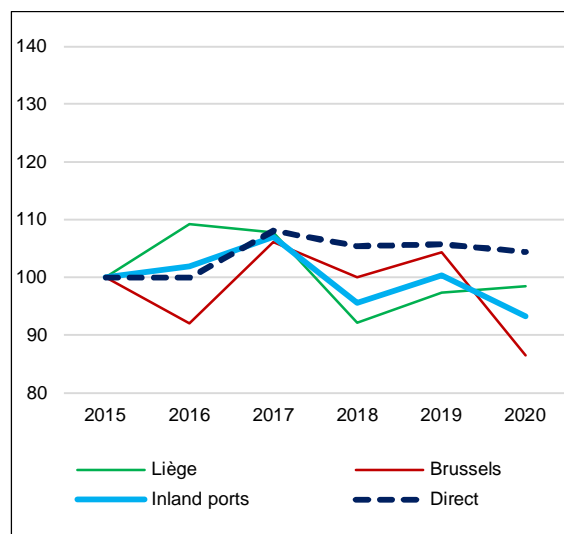


TABLE 8 OVERVIEW OF VALUE ADDED BY BRANCH OF ACTIVITY
(in € million - current prices)

	2015	2016	2017	2018	2019	2020	Contribution to growth (p.p.) ¹ 2019-2020	Weight (%) 2020
Cargo handling	2 132.2	2 241.0	2 318.1	2 298.6	2 342.3	2 354.6	0.1	12.4
Shipping companies	790.7	723.1	488.2	462.6	698.5	873.9	0.9	4.6
Shipping agents and forwarders	773.1	729.6	746.2	727.3	729.1	747.3	0.1	3.9
Other maritime	1 216.8	1 177.1	1 197.8	1 170.2	1 176.2	1 236.2	0.3	6.5
Maritime	4 912.9	4 870.7	4 750.4	4 658.8	4 946.0	5 212.1	1.4	27.5
Chemicals industry	4 082.6	3 786.0	4 416.8	4 463.1	3 814.6	3 804.0	-0.1	20.1
Trade	2 083.6	2 252.6	2 357.4	2 493.6	2 607.8	2 349.8	-1.3	12.4
Metalworking industry	1 479.0	1 544.2	1 847.6	1 717.5	1 460.2	1 338.1	-0.6	7.1
Other non-maritime	5 578.1	5 680.4	6 234.4	5 780.5	6 346.0	6 248.2	-0.5	33.0
Non-maritime	13 223.3	13 263.3	14 856.3	14 454.9	14 228.6	13 740.0	-2.5	72.5
Direct	18 136.2	18 134.0	19 606.6	19 113.7	19 174.6	18 952.1	-1.2 ²	100.0
Indirect	12 971.7	12 551.6	13 389.6	13 131.9	13 164.7	12 807.8		
Total	31 107.9	30 685.6	32 996.2	32 245.6	32 339.3	31 759.9		

Source: NBB.

¹ For a definition of contribution to growth in percentage points, see [Annex 2.1](#).

² Percentage change compared to the previous year.

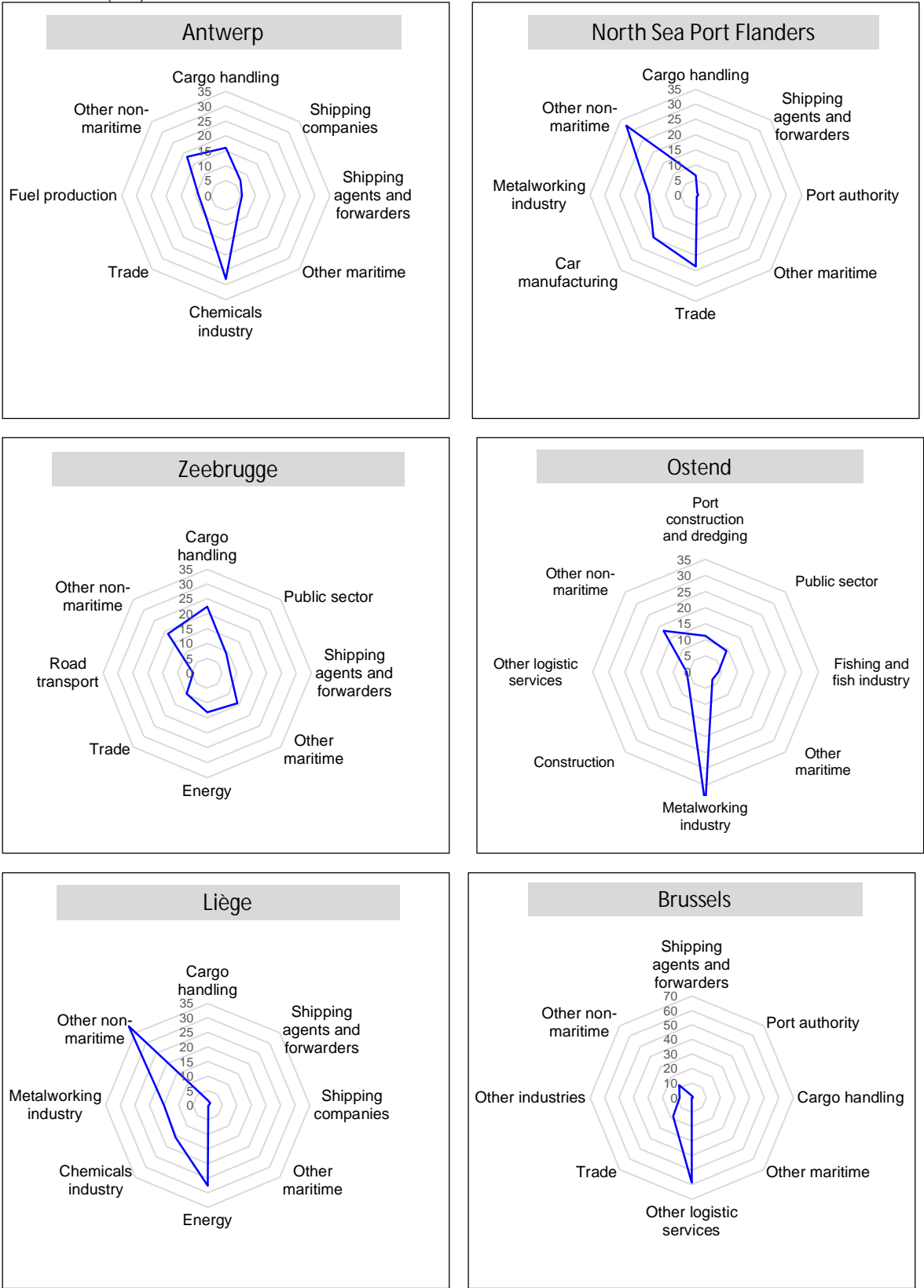
Between 2019 and 2020, total direct value added at the Belgian ports fell by 1.2%, a decline that is less severe than the drop visible in total value added (-4%) for the entire Belgian economy in 2020 compared to 2019, owing to the maritime cluster being considered as essential sector in 2020. This meant that maritime port activities had to continue operating, while the Belgian authorities imposed lockdown measures and required the closure of many business activities such as non-food shops, catering establishments, cultural activities, hairdressers, etc. to curb the spread of coronavirus infections. As a result, direct value added in the maritime cluster grew, while value added in the non-maritime cluster declined in 2020: the first contributing +1.4 p.p. and the second -2.5 p.p. to the total change in direct value added of the Belgian ports. The main non-maritime branches responsible for the drop were trade, the metalworking industry and other logistic services (as part of “other non-maritime” branches), contributing respectively - 1.3 p.p., -0.6 p.p. and -0.8 p.p. to the overall change. A decline in trading activities was observed but still limited since not all trading firms were affected to the same extent. Some retailers benefited from a change in consumption patterns such as traders in personal protection equipment or wholesale fresh fruit and vegetable distributors. Most notably, it was traders specialised in online shopping solutions that enjoyed a big positive impact. The reduced value added in the metalworking industry stemmed from the lower demand for steel as a result of the COVID-19 crisis, while falling value added in other logistic services possibly came from companies cutting back their budgets for consultancy, R&D and training activities, in turn leading to less demand for other logistic services.

The indirect value amounted to around 67% of direct value added for the year 2020. Indirect effects fell more strongly (-2.7%) mainly due to declining direct effects in the metalworking industry, trade and other logistic services on the one hand and a relatively high multiplier for fuel production on the other hand. A small decline in direct value added generated by fuel production and a high multiplier led to a strong reduction in the value added generated by its supplier branches. The reader should bear in mind that indirect effects always have to be handled with caution, more as an indicator of the importance of the ports for the national and local economy than as an absolute value. In 2020, direct value added generated by the Belgian ports accounted for 4.1% of Belgium’s GDP (and 7% including indirect value added).

Although aggregated direct value added for all Belgian ports fell by 1.2% in 2020 compared to 2019, this decline was only visible in North Sea Port Flanders and in the port of Brussels, while the other ports were able to maintain their value added or even boost it. The substantial share of the metalworking industry

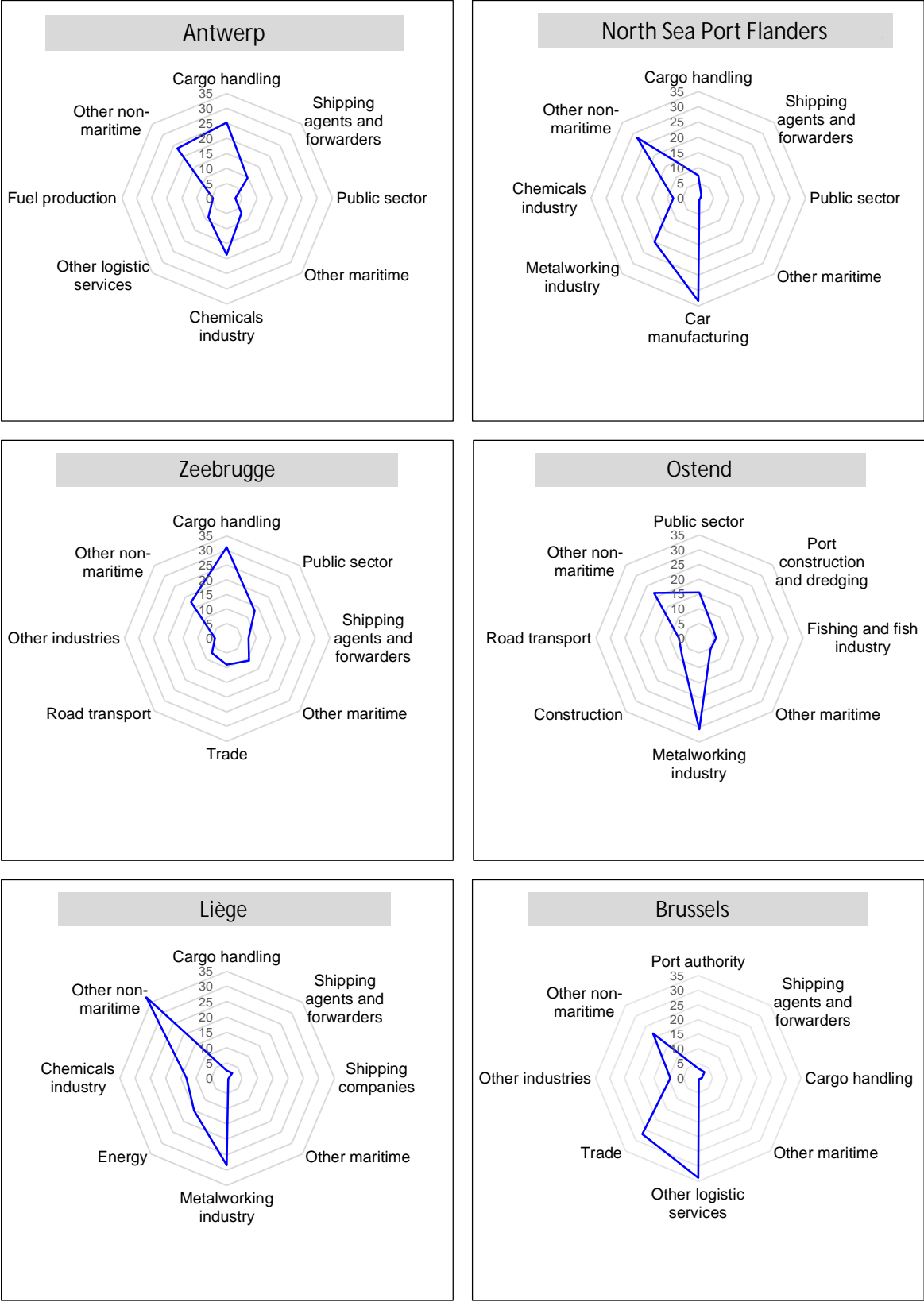
and trading companies in Ghent and the strong presence of other logistic services in Brussels clarify those developments.

FIGURE 4 MAIN SECTORS AT THE BELGIAN PORTS IN TERMS OF VALUE ADDED IN 2020
(in %)



Source: NBB.

FIGURE 5 MAIN SECTORS AT THE BELGIAN PORTS IN TERMS OF EMPLOYMENT IN 2020
(in %)



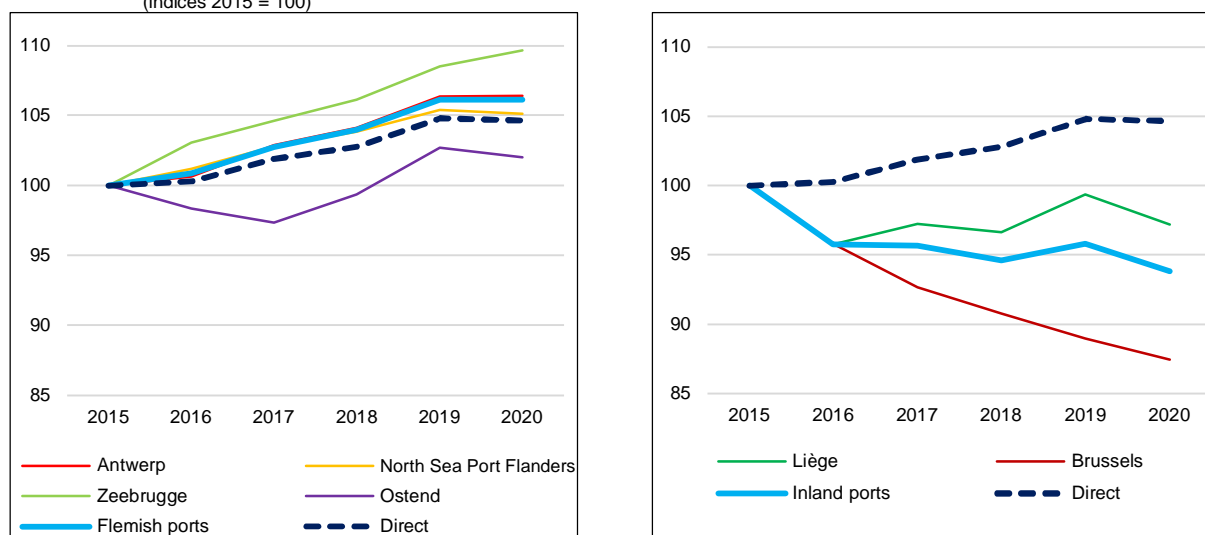
1.6 Employment remained stable

In 2020, the number of direct jobs was maintained, partly due to the temporary lay-off system, being more flexible during the pandemic

Direct employment at the Belgian ports remained quite stable. Only 184 full-time equivalents (FTEs) were lost in 2020 (Table 9). The ports, where at least three out of the ten workers were employed in the maritime cluster, managed to maintain their numbers of jobs. The others (Ghent, Liège and Brussels), where at least nine out of the ten FTEs were working in non-maritime branches, saw their employment level fall slightly. The main sectors (Table 10) contributing to this decline were the metalworking industry and trade (the last as component of 'other non-maritime branches'), adding -0.3 p.p. and -0.2 p.p. to the total change in direct employment in 2020.

Indirect employment totals around 1.1 times direct employment (2020). So, the indirect employment multiplier is larger than 1, while the value added multiplier is less than 1. The share of port jobs in total Belgian domestic employment came to 2.8% for direct employment¹⁶ and 5.9% for total employment in 2020.

FIGURE 6 EMPLOYMENT AT THE BELGIAN PORTS
(indices 2015 = 100)



Source: NBB.

¹⁶ Direct employment does not include self-employment or temporary agency work, with the exception of dock workers covered by a separate regime.

TABLE 9 OVERVIEW OF EMPLOYMENT BY PORT
(in FTEs)

Ports	2015	2016	2017	2018	2019	2020	Contribution to growth (p.p.) ¹ 2019-2020
Antwerp	58 987	59 356	60 688	61 397	62 722	62 781	0.0
North Sea Port Flanders	27 475	27 797	28 241	28 526	28 963	28 877	-0.1
Zeebrugge	8 958	9 231	9 370	9 508	9 721	9 825	0.1
Ostend	4 986	4 903	4 854	4 953	5 121	5 086	0.0
Flemish ports	100 406	101 287	103 152	104 383	106 528	106 568	0.0
Liège	8 191	7 843	7 963	7 915	8 138	7 961	-0.1
Brussels	4 271	4 091	3 957	3 876	3 801	3 735	-0.1
Inland ports	12 462	11 934	11 920	11 791	11 939	11 696	-0.2
Outside port zone	2 050	2 027	2 032	1 958	1 983	2 001	0.0
Direct	114 918	115 248	117 105	118 132	120 449	120 265	-0.2 ²
Indirect	122 345	122 567	126 657	129 539	134 994	134 346	
Total	237 262	237 815	243 762	247 671	255 443	254 611	

Source: NBB.

¹ For a definition of contribution to growth in percentage points, see [Annex 2.1](#).

² Percentage change compared to the previous year.

TABLE 10 OVERVIEW OF EMPLOYMENT BY BRANCH OF ACTIVITY
(in FTEs)

	2015	2016	2017	2018	2019	2020	Contribution to growth (p.p.) ¹ 2019-2020	Weight (%) 2020
Cargo handling	19 709	20 237	20 842	21 793	22 647	22 847	0.2	19.0
Shipping agents and forwarders	7 938	7 800	7 837	7 760	7 592	7 483	-0.1	6.2
Public sector	4 225	4 181	4 083	3 990	4 067	4 047	0.0	3.4
Other maritime	6 839	6 979	6 876	6 929	7 060	7 114	0.0	5.9
Maritime	38 712	39 196	39 638	40 472	41 365	41 490	0.1	34.5
Chemicals industry	14 578	14 735	14 891	15 233	15 514	15 779	0.2	13.1
Metalworking industry	13 602	13 595	13 588	12 796	12 943	12 619	-0.3	10.5
Car manufacturing	10 533	10 280	10 320	10 410	10 563	10 603	0.0	8.8
Other non-maritime	37 493	37 442	38 668	39 221	40 064	39 774	-0.2	33.1
Non-maritime	76 206	76 052	77 467	77 660	79 084	78 775	-0.3	65.5
Direct	114 918	115 248	117 105	118 132	120 449	120 265	-0.2 ²	100.0
Indirect	122 345	122 567	126 657	129 539	134 994	134 346		
Total	237 262	237 815	243 762	247 671	255 443	254 611		

Source: NBB.

¹ For a definition of contribution to growth in percentage points, see [Annex 2.1](#).

² Percentage change compared to the previous year.

1.7 Boost for investment

*Investment rose by 5.1% in 2020,
thanks to rising volumes in the chemicals industry and cargo handling*

In 2020, direct investment in the Belgian ports was up by 5.1% to reach €5.1 billion. The volume of investment refers to gross investment, that is all new purchases of property, plant and equipment in the year concerned. The biggest contribution came from investment in the port of Antwerp, reinforced by extra investment in the outside port zone and the port of Ostend (respectively, 4.4 p.p., 3.5 p.p. and 1.5 p.p. of total growth). Antwerp accommodates large chemicals and petrochemicals clusters, which were behind the higher investment, while the outside port zone hosts Vlaamse Waterweg (classified in the cargo-handling branch as business activity ancillary to maritime and inland waterway transport) whose investment in water management rose substantially in 2020. North Sea Port Flanders, the ports of Zeebrugge and Brussels all contributed negatively (respectively -2.3 p.p., -1 p.p. and -1.2 p.p.) to total investment growth in 2020.

TABLE 11 OVERVIEW OF INVESTMENT BY PORT
(in € million)

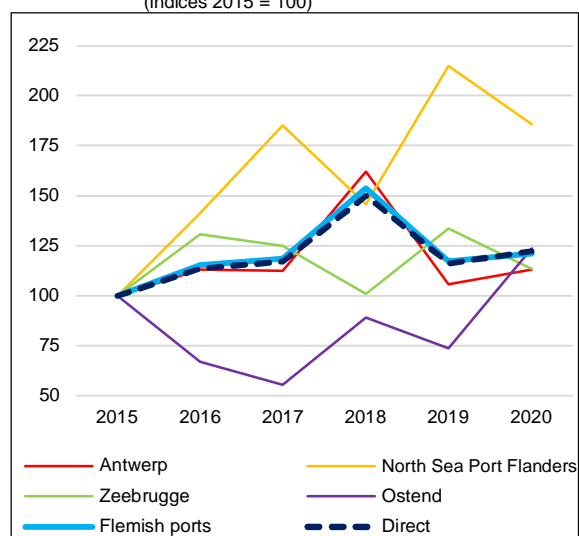
Ports	2015	2016	2017	2018	2019	2020	Contribution to growth (p.p.) ¹ 2019-2020
Antwerp	2 912.0	3 295.0	3 272.2	4 723.4	3 078.4	3 293.2	4.4
North Sea Port Flanders	370.6	523.4	686.4	540.4	796.9	687.8	-2.3
Zeebrugge	230.6	301.0	287.9	232.8	308.0	261.0	-1.0
Ostend	144.3	96.6	80.2	128.4	106.2	178.5	1.5
Flemish ports	3 657.5	4 215.9	4 326.7	5 625.1	4 289.5	4 420.5	2.7
Liège	219.2	196.6	232.2	236.4	210.3	218.2	0.2
Brussels	65.1	76.4	72.8	105.8	102.1	44.0	-1.2
Inland ports	284.3	273.1	304.9	342.2	312.4	262.2	-1.0
Outside port zone	221.4	237.0	252.3	280.4	241.1	409.1	3.5
Direct	4 163.2	4 726.0	4 883.9	6 247.7	4 843.0	5 091.8	5.1 ²

Source: NBB.

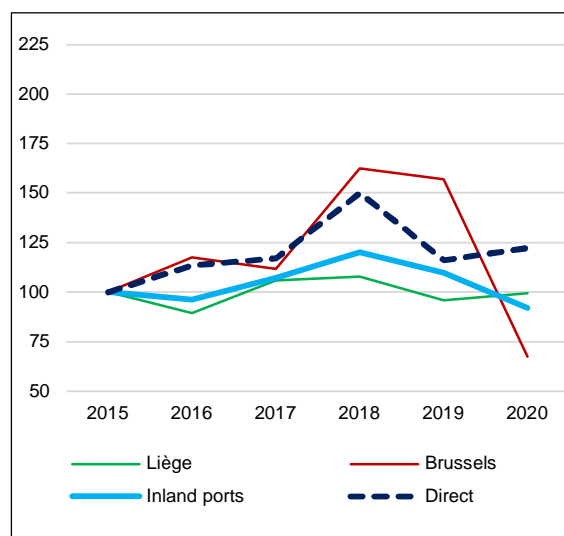
¹ For a definition of contribution to growth in percentage points, see [Annex 2.1](#).

² Percentage change compared to the previous year.

FIGURE 7 INVESTMENT AT THE BELGIAN PORTS
(indices 2015 = 100)



Source: NBB.



Taking all Belgian ports together, cargo handling and the chemicals industry are the segments with the biggest shares in investment in 2020. The pattern of investment is closely linked to individual projects and is therefore highly volatile, so the figures require a cautious interpretation.

TABLE 12 OVERVIEW OF INVESTMENT BY BRANCH OF ACTIVITY
(in €million)

	2015	2016	2017	2018	2019	2020	Contribution to growth (p.p.) ¹ 2019-2020	Weight (%) 2020
Cargo handling	687.8	821.9	938.2	1 049.9	944.5	1 015.9	1.5	20.0
Shipping companies	591.7	750.9	424.3	1 586.1	514.5	389.2	-2.6	7.6
Port construction and dredging	73.7	39.2	340.4	237.4	277.3	218.1	-1.2	4.3
Other maritime	305.0	358.2	282.1	329.7	372.4	442.6	1.4	8.7
Maritime	1 658.2	1 970.2	1 984.9	3 203.2	2 108.7	2 065.9	-0.9	40.6
Chemicals industry	784.8	887.7	920.6	1 284.8	1 092.7	1 386.2	6.1	27.2
Energy	350.7	321.5	384.4	425.1	316.2	305.6	-0.2	6.0
Fuel production	534.3	626.6	443.7	256.4	222.6	279.0	1.2	5.5
Other Non-maritime	835.1	919.9	1 150.3	1 078.1	1 102.8	1 054.9	-1.0	20.7
Non-maritime	2 505.0	2 755.8	2 899.0	3 044.5	2 734.3	3 025.9	6.0	59.4
Direct	4 163.2	4 726.0	4 883.9	6 247.7	4 843.0	5 091.8	5.1 ²	100.0

Source: NBB.

¹ For a definition of contribution to growth in percentage points, see [Annex 2.1](#).

² Percentage change compared to the previous year.

Investment in property, plant and equipment is important for the value added creation. The relevance of these investment levels, can be measured by the investment degree defined as the ratio of the total acquisition value of property, plant and equipment in year t to the gross value added creation in the same year.

When we calculate a globalised investment degree per cluster and per activity branch, the black dotted lines in bold in [Figure 8](#) show that the maritime cluster has a significantly higher globalised investment degree than the non-maritime cluster. This means that investment is an important basis for added value creation in maritime sectors.

Shipping companies and port authorities invest relatively more given the competitive businesses in which they operate

Considering only the maritime cluster (see both graphs on the left-hand side in [Figure 8](#)), it is no surprise to see that the globalised investment degree is highest for the shipping companies (orange line), port authorities (blue line) and port construction and dredging (yellow line). Those three branches actually require a relatively high investment volume just to carry out their operational activities.

To adapt to the demand for seaborne trade flows, **shipping companies** have to invest to expand and to renew their fleets since older ships are generally less efficient and generate higher emissions. For those investment decisions, they have to take regulatory changes¹⁷ into account, particularly those related to decarbonisation and to aim for zero emissions. Moreover, for several years, there was a spate of mergers and mega alliances among container carriers in order to reduce the existing ship supply overcapacity and

¹⁷ In 2018, the IMO (International Maritime Organization) adopted a sector reduction pathway consistent with the Paris Climate Agreement. The aim is to reduce total annual greenhouse gas emissions by at least 50 per cent of 2008 levels by 2050, while reducing carbon intensity by at least 40 per cent by 2030, pursuing efforts towards 70 per cent by 2050. (Review of Maritime Transport 2021)

to boost constrained freight rates that had dampened profitability in most shipping companies. In [Figure 8](#), the globalised investment degree for shipping companies in 2018 was corrected, excluding the mega merger by Euronav¹⁸, as not correcting for this alliance would lead to a higher globalised figure for shipping companies in 2018 (342%).

The **port authorities** face many challenges that are constantly changing over time. They continuously invest in port infrastructure to accommodate larger ships and to expand intermodal connections to deal with higher peak demand. Because of Brexit, the port authority of Zeebrugge, for example, had to invest in the RX/SeaPort data platform to enable a digital connection between logistic shareholders and the Belgian customs authorities for import and exports. Higher demand for green energy and circular economy is prompting port authorities to put together various private partners on these issues, for the development of investment projects (including those they are partly involved in).

The globalised investment degree in **cargo handling**, is quite substantial as well. To provide modern and sophisticated cargo-handling facilities and adequate storage installations, relatively high investment is needed in this branch, to cope with the trend of ever larger ships and higher peak demands.

Energy and industrial companies based on high-tech knowledge report higher investment

Considering the non-maritime cluster (see both graphs on the right-hand side in [Figure 8](#)), overall industrial branches have a higher globalised investment degree than the non-maritime services. In particular, the energy sector (green line) and the industrial branches (light blue and dark blue line) whose operational activity is largely based on high technological know-how and whose business is largely subject to future developments devote relatively large sums to investment.

The **energy sector** reports the highest ratio in the non-maritime cluster because of the high investment required for power generation and for constantly upgrading transmission infrastructures. At the same time, producers and distributors of alternative energy (such as offshore wind power generation and natural gas distribution) have joined the industry, themselves requiring significant investment too. The higher investment degree in 2018 came from more investment by Electrabel modernising and extending the service life of its nuclear power plants, on the one hand, and lower value added due to a fall in the availability of nuclear power plants in 2018 with several units out of service for repair work or inspection and various technical interventions concerning the extension of their lifespan, on the other hand.

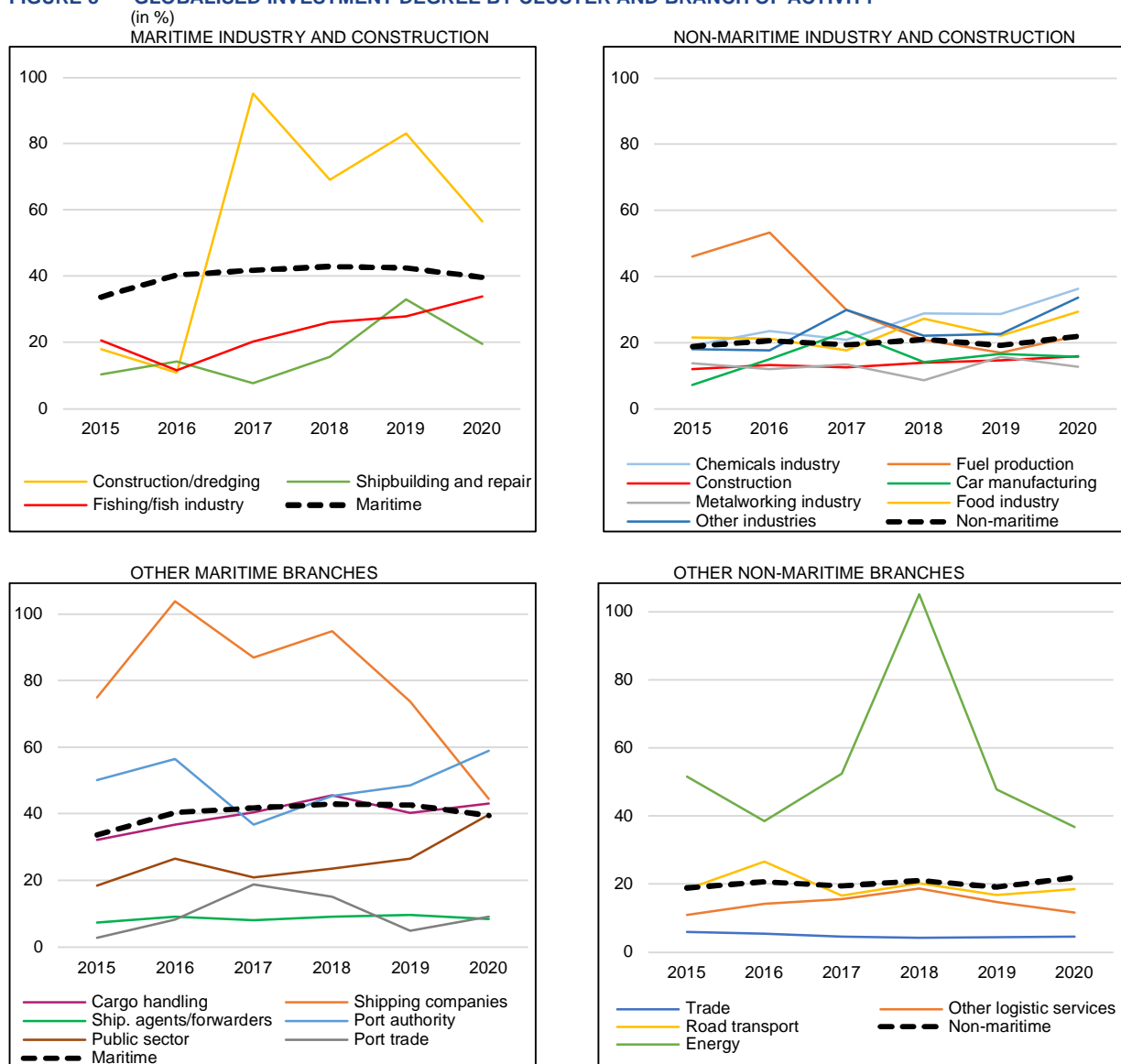
Chemicals industry and other industries (containing circular economic projects) require high investment volumes too. Chemicals plants need to invest large sums to boost efficiency in their plants on the one hand and to meet market demand on the other hand. Growing demand for propylene in Europe, for example, has created opportunities to expand the capacity of existing propylene factories.

Other industrial companies processing and recycling waste and sewage had to invest substantial amounts to obtain new recycling technologies. Some of them are even trying to convert non-recyclable waste into different commodities for use in construction, for example.

Fuel production enjoyed a high globalised investment degree in the years before 2018, associated with specific projects. Exxonmobil Petroleum & Chemical, for example, anticipated the new regulations that came into force on 1 January 2020, banning the use of fuel with a sulphur content of more than 0.5% in international shipping. So, the company invested large sums in 2015-2017 to build a new coker unit to produce low-sulphur transport fuel.

¹⁸ In 2018, Euronav and Gener8 Maritime merged, which transformed Euronav into the leading independent large crude tanker operator in the world.

FIGURE 8 GLOBALISED INVESTMENT DEGREE BY CLUSTER AND BRANCH OF ACTIVITY



Source: NBB.

1.8 Financial ratios in the Belgian ports

Total turnover of all port companies¹⁹ fell by 13% between 2019 and 2020, considering only the turnover figures filed by large companies in their annual accounts. This came as no surprise since, in mid-March 2020 the Belgian government imposed the first lockdown to contain the first wave of the COVID-19 pandemic. The unprecedented situation had a massive impact on businesses with impaired working conditions due to staff shortages, lower demand and supply-chain disruptions. The question was to what extent firms with declining revenues were able to downscale their costs by a similar magnitude, in order to ward off pressure on their corporate profitability, liquidity and solvency.

To analyse the changing situation in the Belgian ports in 2020 compared to 2019, three financial ratios are considered. **Profitability** will be measured by the return on assets (ROA) calculated as the net operating result on total assets. The ratio indicates how profitable a company is in relation to its total assets, in other words, how efficiently a company uses its assets to generate an operating profit. A higher return on assets means a company is more efficient and productive at managing its balance sheet to generate operating profits while a lower ratio indicates there is room for improvement.

To assess the **liquidity** of a business, the acid test is used, defined as the amount of cash a company has in relation to its short-term liabilities. This measures a firm's ability to meet its short-term liabilities with its current cash²⁰ resources. It is important for companies (and a sign of financial health), to have enough cash to cover their payment obligations on an ongoing basis without needing to source funding elsewhere. The higher the value of the ratio, the larger the margin of safety a company possesses in its ability to pay its bills.

The equity ratio throws light on the overall financial strength or the **solvency** of a company, signalling the soundness of its capital structure. A higher equity ratio reflects a better long-term solvency position and greater independence from capital markets. Besides, companies with a higher equity ratio have to pay less interest, leaving them with more free cash on hand for future expansions, growth and dividends. A low equity ratio, on the contrary, implies a higher credit risk for the creditors and a bigger risk of incurring losses as a large portion of the company's earnings is spent in paying interests. Entities with a low equity ratio will have more difficulty gaining access to capital markets. And if they do manage to get a loan, it will be at a comparatively higher interest rate.

The financial ratios are presented in the form of global figures²¹ and quartiles²². Using both enables a complementary analysis. Since the globalised averages are influenced by extreme values (outliers), the quartile values are important to neutralise those extremes. Moreover, the globalised ratios present the situation from the macro- and meso-economic angle, while the quartiles reflect the microeconomic situation.

¹⁹ Almost none of the small companies disclosed their turnover level in their annual accounts, because this is not a required field to complete in the abridged or micro format.

²⁰ Cash resources are the sum of cash money and current cash investments that are available for sale. This concerns items b54/58 and b50/53 in the annual accounts of a Belgian company.

²¹ Globalised ratios are obtained by taking the sum of the numerators of all companies divided by the sum of their denominators. The globalised ratio is therefore the weighted average of each ratio at the level of each company, whose weight represents each firm's share in the total value of the ratio's denominator. As a result, the globalised average reflects the situation of companies with the largest denominator value and the situation of companies with a small weight but with an extremely high value for the ratio.

²² The quartiles are values in an ordered distribution. The first quartile is the value where 25% of the firms have a level below and 75% of the firms have a level above the first quartile figure. The second quartile, also named the median, is the central figure where 50% of the firms have a ratio below the median and 50% have a ratio above the median. The third quartile is the number where 75% have a ratio below and 25% have a ratio above the third quartile figure.

Median port company profitability declined in 2020

In all ports except for Brussels, the globalised return on assets is higher in 2020 than in 2019 ([Table 13](#)), coming from a rise in the aggregated operating result in all ports together in 2020 while the overall turnover level decreased. Since globalised ratios are influenced by outlier values, median values have to be considered as well. In each port (except for Zeebrugge), the median company obtained a return on asset in 2020 below that for 2019. To explain the different patterns of globalised ratios and median values, a more in-depth analysis is needed. A distinction will be made between small and large companies on the one hand, and between strong performers and weak performers, on the other hand. All firms that file annual accounts in the abridged or micro format in Belgium are classified as small, the others as large. All companies reporting a positive operating result in 2018 and 2019, will be classified as performing well, the remaining ones as less performing entities.

TABLE 13 RETURN ON ASSETS BY PORT
(in %)

Globalised average							
	Antwerp	North Sea Port Flanders	Zeebrugge	Ostend	Liège	Brussels	Total
2018	2.0	4.2	3.9	3.0	-1.4	0.6	1.7
2019	1.2	2.7	4.2	2.3	-2.7	1.2	1.1
2020	1.5	3.1	4.2	2.7	0.5	-1.0	1.4
Median							
	Antwerp	North Sea Port Flanders	Zeebrugge	Ostend	Liège	Brussels	Total
2018	3.1	4.1	3.8	3.0	2.8	4.1	3.4
2019	3.0	3.8	3.4	2.7	2.2	4.0	3.3
2020	2.8	3.8	4.2	2.7	1.9	3.9	3.2

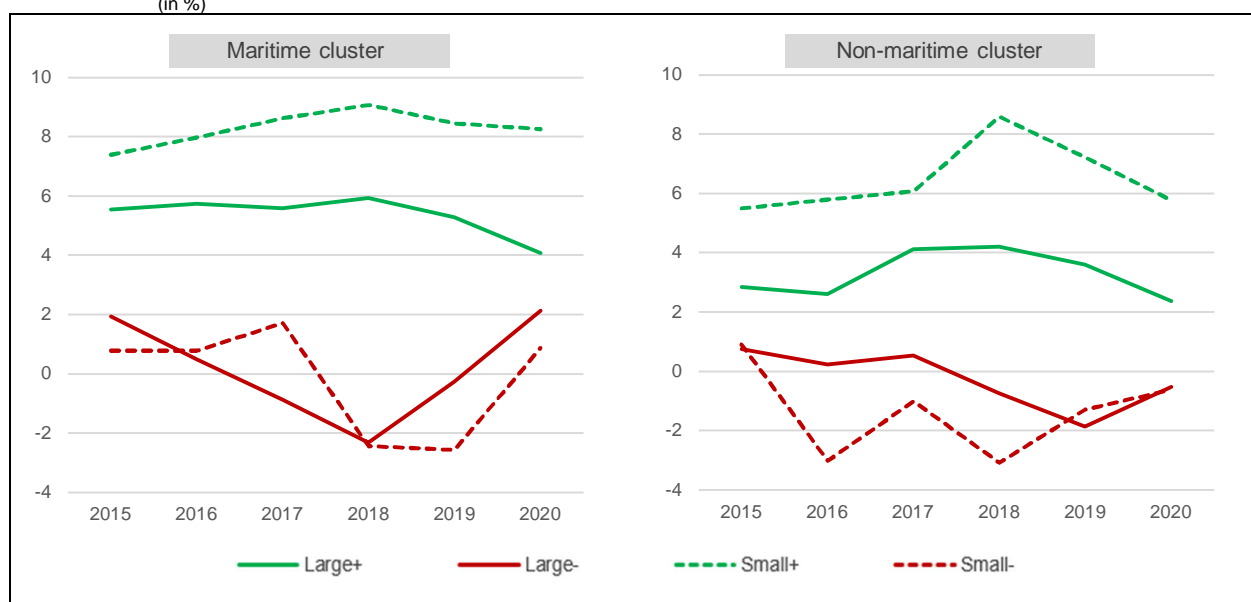
Source: NBB.

*While strong performers experienced a drop,
weak performers enhanced their profitability thanks to government support measures*

[Figure 10](#) illustrates different behaviour between high-performing and low-performing companies. While the strong performers (those with a positive operating result in 2018 and 2019) had a lower globalised return on assets in 2020 than in 2019, the poor performers improved their profitability. Similar changes are evident from the quartile values ([Figure 3.1](#) in Annex 3). Additionally, the ratio of small strong performers exceeded that of large high performers, meaning that small but well-performing companies made a bigger operating profit per € 100 of assets.

Considering small firms only ([Figure 3.1](#) in Annex 3), some recorded excellent performance (Small+ q3) while others performed very badly (Small- q1). **Small firms are therefore more prevalent in the extreme performance zones** (both very good and very weak). This is not connected with crisis situations because, in a normal year, small firms likewise display higher disparity in their performance. A crisis like the COVID-19 pandemic was much more risky for small firms, especially for the most vulnerable among them. The improved profitability of those small weak performers in 2020 compared to 2019 was only possible thanks to generous government support. At the height of the pandemic, massive unconditional²³ support was provided to all firms in order to protect the economy at all costs against a major crisis. Those federal and regional support initiatives flattened the decline for the good performers (if they qualified for the support), while the poor performers were able to boost their profitability. [Figure 3.1](#) (in Annex 3) even shows that the very weak performers (indicated as “Small- q1”) reported the largest revival of their return on asset in 2020, when the figures were still negative, but less so. This resulted in a narrower gap reducing disparity between the very strong performers (Small+ q3) and the worst performers (Small- q1). The port companies in Brussels were an exception: the poorest performers (Small- q1) saw no improvement in their profitability in 2020.

FIGURE 9 GLOBALISED RETURN ON ASSETS BY CLUSTER
(in %)



Source: NBB.

Notes:

- Large+: large strong performing companies (with a positive operating result in 2018 and 2019)
- Small+: small strong performing companies (with a positive operating result in 2018 and 2019)
- Large-: large weak performing companies (with a negative operating result in 2018 or 2019)
- Small-: small weak performing companies (with a negative operating result in 2018 or 2019).

²³ In the early stages of the COVID-19 crisis, the different Regions paid lump sums to businesses that had to close partially or fully. Later on, the Flemish and Walloon Region replaced those fixed amounts by variable support payments matching a proportion of the revenue earned in the corresponding period of 2019, up to a ceiling. The Brussels Capital Region paid most of its aid in lump sums. Additionally, the federal government decided to exempt from tax those lump sums and other support granted by the Regions because of the pandemic.

FIGURE 10 GLOBALISED RETURN ON ASSETS BY PORT
(in %)



Source: NBB.

Notes:

- Large+: large strong performing companies (with a positive operating result in 2018 and 2019)
- Small+: small strong performing companies (with a positive operating result in 2018 and 2019)
- Large-: large weak performing companies (with a negative operating result in 2018 or 2019)
- Small-: small weak performing companies (with a negative operating result in 2018 or 2019).

While the 2020 lockdown measures were effective in curbing the pandemic and limiting its consequences in terms of public health, they brought an economic shock that differed among branches of activity. Although, businesses linked to ports – considered as essential – were not restricted provided that required health and safety measures were met, an impact was noticed since maritime trade was also negatively affected by supply-chain disruptions and demand contractions. [Figure 9](#) illustrates that the globalised return on assets of large strong-performing companies (Large+) active in the maritime cluster decreased less than the one of large high performers in non-maritime segments.

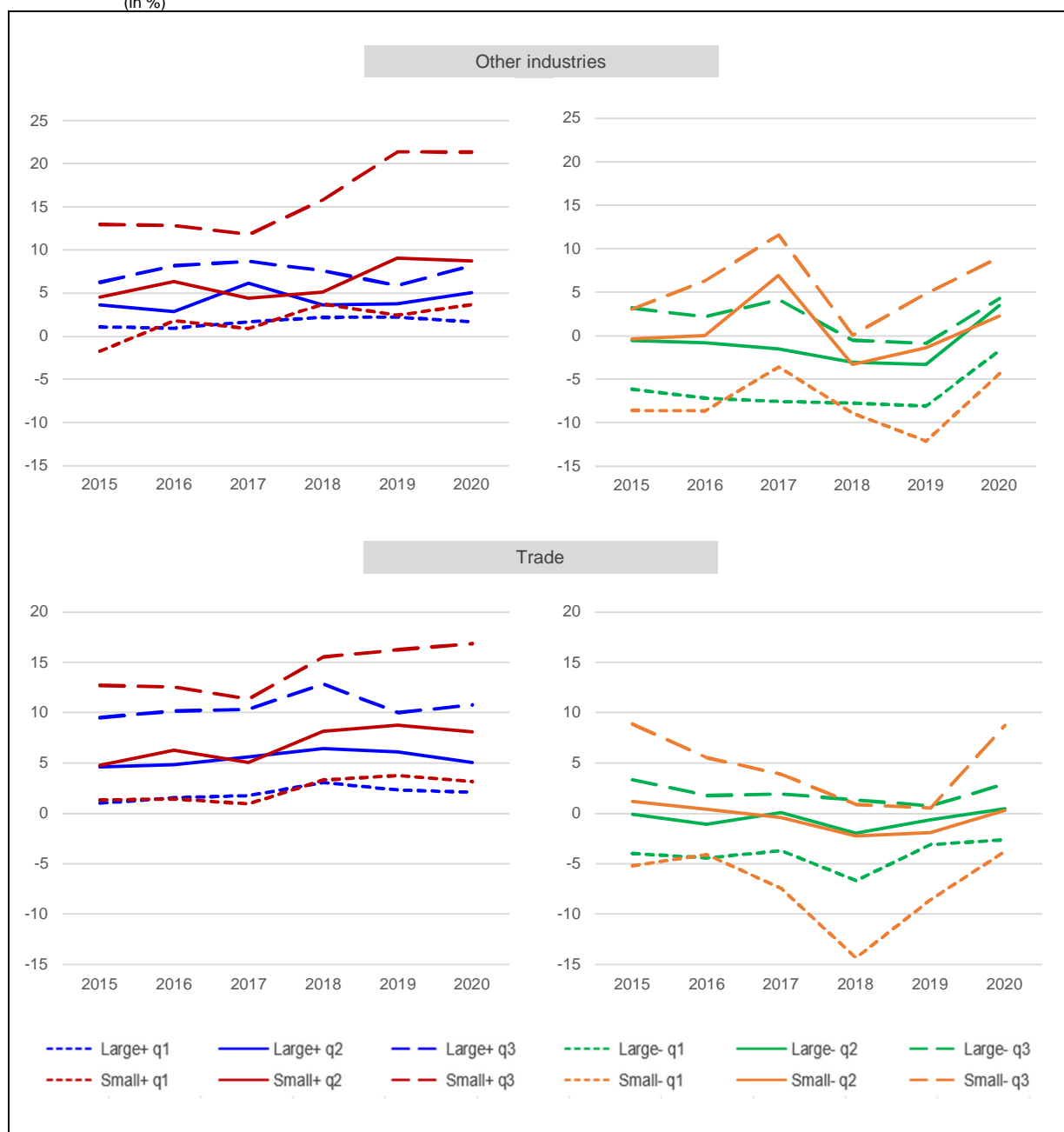
According to [Figure 3.2](#) in Annex 3 however, the profitability of strong performers declined by almost the same extent in 2020, regardless of cluster or size, while low performers improved theirs almost to the same degree.

Looking at the quartile values for each branch of activity separately, no different trends were noted except for the other industries and trading segment. In 2020, the **strong performers operating in other industries** – unlike the other branches of activity – managed to **keep their return on assets ratio stable or even raise it** (upper left-hand side of [Figure 11](#)) because many of them are involved in waste collection and processing, considered by the governments as an essential activity during the pandemic, implying that those firms had to be able to be operational at all times. At the same time, these businesses were not affected by lower demand or disruptions in their supply chain.

A **similar picture** can be painted **for strong-performing trading companies** (lower left-hand side of [Figure 11](#)). The restrictions did not affect all trading firms to the same extent. Some retailers benefited from a change in consumption patterns such as traders in face masks, personal protection equipment and antibacterial hand gels or fresh fruit and vegetable wholesalers. Additionally, trading companies excelling in online shopping solutions were even boosted by the lockdown measures.

Similar calculations are made for the liquidity and solvency ratios. The globalised figures by port, cluster and sector, as well as each of their quartile values, are measured.

FIGURE 11 RETURN ON ASSETS IN A SELECTION OF NON-MARITIME BRANCHES (QUARTILE VALUES)
(in %)



Source: NBB.

1.8.2 Liquidity

In 2020, support to wage payments and (para)fiscal transfers, helped port companies to maintain or even slightly strengthen their liquidity position

It is important for companies to have enough cash to cover their payment obligations on an ongoing basis without needing external money. While the COVID-19 pandemic resulted in supply and demand shocks leading to falling sales across nearly all sectors, financial commitments with respect to suppliers, employees and lenders remained, depleting the liquidity buffers of firms. Even companies not required to close during lockdowns, but producing intermediate goods or services, could suffer a big drop in their sales too. Additionally, liquidity problems in one firm could lead to liquidity shortfalls in others if trade receivables could no longer be received. To avoid a liquidity crisis that could even turn into a corporate solvency crisis, crucial government policies were taken to avoid unnecessary bankruptcies of many firms that were profitable with healthy balance sheets before the COVID-19 outbreak. Examples of government assistance to provide some relief for firms at the height of the crisis were the relaxation of rules on recourse to temporary lay-offs (alleviating the wage burden) and the payment deferrals for fiscal and parafiscal obligations.

Since short-term trade receivables and stocks were no longer easily redeemed in cash in 2020, this analysis opted to look at the evolution of the liquidity in the narrow sense, defined in the literature as an acid test. The ratio is calculated as the amount of cash and current cash investments immediately available for sale in relation to the company's short-term liabilities.

TABLE 14 NARROW LIQUIDITY RATIO PER PORT

Globalised average							
	Antwerp	North Sea Port Flanders	Zeebrugge	Ostend	Liège	Brussels	Total
2018	0.17	0.29	0.44	0.12	0.06	0.13	0.18
2019	0.17	0.23	0.40	0.06	0.04	0.11	0.16
2020	0.19	0.25	0.36	0.18	0.13	0.23	0.20
Median							
	Antwerp	North Sea Port Flanders	Zeebrugge	Ostend	Liège	Brussels	Total
2018	0.18	0.17	0.16	0.24	0.12	0.23	0.19
2019	0.18	0.19	0.18	0.21	0.12	0.23	0.19
2020	0.23	0.25	0.24	0.24	0.19	0.29	0.25

Source: NBB.

Table 14 notes that, **in each port** (except for Zeebrugge), **a rise in the liquidity ratio in 2020 compared to 2019**, both on aggregated level as on median level. Additionally, in all ports (except for Zeebrugge) the globalised liquidity ratio was below its median level, meaning that companies with more short-term liabilities held relatively less cash funds and current cash investments for each euro of current liabilities they had to redeem.

Considering the quartile values of the liquidity ratio for strong and weak performers in the maritime and non-maritime clusters, **Figure 12** likewise shows a small rise in the liquidity ratio for the year 2020 compared to 2019 for each quartile company regardless of its performance or its cluster. Moreover, small entities seem to have a relatively higher liquidity ratio than large entities, possibly because it is more difficult for small businesses to obtain external funds.

According to Demmou *et al.* (2021), corporate liquidity buffers would have run out quickly without any policy intervention, even if those firms facing a high risk of liquidity shortfalls were mostly profitable and viable. A lot of them would not have had enough collateral to bridge a shortfall in liquidity with additional debt. Direct and indirect support for wage payments seemed to be the most useful policy to curb the liquidity crisis, given the high share of wage costs in total corporate spending²⁴. Due to the generous government measures, port companies were able to maintain or slightly improve their liquidity position.

FIGURE 12 NARROW LIQUIDITY RATIO PER CLUSTER: QUARTILE VALUES



Source: NBB.

It is difficult to measure whether the policy initiatives taken in 2020 were sufficiently tailored or potentially too generous by helping less viable companies as well. Analysing the share of port companies with a narrow liquidity ratio of one or higher, [Figure 13](#) shows that over the years 2015-2019, on average 21% of all port companies were able to immediately repay their short-term liabilities, while in 2020, 24% could

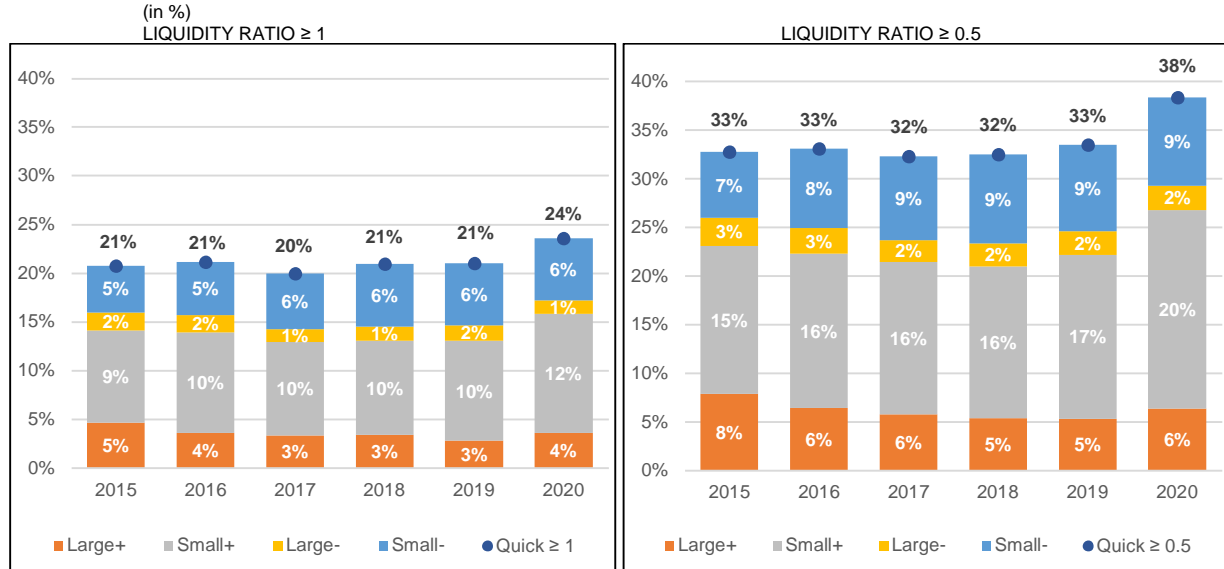
²⁴ Over the years 2015-2019, 50% of value added generated by all port companies was reserved for wage payments.

redeem their short-term liabilities at short notice. A few more small and large strong performers were able to raise their narrow liquidity ratio to one in 2020.

Considering the share of businesses with a liquidity ratio of more than a half, over the 2015-2019 period, 33% of all port companies met this ratio, while in 2020, 38% of companies had a narrow liquidity ratio of more than a half, with more large and small performers.

Both observations are an indication that policy measures did focus on offshoring up companies that were still viable before the outbreak of COVID-19.

FIGURE 13 SHARE OF PORT COMPANIES WITH A LIQUIDITY RATIO LARGER THAN 1 AND LARGER THAN 0.5



1.8.3 Solvency

Port companies improved their solvency too

As a liquidity crisis can quickly turn into a solvency one, diversified aid packages including debt moratoria, safeguards for employees and fiscal measures were applied as support tools.

The globalised average values, as well as the median values for the financial independence of port companies, point to an improvement in 2020 ([Table 15](#)) except for the port of Brussels where the globalised equity ratio fell in 2020 as a result of a heavyweight company suffering a substantial decline in equity after dividends were paid while a massive negative result in 2020 reduced its retained earnings (as a component of equity). Additionally, [Table 15](#) displays globalised ratios above the median levels, implying that overall companies with a higher balance sheet total possess relatively more equity for every € 100 of balance sheet items.

If any cash shortfall of a firm is met by taking out additional debt, for instance by a bank credit or a subordinated loan from private or public investors, in the end, the debt-to-asset ratio can exceed one or in other words, the equity ratio can turn negative. This would not necessarily mean that the business in question would run an immediate bankruptcy risk, provided its equity amount is supplemented with retained earnings sometimes in the future, although its solvency position deteriorates. To check whether this risk was apparent in our data, we considered the composition of the pool of surveyed port firms with an equity ratio lower than zero.

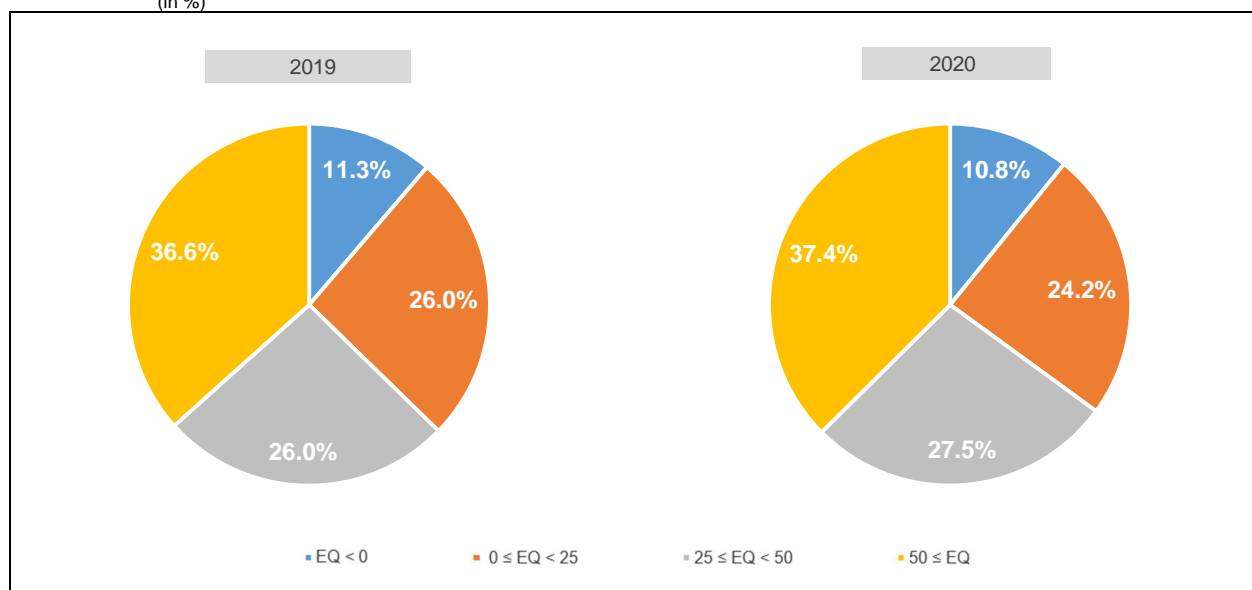
Figure 14 shows that the share of companies with a negative equity ratio (blue part) has remained quite stable (share of 11.3% in 2019 compared to 10.8% in 2020), implying that the Belgian support measures to patch up corporate liquidity did support the solvency position of the Belgian port companies. The figure²⁵ also illustrates a small declining proportion of the port companies with an equity ratio value between 0 and 25%, in favour of a slightly growing share of companies with an equity ratio between 25% and 50% and a moderate expansion in the sample of companies reporting a ratio higher than 50%.

TABLE 15 FINANCIAL INDEPENDENCE PER PORT
(in %)

Globalised average							
	Antwerp	North Sea Port Flanders	Zeebrugge	Ostend	Liège	Brussels	Total
2018	33.9	46.4	48.0	40.9	38.0	59.3	39.9
2019	40.0	43.8	48.2	35.3	37.6	62.8	43.8
2020	39.9	44.0	49.2	41.3	39.3	59.2	43.7
Median							
	Antwerp	North Sea Port Flanders	Zeebrugge	Ostend	Liège	Brussels	Total
2018	31.0	43.0	35.5	42.0	34.0	37.0	34.7
2019	32.9	39.3	37.9	39.3	33.9	39.6	35.9
2020	33.6	40.7	39.4	40.1	37.5	41.7	37.3

Source: NBB.

FIGURE 14 PORT POPULATION DECOMPOSED BY THE FINANCIAL INDEPENDENCE LEVEL
(in %)



Source: NBB.

Notes: EQ stands for equity ratio or financial independence level.

²⁵ To check whether the levels for the year 2020 in figure 14 were not too much influenced by departures in 2020, we also created a fixed population containing only the companies active in the port population in 2019 and in 2020. As a result similar levels for the year 2020 were measured: 10.9% had a negative equity ratio, 23.8% had an equity ratio between 0% and 25%, 27.3% a ratio between 25% and 50% and 38% a ratio above 50%.

2 ANALYSIS BY PORT

2.1 Port of Antwerp

2.1.1 Port developments

In 2020, the port of Antwerp recorded **traffic volume** of 231 million tonnes. Due to strong container traffic (+0.3%), the port of Antwerp was able to limit the decline in total maritime transshipments (-3%). Despite the coronavirus crisis, container traffic once again recorded stronger volumes after a difficult second quarter. Growing global protectionism and the associated trade problems weighed negatively on conventional cargo flows. Steel, in particular, the main commodity in this segment, felt the impact. The automotive sector also suffered from the coronavirus crisis, triggering a 9.4% decline in roll-on roll-off traffic. The growing supply of green energy and reduced demand for coal and ores from the steel sector explained the decline in dry bulk transshipments (-17%). Liquid bulk also fell (-4.2%), partly due to lower refining activities.

In 2021, the volume of freight loaded or unloaded in Antwerp rose by 3.8% to 239.8 million tonnes, exceeding the pre-pandemic level in 2019. The growth was fuelled by rising volumes of liquid bulk (+3.2%), dry bulk (+15.4%), conventional cargo (+73.6%) and RoRo (+13.9%), while container traffic fell slowly as global containerised liner shipping was still suffering major disruption. The rise in liquid bulk resulted from a strong increase in gasoline throughput partly countered by the decline in diesel and fuel volumes. The throughput of chemicals had its best year ever. The higher volumes of dry bulk came in particular from fertilisers due to price developments. The growing transshipment in conventional cargo was explained by the strong throughput of steel, the main product type in this segment.

TABLE 16 MARITIME TRAFFIC AT THE PORT OF ANTWERP
(in millions of tonnes)

	2018	2019	2020	2021	Change (%) 2019-2020	Change (%) 2020-2021	Share (%) 2020	Share (%) 2021
Containers	130.9	138.7	139.1	138.4	0.3	-0.5	60.2	57.7
Roll-on roll-off	5.3	5.1	4.6	5.3	-9.4	13.9	2.0	2.2
Conventional cargo	10.2	8.3	6.6	11.5	-20.6	73.6	2.9	4.8
Liquid bulk	75.9	72.1	69.0	71.2	-4.2	3.2	29.9	29.7
Dry bulk	13.1	13.9	11.6	13.3	-17.0	15.4	5.0	5.6
Total	235.3	238.2	231.0	239.8	-3.0	3.8		

Source: Port authority.

Container handling plays a major role in the port of Antwerp. The trend to put as much as possible in containers (from fruit to steel) continues unabated. For several years now, the Antwerp Port Authority has been warning that container capacity will very soon reach its limit, so extra container handling capacity is urgently needed. In order to cope with the expected growth of container traffic, the Flemish government wants to provide additional possibilities for container handling in the port area of Antwerp. The ECA project (**Extra Container handling capacity in port of Antwerp**) was launched in 2016. The project also pursues a modal shift in which commodities increasingly have to be transported by barge and rail to reduce emissions and optimise the connection with the hinterland, valuable for both the economy and the environment. In December 2019, the Flemish government approved a final Preferential Decision for the ECA project, with which several parties did not agree. The opponents asked the Council of State to throw out this Preferential Decision. For one of the three requests, the auditor of the Council of State recommended scrapping the Preferential Decision (May 2021) since there are too few guarantees that the ECA project will not have an adverse impact on a number of nature reserves due to nitrogen deposition. **On 30 March 2022, an agreement was reached between the pressure groups and the port industry.** In return for giving Doel a residential function, 200 hectares of agricultural land, 665

hectares of nature reserve, guarantees against freight traffic and cut-through traffic, a water bus connection and investments in heritage, the Council of State proceedings against the ECA project are being dropped. So, the ECA project can be continued with the Flemish government aiming for a decision by 2024; to reach the implementation phase for the new tidal dock, connected to Deurganck dock.

An important milestone in the unification project between the port of Antwerp and Zeebrugge, was the approval for the new merged port by the Belgian Competition Authority, in mid-January 2022. The official launch date of the Port of Antwerp-Bruges was the end of April 2022. By joining forces, the two ports hope to compete better with other international ports and be “more resilient to the challenges of the future”. Combining the industrial cluster in Antwerp and Zeebrugge’s location on the coast creates an opportunity to tackle Flanders’ energy challenges. In the unified port, freight transport by rail will be bundled between the two locations, estuary traffic will be optimised and connections made via pipelines. The two ports have set three strategic priorities: sustainable growth, resilience and leadership in the energy and digital transition. In the merged port, Antwerp will continue to focus on containers and chemicals.

In November 2021, Port of Antwerp, Port of Zeebrugge and the Chilean Ministry of Energy signed a Memorandum of Understanding (MoU) in which they committed to working together to **make green hydrogen flows between Chile and Western Europe** a reality. This cooperation will help to break down the last barriers to the effective start-up of green production and the setting up of the logistics chain between the continents and the logistics in the Belgian seaports and their hinterland. This partnership is crucial for the **Hydrogen Coalition**, in which seven major players (Deme, Engie, Exmar, Fluxys, Port of Antwerp, Port of Zeebrugge and WaterstofNet) joined forces to launch concrete projects for the production, transport and storage of hydrogen in the future.

The **NextGen District** – an 88-hectare site that used to host the former General Motors plant at the Churchill dock – is being prepared by the Antwerp Port Authority for **sustainable and circular industrial** activity. The first concessionaires have officially signed up.

2.1.2 Value added

[Table 17](#) gives both direct and indirect value added generated at the port of Antwerp over the period 2015-2020, while [Table 4.1.1](#) in Annex 4 shows the details on a sectoral level, their respective shares and their changes over the years. Direct value added is broken down into a maritime and a non-maritime cluster, each further sub-divided into its contributing sectors. 65% of the value added created by the port of Antwerp came from the non-maritime sectors, especially from the chemicals industry (28%), trade (10%) and fuel production (9%). Cargo handling, a maritime cluster activity, also took a sizeable share of 16%. The last column in [Table 17](#) shows the contribution of each segment to total growth of value added in the port of Antwerp over the 2019-2020 period.

Direct value added in the port of Antwerp grew by 1% in 2020. The rise came from the maritime cluster (contribution of 2.1 p.p.), mainly from the **shipping companies’ higher value added** due to the record year Euronav enjoyed in 2020 with both turnover and operating result peaking. Euronav is a tanker shipping company that provides shipping and storage of crude oil and petroleum products. The basis for those record figures was laid in the first quarter of 2020 when tanker freight rates and oil prices were very high. Geopolitical risks pushed up freight rates and oil prices with a robust winter bolstering crude oil demand until the end of the first quarter. In those first months in 2020, freight rates rose to over USD 100 000 per day, reflecting a shortage of shipping capacity to manage the increasing demand for tanker freight transport, while by late 2020, Euronav struggled with weak demand for crude oil and oversupply of tanker ships, putting heavy pressure on tanker freight rates.

TABLE 17 VALUE ADDED AT THE PORT OF ANTWERP
(in € million)

	2015	2016	2017	2018	2019	2020	Contribution to growth (p.p.) ¹ 2019-2020
Cargo handling	1 654.1	1 701.7	1 778.6	1 774.3	1 808.1	1 805.4	0.0
Shipping companies	656.4	582.3	355.2	338.5	605.5	800.1	1.8
Shipping agents and forwarders	633.3	609.5	615.6	606.3	596.5	605.5	0.1
Other maritime	741.6	709.2	728.5	701.8	690.8	717.6	0.2
Maritime	3 685.4	3 602.7	3 477.8	3 420.9	3 701.0	3 928.7	2.1
Chemicals industry	3 421.8	3 165.0	3 671.5	3 730.5	3 148.0	3 124.2	-0.2
Trade	901.7	999.2	1 077.2	1 116.0	1 167.6	1 062.7	-0.9
Fuel production	1 063.4	1 066.6	1 258.4	1 016.0	1 045.6	1 005.9	-0.4
Other non-maritime	1 790.0	1 857.7	1 937.2	1 846.4	1 998.7	2 054.7	0.5
Non-maritime	7 176.9	7 088.6	7 944.3	7 709.0	7 359.9	7 247.5	-1.0
Direct	10 862.4	10 691.3	11 422.1	11 129.9	11 060.8	11 176.2	1.0 ²
Indirect	8 233.1	7 777.0	8 007.1	7 870.2	7 816.2	7 713.3	
Total	19 095.5	18 468.3	19 429.1	19 000.1	18 877.0	18 889.5	

Source: NBB.

¹ For a definition of contribution to growth in percentage points, see [Annex 2.1](#).

² Percentage change compared to the previous year.

The non-maritime cluster contributed negatively (-1 p.p.) to total growth, mainly evident from the drop in trade (contribution to growth of -0.9 p.p.), **fuel production** (share of -0.4 p.p.) and **chemicals industry** (part of -0.2 p.p.).

As big **trading companies** in fuels, Kuwait Petroleum Belgium and Total Belgium suffered a substantial drop in their value added resulting from lower excise duties – as an element of other operating expenses – on lower fuel volumes sold. SQM Europe, a distributor of the Chilean group SQM's chemical products, also suffered a fall in its operating result and thus in its value added due to lower volumes sold and lower sales prices. 2020 was marked by reduced demand for motor fuels with the pandemic-related slowdown in road passenger and freight transport and lower demand for chemical products from customers that had to close, especially during the first half of the year.

There were contrasting trends in the **fuel production sector**. The coronavirus crisis led to a sharp drop in demand for petroleum products, one of the commodities produced by Exxonmobil Petroleum & Chemical, resulting in significantly lower sales margins and volumes, a lower operating result and a sharp decline in the company's value added. TotalEnergies Refinery Antwerp, Belgium's largest refinery where crude oil is processed into various petroleum products (fuel oil, petrol, LPG, etc.) and basic raw materials, also recorded a reduction in value added as a result of a write-back of provisions and reduced depreciations. These lower figures were largely offset by Gunvor Petroleum Antwerp's sharp increase in value added after large additional extraordinary depreciations of company assets and compensations for laid-off employees. The pandemic and the adverse macroeconomic effects on the European refining sectors were behind the company losing its contract for custom work, which led to thorough restructuring with the Gunvor Group deciding to mothball the refinery and only keep the terminal activities going.

Most **chemicals industry firms** experienced only a small decline in value added between 2019 and 2020 because of lower operating profits coming from lower returns, although sales volumes of some chemical products remained quite stable. However, sales prices were down as the cost of raw materials and energy fell. As an exception to most chemical industrial companies, INEOS Olefins Belgium's value added rose sharply in 2020, on the back of high depreciation costs²⁶ as it was decided in November 2020 to stop the

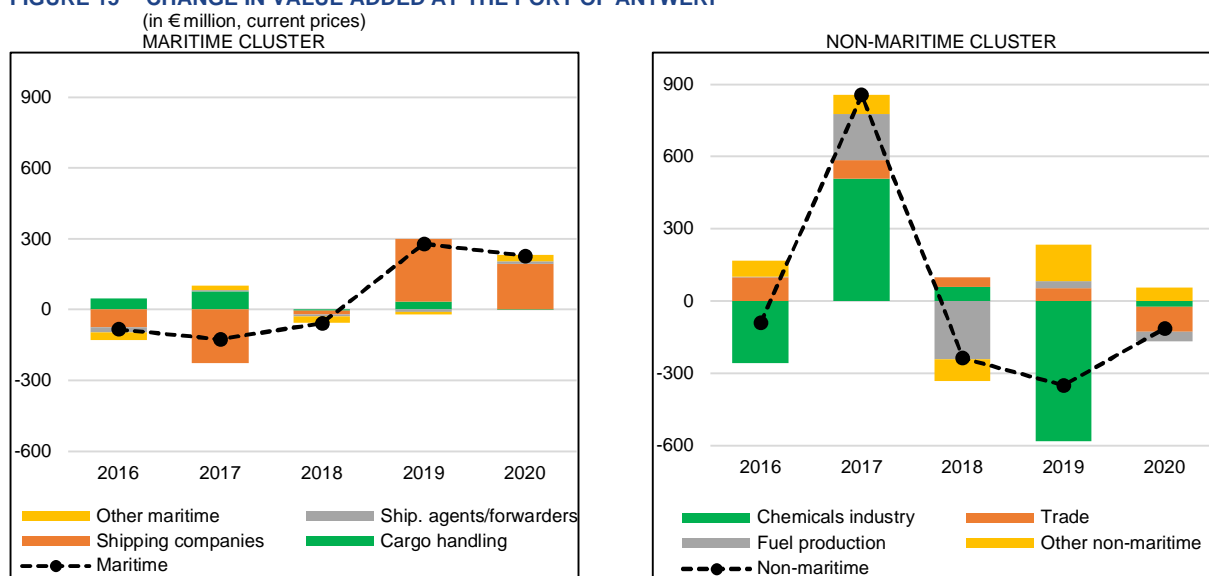
²⁶ INEOS Olefins Belgium was established in December 2018 to build and operate a new petrochemical complex in the port area of Antwerp, with a propane dehydrogenation (PDH) unit and an ethane cracker, including associated tanks, infrastructure and

propane dehydrogenation part in the construction of a new petrochemical complex and to quickly amortise all investment costs involved.

The **positive contribution of the energy sector** (+0.6 p.p.), as a component of other non-maritime branches, can be explained by a better operating result and thus more value added from Electrabel, mainly due to a rise in the price of electricity and an increase in the volumes sold on the wholesale electricity markets, partially offset by lower gas sales and lower revenue from marketing.

Although direct value added was up slightly in 2020, indirect value added fell, largely attributable to fuel production, whose multiplier is larger than that in other branches. This led to even lower value added in its supplier branches.

FIGURE 15 CHANGE IN VALUE ADDED AT THE PORT OF ANTWERP



Source: NBB.

TABLE 18 TOP 10 VALUE ADDED AT THE PORT OF ANTWERP

Rank	Name	Sector
1	BASF Antwerpen	Chemicals industry
2	Kuwait Petroleum (Belgium)	Trade
3	Centrale der Werkgevers aan de Haven van Antwerpen	Cargo handling
4	Euronav	Shipping companies
5	TotalEnergies Refinery Antwerp	Fuel production
6	Exxonmobil Petroleum & Chemical	Fuel production
7	Gunvor Petroleum Antwerpen	Fuel production
8	Electrabel	Energy
9	Dredging International	Port construction and dredging
10	Antwerp Port Authority	Port authority

Source: NBB.

The ten biggest companies in terms of value added, listed in [Table 18](#), accounted for 43% of the direct value added generated in the port of Antwerp in 2020, while direct value added accounted for 4.2% of

utilities. The company had an interim service agreement with INEOS Europe AG so that the company could recover all costs from it until the complex became operational. As a result of the pandemic, it was decided in November 2020 to stop and scrap the PDH part of the construction project. Consequently, all the costs involved, including those related to infrastructure and logistics, were quickly amortised (€ 120 million) to bring the value of this investment down to zero. This depreciation was invoiced to INEOS Europe AG under the service agreement, which explained the company's high added value in 2020.

GDP in the Flemish Region or 2.4% of Belgian GDP in 2020. Total value added (including direct and indirect effects) accounted for 4.1% of Belgian GDP.

2.1.3 Employment

[Table 19](#) shows direct and indirect employment²⁷ at the port of Antwerp over the period 2015-2020. While value added grew slowly, **direct employment remained quite stable** in 2020. The maritime cluster enjoyed a small increase (+43 FTEs) as did the non-maritime cluster (+16 FTEs). 44% of the workforce at the port of Antwerp is employed in the maritime segment (compared to 35% of value added), while 56% is employed in the non-maritime part (compared to 65% of value added).

Cargo handling was the leading employer in 2020, providing more than a quarter of direct employment. The chemicals industry followed in second place with 18%, tracked by shipping agents and freight forwarders (10%) and other logistic services (9%). While the maritime and non-maritime clusters' shares of total employment were relatively stable in the 2015-2020 period, cargo handling and other logistic services saw their shares grow slowly.

TABLE 19 EMPLOYMENT AT THE PORT OF ANTWERP
(in FTEs)

	2015	2016	2017	2018	2019	2020	Contribution to growth (p.p.) ¹ 2019-2020
Cargo handling	13 671	13 893	14 341	15 050	15 726	15 889	0.3
Shipping agents and forwarders	6 687	6 596	6 570	6 421	6 173	6 018	-0.2
Public sector	1 745	1 740	1 699	1 669	1 766	1 752	0.0
Other maritime	4 006	4 178	4 050	4 147	4 233	4 281	0.1
Maritime	26 108	26 406	26 661	27 287	27 897	27 940	0.1
Chemicals industry	10 800	10 873	10 979	11 281	11 486	11 717	0.4
Other logistic services	4 351	4 627	5 244	5 477	5 637	5 495	-0.2
Fuel production	2 751	2 752	2 904	2 873	2 917	2 905	0.0
Other non-maritime	14 977	14 698	14 901	14 478	14 785	14 724	-0.1
Non-maritime	32 878	32 950	34 027	34 110	34 825	34 841	0.0
Direct	58 987	59 356	60 688	61 397	62 722	62 781	0.1 ²
Indirect	72 848	72 906	75 235	78 381	79 687	79 166	
Total	131 835	132 262	135 923	139 778	142 409	141 947	

Source: NBB.

¹ For a definition of contribution to growth in percentage points, see [Annex 2.1](#).

² Percentage change compared to the previous year.

Total direct employment change was minimal (+0.1%) in 2020 due to offsetting changes between branches. Some growth was evident in cargo handling and the chemicals industry, contributing respectively 0.3 p.p. and 0.4 p.p. to total change, while a decline in employment occurred in the shipping agents and forwarders branch (contribution of -0.2 p.p. to total evolution) and in other logistic services (contribution of - 0.2 p.p.).

The biggest contribution came from the **chemicals industry** mainly resulting from higher employment in BASF Antwerpen and Borealis Kallo. The former continued to focus on sustainable growth and innovation by expanding production capacity of ethylene oxide and its derivatives, which required the use of substantial resources. The latter, as custom worker for the Borealis AG group, had to produce more polypropylene, for which some extra workers were required.

The additional jobs in **cargo handling** reflected more staff recruitments by General Services Antwerp, a sister company of Katoen Natie and some extra recruitments of dockers by the employers' organisation

²⁷ Details on sectoral level, their respective shares and their changes over the years are shown in [table 4.1.2](#) in Annex 4.

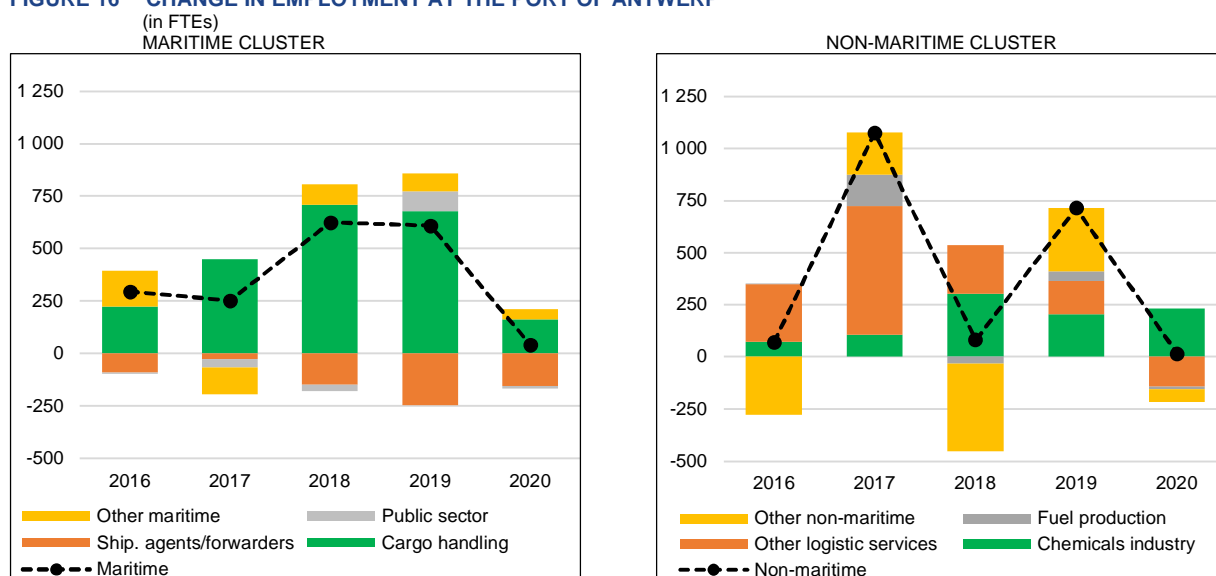
CEPA despite the decline in maritime traffic in the port of Antwerp in 2020. The few extra hirings were to cover part of the natural outflow and to maintain the pool of dock workers.

The job losses in **other logistic services** were derived from a good many firms active in this branch cutting back their staff numbers. In addition, in mid-2020, BASF Belgium Coordination Center, which finances the activities of the German BASF Group, split part of its activity which it transferred to a company located outside the Antwerp port area. Those aggregate jobs losses were partly countered by the relocation of the business unit of TEC, a provider of technical expertise for projects in different sectors, moving into the geographical site of the port of Antwerp.

The fall in **shipping agents and forwarders** was partly due to Panalpina World Transport, whose seafreight division was taken over by DSV Air & Sea. The acquiring company decommissioned some old Panalpina IT systems, resulting in job cuts. As Handico International lost its biggest client in 2019, the company decided to close its activity as 'empty container depot and container repairs' and just kept on its Container Freight Station business, which implied the (un)loading of containers and lorries and freight handling and storage. The result was job losses. Additionally, several small and mid-sized freight forwarders and shipping agents had to stop their activity in 2020 because liner shipping companies distorted the supply chain with blank sailings, disrupted sailing schedules and a lack of cargo space, as a first response to lower demand for freight traffic by sea in the first half of 2020 to mitigate costs, manage capacity and sustain freight rates. Moreover, container shipping companies imposed one-sided tariffs that were much higher than contractually agreed. So many smaller shipping agents and those with low-value paying cargo found it harder to secure their service contracts and were less able to absorb the extra expenses.

In 2020, indirect employment fell, although direct employment remained stable. The main branches responsible were fuel production and shipping agents and forwarders. Fuel production has a very high multiplier, meaning that a small decline in direct employment generates a much bigger cut in jobs in its supplier sectors.

FIGURE 16 CHANGE IN EMPLOYMENT AT THE PORT OF ANTWERP



Source: NBB.

In 2020, the top ten companies in terms of employment ([Table 20](#)) accounted for 37% of total direct employment at the port of Antwerp.

Total direct employment there accounted for 2.5% of all employment in the Flemish Region and 1.5% of Belgian domestic employment in 2020. Total employment, including indirect jobs, accounted for 3.3% of Belgian domestic employment.

TABLE 20 TOP 10 EMPLOYMENT AT THE PORT OF ANTWERP

Rank	Name	Sector
1	Centrale der Werkgevers aan de Haven van Antwerpen	Cargo handling
2	BASF Antwerpen	Chemicals industry
3	Public sector	Public sector
4	Antwerp Port Authority	Port authority
5	General Services Antwerp	Cargo handling
6	Exxonmobil Petroleum & Chemical	Fuel production
7	TotalEnergies Refinery Antwerp	Fuel production
8	Dredging International	Port construction and dredging
9	Evonik Antwerpen	Chemicals industry
10	Electrabel	Energy

Source: NBB.

2.1.4 Investment

[Table 21](#) shows investment²⁸ at the port of Antwerp over the 2015-2020 period. On the back of an investment figure that bounced back in 2019²⁹, it grew again to settle at € 3 293.2 million in 2020. Investment was mainly driven by the chemicals industry (37%), cargo handling (16%) and shipping companies (11%).

TABLE 21 INVESTMENT AT THE PORT OF ANTWERP
(in € million)

	2015	2016	2017	2018	2019	2020	Contribution to growth (p.p.) ¹ 2019-2020
Cargo handling	438.4	497.0	565.9	723.5	604.6	539.8	-2.1
Shipping companies	566.0	719.1	374.7	1 550.8	482.1	353.9	-4.2
Port construction and dredging	70.6	34.4	334.9	230.5	274.3	208.3	-2.1
Other maritime	185.6	210.3	144.0	190.3	173.4	240.0	2.2
Maritime	1 260.7	1 460.7	1 419.5	2 695.1	1 534.3	1 342.0	-6.2
Chemicals industry	690.8	791.7	804.8	1 118.9	869.3	1 237.2	12.0
Fuel production	525.3	616.7	433.6	242.9	208.5	226.1	0.6
Energy	167.5	142.1	249.2	280.3	139.9	172.4	1.1
Other non-maritime	267.7	283.8	365.0	386.2	326.4	315.6	-0.4
Non-maritime	1 651.3	1 834.2	1 852.7	2 028.3	1 544.0	1 951.2	13.2
Direct	2 912.0	3 295.0	3 272.2	4 723.4	3 078.4	3 293.2	7.0 ²

Source: NBB.

¹ For a definition of contribution to growth in percentage points, see [Annex 2.1](#).² Percentage change compared to the previous year.

Investment grew by 7% in 2020. The biggest contribution to this rise came from the chemicals industry (contribution of 12 p.p.) due to higher investment volumes in Borealis Kallo and INEOS Olefins Belgium. Borealis Kallo significantly boosted its investment to expand capacity at its propylene factories. The propane dehydrogenation plant that is being built will convert propane gas into propylene, one of the basic building blocks in the chemicals sector. One of the most important applications is poly-propylene, the hard plastic used for car bumpers, packaging, syringes, vacuum cleaners and bread boxes. In 2020, INEOS Olefins Belgium started investing in the construction of a new petrochemicals complex in the port

²⁸ Details on a sectoral level are visible in [table 4.1.3](#) in Annex 4.²⁹ Euronav, a tanker shipping company, concluded in June 2018 the merger with Gener8 Maritime, a US-based crude oil shipping company. Integrating the Gener8 vessels into the Euronav fleet turned Euronav into a leading independent large crude tanker operator on world level. This event explains the huge growth in investment in the port of Antwerp in 2018.

area of Antwerp, with an ethane cracker, associated tanks, infrastructure and utilities. The construction project is expected to be finalized in 2026. BASF Antwerpen also invested heavily in 2020, its main projects being further optimisation of the steam cracker supply chain, expansion of the production capacity for ethylene oxide and its derivatives, as well as raising safety standards at the caprolactam plant.

Other branches contributed positively, too. In 2020, the **public sector**, as a component of “other maritime sectors” **stepped up its investment** (contribution of 2.4 p.p. to total growth) linked to the new Royers lock project. Construction work should be completed in 2025. The lock dates back to 1907 and will be replaced to obtain a longer and wider passage for inland waterway transport.

The contribution of the **energy sector** was positive (+1.1 p.p.) partly thanks to the E-Wood power plant. This new entity, established in late 2019, invested a huge amount for the construction of a thermal processing facility where wood waste will be treated thermally via fluidised bed technology. The heat that comes from thermal treatment will be recovered in a steam boiler. A turbine generator will convert the steam into electricity which will be supplied to Flemish electricity grid as green electricity. Deployment of the installation is expected in the second half of 2022.

Some sectors saw their investment fall in 2020, especially some maritime branches.

The **shipping companies** contributed a negative -4.2 p.p. to investment growth in 2020, due to lower investment by CMB (Compagnie Maritime Belge), after extra investment in 2019 by buying container and capesize ships³⁰. In general terms, the shipping companies segment has fluctuated the most over time, since investing in shipping companies involves purchasing and leasing new or second-hand vessels and either operating them directly or chartering them to other operators. Other shipping companies, such as Euronav and Exmar Shipping, raised their investment levels in 2020 compared to 2019, the former to continue its ship fleet rejuvenation through the purchase of some eco-VLCCs (very large crude carriers), the latter to buy the vessel Wépion.

Cargo handling made a negative contribution of -2.1 p.p. to the change in total investment due to lower investment levels by SEA-Tank 700B and ATPC (Antwerp Terminal and Processing Company) in 2020 than the year before. In both companies, investment figures fell back after construction projects were finalised. Between 2017 and 2019, SEA-Tank 700B – part of the SEA-invest Group established in Ghent – invested in the construction of a tank terminal for liquid chemicals in the Delwaide dock. In 2019, ATPC completed its investment in the construction of an LPG-ethane tank storage park. Some other cargo handlers increased their investment volumes in 2020. Tank storage company Vopak Chemical Terminals Belgium, for example, invested in a project with Terra Inspectioneering, to inspect the walls of its storage tanks via drones to replace the traditional checks done by inspectors. Drones can inspect poorly accessible and dangerous areas in a safer and faster way using ultrasound measurements and deformation analyses, the latter to determine whether the shape of a construction has changed over time.

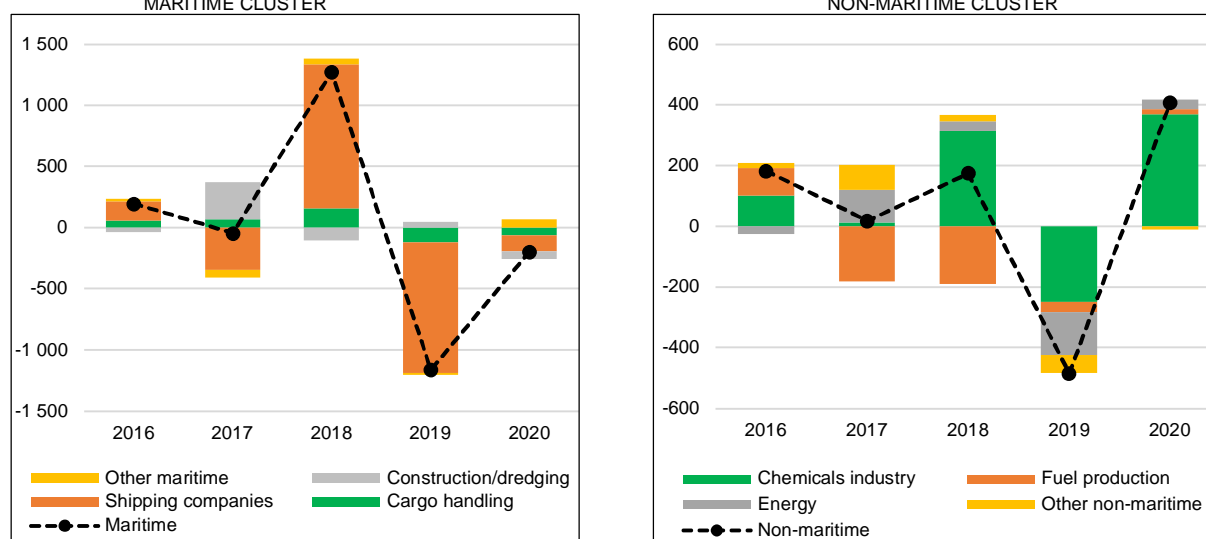
Port construction and dredging contributed -2.1 p.p. to total investment evolution in 2020 due to falling investment by DEME after a strong effort in 2019, when the company invested in Spartacus, the most powerful and environmentally-friendly cutter suction dredger ever.

The pattern of investment is closely linked to individual projects and is therefore highly volatile, so the figures need to be interpreted with care. The top ten companies in terms of investment in the port of Antwerp are listed in [Table 22](#) and together accounted for 47% of all direct investment in the port in 2020.

³⁰ “Capesize” is the largest class of bulkship that can carry any type of cargo. They are called “capesize” ships as they cannot pass through the Panama Canal and have to go around the Cape of Good Hope to sail between the Pacific and Atlantic oceans.

FIGURE 17 CHANGE IN INVESTMENT AT THE PORT OF ANTWERP

(in € million, current prices)



Source: NBB.

TABLE 22 TOP 10 INVESTMENT AT THE PORT OF ANTWERP

Rank	Name	Sector
1	Borealis Kallo	Chemicals industry
2	BASF Antwerpen	Chemicals industry
3	Euronav	Shipping companies
4	INEOS Olefins Belgium	Chemicals industry
5	Dredging International	Port construction and dredging
6	Electrabel	Energy
7	Public sector	Public sector
8	Oiltanking Antwerp Gas Terminal	Cargo handling
9	Antwerp Terminal & Processing Company - Terminal	Fuel production
10	Antwerp Port Authority	Port authority

Source: NBB.

2.2 North Sea Port Flanders

2.2.1 Port developments

North Sea Port Flanders is the Belgian port site of the merged North Sea Port³¹, that stretches from Vlissingen on the North Sea coast in the Netherlands, some 32 kilometres inland to Ghent in Belgium. [Table 23](#) illustrates that the port of Ghent is the main Flemish port for dry bulk, handling a volume of **19.9 million tonnes in 2021**. Liquid bulk also had a big share of 17% in 2021, comprising the transshipment of petroleum products, biodiesel, chemicals, liquid fertilisers, fruit juice and gases.

TABLE 23 MARITIME TRAFFIC AT NORTH SEA PORT FLANDERS
(in millions of tonnes)

	2018	2019	2020	2021	Change (%) 2019-2020	Change (%) 2020-2021	Share (%) 2020	Share (%) 2021
Containers	0.2	0.3	0.4	0.5	3.8	28.5	1.2	1.4
Roll-on roll-off	2.3	2.1	2.0	2.5	-7.7	29.2	6.8	8.1
Conventional cargo	3.8	3.6	3.1	3.1	-14.2	1.0	10.6	9.9
Liquid bulk	5.4	6.2	4.5	5.4	-26.1	19.3	15.6	17.3
Dry bulk	20.8	20.2	19.1	19.9	-5.5	4.1	65.7	63.3
Total	32.6	32.5	29.1	31.5	-10.4	8.1		

Source: Port authority.

The lower maritime traffic volumes in 2020 (-10.4%) resulted from the COVID-19 pandemic, uncertainties about Brexit and the oil crisis. 2020 was a difficult year for the liquefied petroleum industry, which partly explained the drop in liquid bulk (-26.1%). The fall in dry bulk (-5.5%) was down to smaller inputs of coal and iron ores for steel producers, while reduced traffic in conventional cargo (-14.2%) came from lower imports of slabs whilst the economy was temporarily shut down.

In **2021, a revival in maritime traffic (total growth of +8.1%) was evident for each cargo type.** The increase in **dry bulk** (+4.1%) resulted from a growing share of agricultural products, extra demand for building materials and rising inflows of iron ores thanks to the recovery in the steel market. The growth in **liquid bulk** (+19.3%) was due to expanding trade in liquid vegetable oils and a tentative recovery in the still heavily distorted petroleum market. **Conventional cargo** traffic (+1%) remained quite stable compared to 2020, although still 13% lower than the 2019 figure, notably in the case of metal products such as slabs (semi-finished products of iron and steel) and sheet steel. This trend is no surprise as available feedstock was still sufficient for production in 2021, subject to many ups and downs due to high coronavirus infection rates among employees. Additionally, alternative transport modes were used more often during the pandemic. The RoRo connection between Ghent and Göteborg resumed in 2021, while the occupancy rate on this route also increased, explaining the rise in **RoRo** transport (+29.2%). The growth in **container** volumes (+28.5%) came from a further expansion of container services with the UK.

The construction of **the new lock in Terneuzen** is in full swing, expected to be operational from 2023. With the arrival of the new lock, larger seagoing vessels can sail up to the port of Ghent through the Ghent-Terneuzen Canal. Also, the capacity of the lock will increase³², reducing the waiting time for inland vessels.

³¹ On 1 January 2018, the Belgian port of Ghent merged with the Dutch Zeeland Seaports Vlissingen and Terneuzen, called North Sea Port.

³² The lock will be 427 metres long and 55 metres wide.

The **new AWT (All-Weather Terminal³³)**, owned by AWT Gent, **has been operational since the last quarter of 2020**. Thanks to the new terminal, loading high-quality steel is now possible 24 hours a day, regardless of weather conditions, which enables ArcelorMittal Belgium to better distribute the delivery of steel from its shipping halls in Ghent to the quay, as to optimise the internal logistics process. In this way, up to 25 000 truck transport movements per year can be avoided.

The **automotive sector is an important pillar for North Sea Port**: Volvo Cars Gent generates important flows of parts and finished products, while Volvo Truck operates a large assembly plant and Honda runs an important logistics hub. Close cooperation between the car manufacturer Volvo Cars, Danish shipping company DFDS and Belgian rail freight operator Lineas brings the different transport modes (ship, train, truck) together in a more efficient way. The turnaround time for transporting Volvo passenger cars from the factory to their final destination is now up to 30% faster thanks to better rail links following the construction of a brand-new rail terminal at the V6 terminal.

The port authority wants to see the North Sea Port grow into a major European port, for which it has developed a strategic plan – the **Connect 2025 plan** – in which eight key ideas are crucial: investing in circular value chains, in energy projects, in climate, strong logistics chains, future-proof infrastructure, digitalisation and data community, working with local stakeholders and acting as the connector between cooperating parties.

The **H2BE project** is proof that energy companies Engie and Equinor want to **develop the production of low-carbon hydrogen from natural gas** in Belgium. They are launching a feasibility study to analyse the technical and economic suitability of a location in Ghent in North Sea Port. They want to produce hydrogen from natural gas using autothermal reforming technology (ATR) in combination with carbon capture and storage (CCS). ATR technology can reduce CO₂ emissions by more than 95%, raising the prospect of hydrogen production on a large scale. The intention is to transport the captured CO₂ in liquid form and permanently and safely store it at a location beneath the North Sea near Norway. This H2BE project fits into the 'Connect 2025' strategic plan because it will speed up the transition to climate neutrality and the development of the required hydrogen and CO₂ infrastructure".

³³ The covered quay wall is 200 metres long at a 25-metre-wide dock. The pre-sorting zone is equipped with two automated travelling cranes. Besides that, there are two telescopic cranes for (un)loading the ships. The terminal also includes a warehouse with a storage capacity of 60 000 metric tonnes, two rails connected to the quay area and three fully automated travelling cranes for (un)loading and sorting materials. It involved an investment of €50 million. ArcelorMittal Ghent was not involved financially, but it had concluded a long-term agreement for the use of the terminal and will pay according to the volumes handled. North Sea Port provided the land that was needed for this in concession.

2.2.2 Value added

[Table 24](#) illustrates the direct and indirect value added³⁴ at the North Sea Port Flanders over the period 2015-2020. 91% of the value added generated at North Sea Port Flanders comes from the non-maritime sectors, especially from trade (24%), car manufacturing (20%) and the metalworking industry (15%). The last column in [Table 24](#) shows the contribution of each segment to total growth of value added at North Sea Port Flanders over the 2019-2020 period.

The port of Ghent's direct value added fell by 7.7% in 2020, attributable solely to the negative contribution of the non-maritime cluster (share of -8.2 p.p.), partly offset by cargo handling (contribution of +0.4 p.p. to total change).

TABLE 24 VALUE ADDED AT NORTH SEA PORT FLANDERS
(in € million)

	2015	2016	2017	2018	2019	2020	Contribution to growth (p.p.) ¹ 2019-2020
Cargo handling	221.0	241.4	250.1	255.7	252.3	270.0	0.4
Shipping agents and forwarders	33.0	32.0	40.1	35.2	33.8	34.4	0.0
Port authority	23.9	32.2	30.5	30.4	31.7	33.5	0.0
Other maritime	28.4	28.8	28.6	28.8	27.2	25.8	0.0
Maritime	306.3	334.4	349.3	350.1	345.0	363.7	0.4
Trade	822.8	905.9	978.0	1 052.2	1 107.3	977.7	-2.9
Car manufacturing	722.6	711.5	746.4	790.9	861.6	820.1	-0.9
Metalworking industry	774.3	835.6	1 056.7	957.0	786.2	641.8	-3.2
Other non-maritime	1 148.2	1 071.4	1 319.8	1 344.2	1 395.0	1 343.7	-1.1
Non-maritime	3 467.9	3 524.3	4 101.0	4 144.3	4 150.1	3 783.4	-8.2
Direct	3 774.1	3 858.7	4 450.3	4 494.4	4 495.1	4 147.1	-7.7 ²
Indirect	3 453.1	3 448.6	4 164.6	4 118.4	4 092.7	3 787.8	
Total	7 227.3	7 307.3	8 614.9	8 612.8	8 587.8	7 934.9	

Source: NBB.

¹ For a definition of contribution to growth in percentage points, see [Annex 2.1](#).

² Percentage change compared to the previous year.

The biggest fall has been in the metalworking industry (contribution of -3.2 p.p. to total change), **trade** (contribution of -2.9 p.p.), **car manufacturing** (contribution of -0.9 p.p.) and **the chemicals industry** (contribution of -0.6 p.p.) as part of "other non-maritime sectors".

The reduced value added in the metalworking industry came entirely from ArcelorMittal Belgium whose operating result was down – triggered by the lower demand for steel as a result of the COVID-19 crisis which in turn led to lower volumes sold and lower prices – while write-downs on inventories and trade receivables were reversed and provisions were written back. Additionally, ArcelorMittal Belgium adjusted its production capacity, which entailed lower labour costs due to temporary lay-offs.

Total Belgium, a big trading company in fuels, suffered a substantial drop in its value added resulting from lower excise duties – as an element of other operating expenses – because of lower fuel volumes sold. Car manufacturer Volvo Car Belgium was affected by lower operational profits partly the result of factory shutdowns during the lockdown months of March, April and May. Because of the pandemic, consumers kept postponing their car purchases. Nevertheless, the company started a new era in 2020 with the production of its first all-electric cars that rolled off the assembly line in Ghent in autumn 2020. Truck manufacturer, Volvo Group Belgium, experienced lower added value due to reduced labour costs, as many employees were put on temporary lay-off, especially during the first lockdown period. As Tenneco Automotive Gent was not kept on as supplier of equipment components for exhausts for Volvo Car Belgium, the company's operational activity was scaled back enormously in 2020. SNOP Automotive

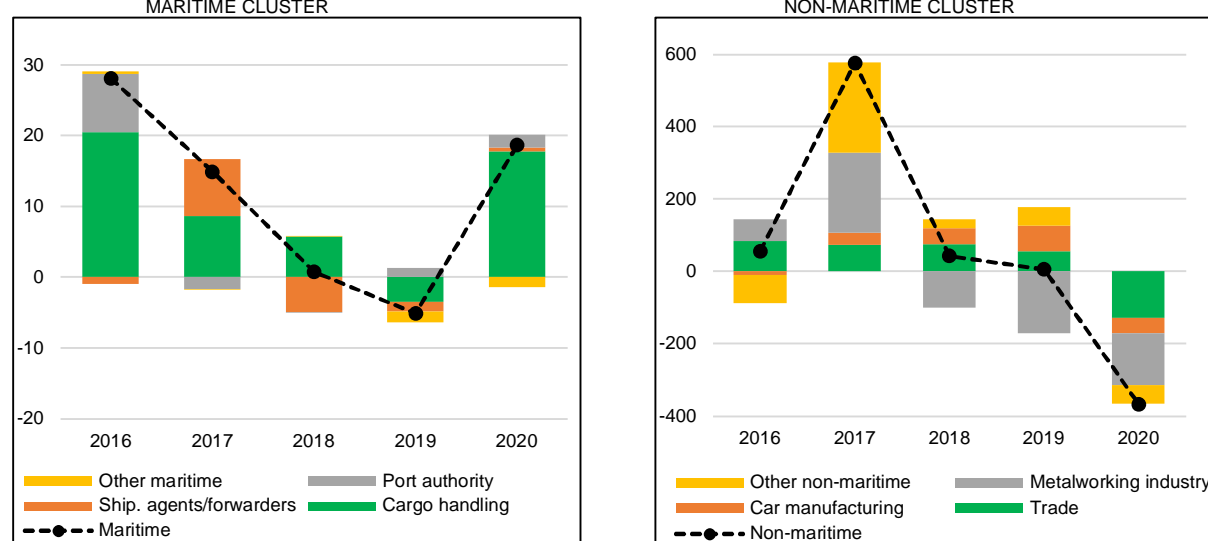
³⁴ [Table 4.2.1](#) in Annex 4 shows the details at sectoral level, their respective shares and their changes over the years.

Gent, an automotive supplier of metal parts and assemblies, had to stop its series production for the Volvo V40 model as well and manufactured only series production for the Audi E-tron model, resulting in fewer jobs and lower wage costs, explaining the falling value added.

The chemicals industry's negative contribution to total change came mainly from Kronos Europe and Oleon. The former, a producer of titanium dioxide – a substance that is added to many products to whiten them or give them more shine – suffered a substantial drop in its turnover because of lower volumes sold and lower sales prices, which reduced its operational profit and thus its value added figure. Oleon, a producer of green chemicals that converts natural fats and oils into a range of oleochemical products such as fatty acids, glycerine, technical oils, recorded a lower operating result in 2020 due to lower revenues from sales, since demand for its industrial products used as inputs for the automotive sector and allied industries was down.

FIGURE 18 CHANGE IN VALUE ADDED AT NORTH SEA PORT FLANDERS

(in € million, current prices)



Source: NBB.

TABLE 25 TOP 10 VALUE ADDED AT NORTH SEA PORT FLANDERS

Rank	Name	Sector
1	ArcelorMittal Belgium	Metalworking industry
2	TotalEnergies Marketing Belgium	Trade
3	Volvo Car Belgium	Car manufacturing
4	Belgian Shell	Trade
5	Volvo Group Belgium	Car manufacturing
6	Taminco	Chemicals industry
7	BP Europa SE	Fuel production
8	Stora Enso Langerbrugge	Other industries
9	Denys	Construction
10	Alco Bio Fuel	Fuel production

Source: NBB.

In 2020, the fall in indirect value added, following a similar pace to the decrease in direct value added, was largely attributable to the metalworking industry, whose reduction in direct value added generated an even bigger loss in the supplier sectors' value added, since this branch has a higher multiplier than the other segments.

The ten biggest companies in terms of value added, mentioned in [Table 25](#), represent 62% of the direct value added generated at North Sea Port Flanders in 2020. The total direct value added created at North Sea Port Flanders in 2020 accounted for 0.9% of Belgian GDP or 1.6% of the Flemish Region's GDP in 2020. Total value added (including indirect effects as well) accounted for 1.7% of Belgian GDP.

2.2.3 Employment

Direct employment³⁵ at North Sea Port Flanders dropped by 86 FTEs in 2020 (-0.3%). [Table 26](#) shows that the fall was mainly in the non-maritime cluster, which generated most of the employment at North Sea Port Flanders (90% in 2020). One-third of the jobs came from car manufacturing and one-fifth from the metalworking industry.

Direct employment in North Sea Port Flanders fell slightly by 0.3% in 2020, mainly explained by drops in construction, trade and other logistic services (all components of the other non-maritime branches), respectively contributing -0.3 p.p., -0.2 p.p. and - 0.2 p.p. to the total decline. The fall in construction was mainly due to the relocation of a supplier of doors and partitions (Eribel) outside the port area of Ghent. The job losses in trade were derived from a good many trade firms cutting back their staff numbers, together with the movement of a trader in aluminium profiles outside the geographical site of the port of Ghent. A similar explanation accounted for the drop in employment in other logistic services.

Employment levels stayed stable in the car manufacturing owing to offsetting changes within the branch. While SNOP Automotive and Tennexo Automotive Gent reduced their staff because these suppliers of automotive parts could not renew their contracts with Volvo Cars Belgium, Volvo Cars Belgium itself created additional jobs thanks to the production of its first all-electric car, from autumn 2020, and stepped up its production capacity to increase the number of finished electric cars.

TABLE 26 EMPLOYMENT AT NORTH SEA PORT FLANDERS
(in FTEs)

	2015	2016	2017	2018	2019	2020	Contribution to growth (p.p.) ¹ 2019-2020
Cargo handling	1 719	1 908	1 948	2 116	2 154	2 193	0.1
Shipping agents and forwarders	328	329	389	386	404	415	0.0
Public sector	228	211	214	196	193	191	0.0
Other maritime	197	194	185	179	171	166	0.0
Maritime	2 473	2 642	2 735	2 876	2 922	2 964	0.1
Car manufacturing	9 544	9 386	9 358	9 504	9 673	9 671	0.0
Metalworking industry	6 018	6 152	6 030	5 828	5 820	5 790	-0.1
Chemicals industry	2 109	2 145	2 176	2 241	2 299	2 325	0.1
Other non-maritime	7 331	7 472	7 941	8 077	8 249	8 127	-0.4
Non-maritime	25 002	25 155	25 505	25 649	26 042	25 913	-0.4
Direct	27 475	27 797	28 241	28 526	28 963	28 877	-0.3 ²
Indirect	31 106	31 836	33 453	34 391	35 801	35 780	
Total	58 581	59 633	61 693	62 917	64 765	64 657	

Source: NBB.

¹ For a definition of contribution to growth in percentage points, see [Annex 2.1](#).

² Percentage change compared to the previous year.

In 2020, indirect employment at North Sea Port Flanders went down slightly (-21 FTEs). Construction and trade were the main branches losing jobs in their supplier sectors.

³⁵ [Table 4.2.2](#) in Annex 4 shows detailed employment figures at the port of Gent, together with the respective shares of the branches and their change over time.

The top ten companies in terms of employment accounted for 58% of total direct employment at North Sea Port Flanders in 2020. Total direct employment represented 1.1% of all employment in the Flemish Region and 0.7% of Belgian domestic employment. Total employment, including indirect jobs, accounted for 1.5% of Belgian domestic employment.

FIGURE 19 CHANGE IN EMPLOYMENT AT NORTH SEA PORT FLANDERS

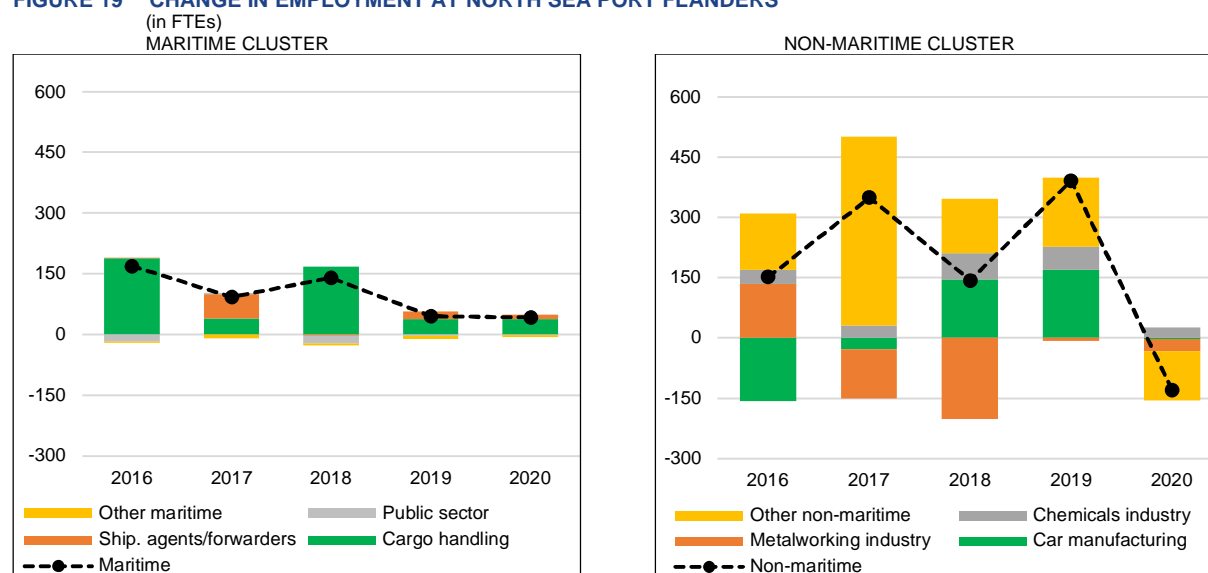


TABLE 27 TOP 10 EMPLOYMENT AT NORTH SEA PORT FLANDERS

Rank	Name	Sector
1	Volvo Car Belgium	Car manufacturing
2	ArcelorMittal Belgium	Metalworking industry
3	Volvo Group Belgium	Car manufacturing
4	Denys	Construction
5	Centrale Betaalkassen der Gentse Centrale der Zee- en Binnenvaartwerkghevers	Cargo handling
6	Honda Motor Europe Logistics	Trade
7	Ghent Handling and Distribution	Cargo handling
8	Taminco	Chemicals industry
9	Stora Enso Langerbrugge	Other industries
10	Oleon	Chemicals industry

Source: NBB.

2.2.4 Investment

[Table 28](#) gives an overview of the investment volumes at the port of Ghent³⁶ over the 2015-2020 period. 79% of all investment at North Sea Port Flanders in 2020 went into the non-maritime cluster, especially car manufacturing (one-fifth), the metalworking industry (17%) and chemicals (15%). Investment in the maritime cluster was mainly driven by cargo handling (13%).

TABLE 28 INVESTMENT AT NORTH SEA PORT FLANDERS
(in € million)

	2015	2016	2017	2018	2019	2020	Contribution to growth (p.p.) ¹ 2019-2020
Cargo handling	32.7	71.4	109.9	54.8	101.5	92.7	-1.1
Port authority	8.5	8.6	11.7	17.7	34.8	32.6	-0.3
Shipping agents and forwarders	1.7	4.4	1.6	6.9	22.8	11.4	-1.4
Other maritime	11.2	19.1	11.5	4.9	8.2	6.6	-0.2
Maritime	54.0	103.4	134.7	84.4	167.3	143.3	-3.0
Car manufacturing	53.4	116.0	191.5	120.6	151.6	136.1	-1.9
Metalworking industry	84.3	122.1	159.3	73.0	132.5	116.6	-2.0
Chemicals industry	52.4	54.3	70.1	109.3	164.9	100.6	-8.1
Other non-maritime	126.5	127.6	130.9	153.1	180.6	191.1	1.3
Non-maritime	316.6	420.0	551.7	456.0	629.6	544.4	-10.7
Direct	370.6	523.4	686.4	540.4	796.9	687.8	-13.7 ²

Source: NBB.

¹ For a definition of contribution to growth in percentage points, see [Annex 2.1](#).

² Percentage change compared to the previous year.

Note: The pattern of investment is closely linked to individual projects and is therefore highly volatile, so the figures require a cautious interpretation.

Direct investment in North Sea Port Flanders decreased by 13.7%. The biggest contribution to this drop came from the chemicals industry (contribution of -8.1 p.p.) due to Molymet Belgium and Unilin Resins. Back in 2019, Molymet Belgium invested a big amount in the construction of a production unit for high-purity molybdenum oxide, used in high-tech applications in chemicals and electronics, returning to a more normal investment figure in 2020 still improving the production unit in the manufacturing process for chemically pure MoO₃. In 2019, Unilin Resins, invested substantially in the construction of a second formaldehyde factory while, in 2020, investment returned to a more normal level.

The **metalworking industry** contributed a negative -2 p.p. to the change in total investment in 2020, coming from ArcelorMittal Belgium, the biggest metalworking company in Ghent. Due to the COVID-19 crisis and the closure of certain customers, ArcelorMittal Belgium adjusted not only its production capacity, but also its investment, although the amounts were still high.

The contribution of **car manufacturing** was negative (-1.9 p.p.) as well. After huge sums invested in 2019, Ghent-based lorry maker Volvo Group Belgium saw its investment return to a more normal level used for the expansion of the truck factory. But Volvo Car Belgium maintained high investment in 2020 (a similar level to 2019) in order to prepare the plant for the production of the fully electric XC40, plan production of the new C40 model, expand the capacity of the XC40 model assembly line and for maintenance of the production equipment.

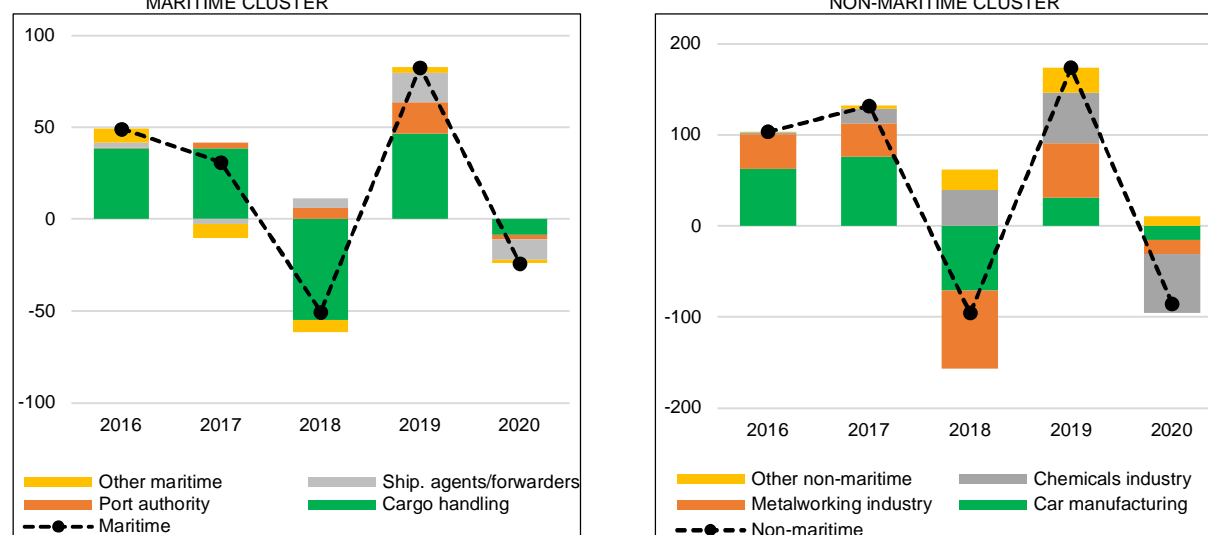
Shipping agents and forwarders made a negative contribution of -1.4 p.p. to the change in total investment mainly due to Seaport Brewing, a company that constructed in 2019 a brand-new production facility where mainly tanks for beer production were installed and whose investment figure fell back to a more normal level in 2020.

³⁶ [Table 4.2.3](#) in Annex 4 shows investment at the port of Ghent in detail, together with the respective shares of the component economic sectors and their changes over the years.

Although AWT Gent, a cargo handler responsible for the construction, financing, maintenance and operation of the All-Weather Terminal, invested substantially for the second year in a row, the aggregate investment figure in **cargo handling** decreased in 2020, due to reduced investments by many other cargo handlers.

FIGURE 20 CHANGE IN INVESTMENT AT NORTH SEA PORT FLANDERS

(in € million, current prices)



Source: NBB.

The top ten companies in terms of investment are listed in [Table 29](#), together reflecting 57% of all investment at North Sea Port Flanders in 2020.

TABLE 29 TOP 10 INVESTMENT AT NORTH SEA PORT FLANDERS

Rank	Name	Sector
1	Volvo Car Belgium	Car manufacturing
2	ArcelorMittal Belgium	Metalworking industry
3	C-Shift	Chemicals industry
4	Bioro	Fuel production
5	Ghent Port Authority	Port authority
6	AWT Gent	Cargo handling
7	Anglo Belgian Corporation	Metalworking industry
8	Compagnie Belge de Manutention	Cargo handling
9	Volvo Group Belgium	Car manufacturing
10	Fuji Oil Europe	Food industry

Source: NBB.

2.3 Port of Zeebrugge

2.3.1 Port developments

In 2020, the port of Zeebrugge handled a total volume of 47 million tonnes. The growth in containers, liquid and dry bulk offset the decline in RoRo, mainly owing to the drop in car traffic volumes because of the COVID-19 crisis. **Container traffic increased by 10.3%** to 17.9 million tonnes or 1.8 million TEU in 2020. The growth was visible in deep-sea, short-sea and estuary shipping. **Liquid bulk rose by 16.5%** due to an expansion in LNG to a record volume of 11 million tonnes, while other liquid bulk fell by 50% to 1.6 million tonnes. **Dry bulk rose to 1.7 million tonnes** thanks to infrastructure works in the port and because the volume of animal feed more than doubled.

TABLE 30 MARITIME TRAFFIC AT THE PORT OF ZEEBRUGGE
(in millions of tonnes)

	2018	2019	2020	2021	Change (%) 2019-2020	Change (%) 2020-2021	Share (%) 2020	Share (%) 2021
Containers	15.2	16.2	17.9	20.6	10.3	15.1	38.1	41.9
Roll-on roll-off	15.9	16.5	14.2	14.9	-14.2	5.1	30.1	30.3
Conventional cargo	1.0	0.9	0.6	0.7	-29.2	6.7	1.3	1.4
Liquid bulk	6.7	10.8	12.6	11.2	16.5	-10.9	26.8	22.9
Dry bulk	1.2	1.3	1.7	1.7	28.9	2.0	3.6	3.5
Total	40.1	45.8	47.0	49.2	2.7	4.6		

Source: Port authorities.

In 2021, transshipment of cargo at the port of Zeebrugge rose by 4.6% to 49.2 million tonnes, as a result of growth in all cargo types, except for liquid bulk. The **container sector leads the growth rankings with 15.1%** to a volume of over 20.6 million tonnes. Handling of roll-on roll-off containers, lift-on lift-off containers and the container volumes via estuary shipping all expanded. **Total RoRo traffic grew by 5.1%** to 14.9 million tonnes in 2021. Existing routes to and from Ireland proved to be a real asset in the pre- and post-Brexit era. In 2021, traffic on UK routes declined by 4.1%, while traffic on Irish destinations surged by 38.7%. The short-sea operators helped to ensure that UK traffic via Ireland did reach the United Kingdom. Also the other short-sea RoRo destinations experienced healthy growth: Scandinavia +10.4%, Southern Europe +22.8%. Within the RoRo segment, 2.2 million new cars were handled in 2021, a revival after a drop in 2020: due to the pandemic, the automotive sector was hit hard partly coming from import and supply of car parts hampered by COVID-19. **Dry bulk rose by 2%** to 1.7 million tonnes, mainly due to an increase in the handling of animal feeds, while **conventional cargo was up by 6.7%** to 0.7 million tonnes. More paper and cardboard were transshipped through the port, as well as more fresh fruit and vegetables. **Liquid bulk volume declined by 10.9%**, as a result of lower LNG³⁷ volumes, which was no surprise given the exceptional high level in 2020.

At the end of January 2022, **Cosco Shipping Ports Zeebrugge extended the concession of its Zeebrugge terminal** by 15 years **until 2055**. The deep-sea container terminal at the Albert II dock in the western outer port was granted a concession to APM Terminals in 2004 for a period of 36 years. CSP Zeebrugge acquired all shares of APM Terminals in January 2018. With the extension of the concession, the Chinese CSP clearly indicates that it wants to further expand the Zeebrugge terminal as a container hub for North West Europe. With its great depth at quays, the port of Zeebrugge offers maritime transit options from mega ships to short-sea destinations.

Many agree that **a second access to the inner port** is necessary as a back-up to the Pierre Vandamme lock, and also **to expand the port of Zeebrugge's capacity**. The Council of State proceedings against the Flemish government's June 2018 preferential decision for the old Visart lock as a location for a new

³⁷ LNG stands for liquified natural gas.

second sea lock in Zeebrugge were stopped. So, the New Lock Zeebrugge project entered the design phase, in which several alternatives³⁸ for the lock and the new road Nx will be examined, while local community life in the area around the Visart site has to be considered as well. Since many design alternatives for the Visart lock and the surrounding roads must be investigated and compared with each other, while the engineering offices are overloaded, the choice between the design alternatives could face at least a delay of one year. The subsequent administrative and public consultation process could not possibly be completed within the current Flemish government's term of office ending in 2024. Since this delay has caused a great stir, the Flemish government set up a taskforce to identify how certain project components can run in parallel to speed up the process and to try and reach a preferential decision within this legislature.

An important milestone in the unification project between the port of Antwerp and Zeebrugge, was the approval for the new merged port by the Belgian Competition Authority, in mid-January 2022. The official launch date of the Port of Antwerp-Bruges was the end of April 2022. By joining forces, the two ports hope to compete better with other international ports and be “more resilient to the challenges of the future”. Combining the industrial cluster in Antwerp and Zeebrugge's location on the coast creates an opportunity to tackle Flanders' energy challenges. In the unified port, Zeebrugge will play an important role in the energy market, as an import hub for green hydrogen, but also with the production of hydrogen. Pipelines between the two sites will serve consumers in Antwerp as well.

The port of Zeebrugge, whose largest trading partner is the United Kingdom, countered the BREXIT challenge by investing in the **RX/SeaPort data platform**, a digital data platform that enables digital connection between stakeholders in logistics and the Belgian customs authorities for import and export.

The construction of the **Verbindings bridge in the inner port of Zeebrugge**, which ensures better accessibility between the outer and inner port and is indispensable in the (cycling) infrastructure for safe commuting, started in the autumn of 2020 and the bridge opened use in April 2022. It concerns a movable bridge, with a length of 130 metres and a passage of 55 metres, above the Verbindings dock. This bridge, with a cost of €34 million, is tailored to large ships and heavy port traffic.

International Car Operators (ICO) in Zeebrugge – an important worldwide hub for roll-on/roll-off goods – invested in **new Liebherr LHM550 mobile heavy-lift crane** which will be used for handling high and heavy cargo, breakbulk cargo and containers. This crane can run entirely on green electricity produced by its own wind turbines, now that the site of ICO has become one of the largest onshore wind farms in Flanders.

The **Hyoffwind project** – with the aim of building a green hydrogen plant from wind energy – will be carried out by a two partner consortium made up of: Fluxys (operator of gas network) and Virya Energy (from the Colruyt group). In December 2021, Fluxys applied an environmental permit for a concession in the port of Zeebrugge. At the same time, a tender procedure was started, with Belgian companies (John Cockerill and BESIX) being chosen as partners for the technology, design and implementation of the project. The final investment decision will depend on approval of the requested environmental permit and on subsidies from the Flemish government. In a first phase, the project aims to build a 25-megawatt installation and to increase capacity to 100 megawatts in a second phase. The hydrogen produced would be distributed in Europe through pipelines³⁹ and tank trailers.

³⁸ For the construction of the lock and the ring road, 25 companies have to relocate while several properties have to be expropriated.

³⁹ The port of Zeebrugge is considered to be the energy port of Belgium. More than 1,900 megawatts of offshore wind energy are brought ashore via the Stevinstation and transported inland via the 380 kV transmission grid. Two gas pipelines arrive from the UK and Norway with further distribution within Europe. Via Fluxys' gas terminal, liquefied gas is converted and fed into the European gas transmission grid. The capacity of the gas transmission grid in Zeebrugge is sufficient to be able to inject hydrogen while remaining below the threshold of maximum 2% blending.

2.3.2 Value added

[Table 31](#) displays direct and indirect value added⁴⁰ at the port of Zeebrugge over the period 2015-2020. The total **direct value added in the port of Zeebrugge** in 2020 was **mainly** generated in the **maritime cluster** (54%): cargo handling accounted for more than one-fifth of value added, while the public sector⁴¹, as the second biggest branch, represented 9%. In the non-maritime cluster, the two biggest branches were the energy and trade sectors, responsible for respectively 13% and 10% of direct value added in Zeebrugge.

TABLE 31 VALUE ADDED AT THE PORT OF ZEEBRUGGE
(in € million)

	2015	2016	2017	2018	2019	2020	Contribution to growth (p.p.) ¹ 2019-2020
Cargo handling	216.6	244.3	245.4	247.7	261.4	244.4	-1.6
Public sector	103.3	103.1	103.0	102.3	103.6	99.2	-0.4
Shipping agents and forwarders	84.8	67.1	69.3	66.0	80.6	84.2	0.3
Other maritime	153.4	149.9	154.9	150.8	156.6	156.0	-0.1
Maritime	558.0	564.4	572.6	566.8	602.2	583.8	-1.7
Energy	91.3	89.6	93.8	91.3	119.8	142.4	2.1
Trade	88.9	91.4	90.3	102.5	98.5	106.6	0.8
Road transport	45.6	50.1	59.9	63.0	52.8	50.6	-0.2
Other non-maritime	177.9	192.4	207.4	190.6	190.8	203.0	1.1
Non-maritime	403.7	423.6	451.3	447.4	461.9	502.6	3.8
Direct	961.7	988.0	1 024.0	1 014.2	1 064.1	1 086.4	2.1 ²
Indirect	670.1	701.1	717.8	713.7	774.2	781.5	
Total	1 631.8	1 689.1	1 741.8	1 727.9	1 838.4	1 867.9	

Source: NBB.

¹ For a definition of contribution to growth in percentage points, see [Annex 2.1](#).

² Percentage change compared to the previous year.

The port of Zeebrugge's direct value added increased by 2.1% in 2020 fully driven by growth in the non-maritime cluster, but partly offset by the maritime cluster. **The non-maritime segments contributing the most** to the growth in total direct value added **were energy** (contribution of 2.1 p.p.), **trade** (part of 0.8 p.p.), **other logistic services** (share of 0.6 p.p.) and **the chemicals industry** (contribution of 0.5 p.p.), the last two as elements of other non-maritime sectors. Details at each branch level are shown in [table 4.3.1](#) in Annex 4.

In Zeebrugge, the upturn in the energy sector was attributable to Fluxys LNG whose value added increased due to higher operating profits and amortisation. The operating result was boosted by an increase in the net allowance for expansion investment in transshipment services. Amortisation was higher because of the commissioning of investment projects in transshipment services, concerning the new fifth LNG storage tank who guarantees the availability of sufficient storage capacity between the unloading and loading operations. The growing value added in trade came from higher operating results by retailers in electrical household appliances, audio and video equipment and dealers in do-it-yourself materials. Due to the pandemic, working from home became more frequent. As more money was spent on enhancing home comfort in and outside the house, some trading companies were able to benefit from this. The other logistic services sector's value added increased mainly due to a merger in the architectural laboratory De Vlieger-Van Vooren. A lab outside the port site was taken over by one established in the port area of Ghent which led to the setting up of a new branch in the Zeebrugge port zone. The takeover required extra staff and therefore meant higher wage costs, resulting in higher value added in the sector. The newly created entity Bomano, active in rental of non-residential real estate, made a healthy operating result during its first year, boosting the value added figure in other logistic services as well. Prince Belgium

⁴⁰ [Table 4.3.1](#) in Annex 4 gives the details of the component economic sectors, their shares and changes over the years.

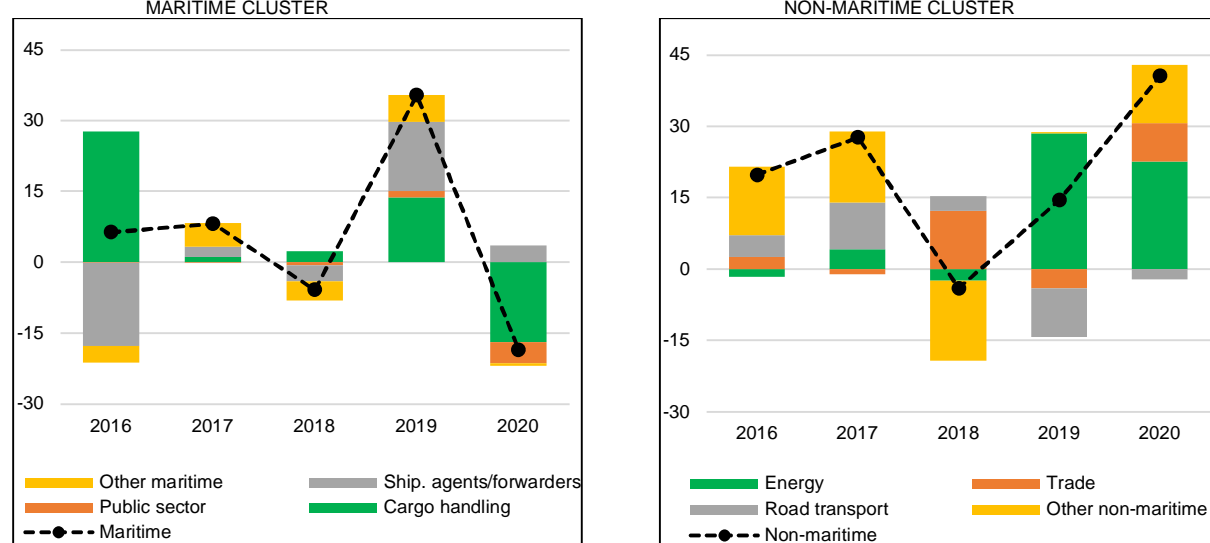
⁴¹ The public sector consists mainly of the general government and Belgian Navy.

- a subsidiary of the international Prince group and worldwide manufacturer of high-quality base materials for enamel coatings⁴² - was able to record an increased operating result despite the impact of the pandemic on sales revenue in the second and third quarter of 2020, which explained the increasing value added in the chemicals sector.

Lower value added in the cargo handling and public sector (contributing respectively -1.6 p.p. and - 0.4 p.p.) **partly offset the total growth in the port of Zeebrugge**. Due to the lockdown period in the second quarter of 2020 and blank sailings, dockers were sometimes temporarily laid off, which meant lower wage costs for Cewez, the Employers' Center of Zeebrugge, and a lower value added figure in 2020, mainly explaining the reduction in cargo handling. The reduction in jobs in the Belgian Navy resulted in a lower wage bill and therefore a lower value added figure, confirming the fall in value added in the public sector.

FIGURE 21 CHANGE IN VALUE ADDED AT THE PORT OF ZEEBRUGGE

(in € million, current prices)



Source: NBB.

TABLE 32 TOP 10 VALUE ADDED AT THE PORT OF ZEEBRUGGE

Rank	Name	Sector
1	Centrale der werkgevers Zeebrugge	Cargo handling
2	Fluxys LNG	Energy
3	Belgian Navy	Public sector
4	Zeebrugge Port Authority	Port authority
5	Public sector	Public sector
6	Fluxys Belgium	Energy
7	P.B.I. Fruit Juice Company	Food industry
8	Artes Depret	Port construction and dredging
9	Mowi Belgium	Fishing and fisheries industry
10	ECS European Containers	Shipping agents and forwarders

Source: NBB.

The top ten companies in terms of value added are listed in [Table 32](#). Together, they accounted for almost half of the direct value added generated in the port of Zeebrugge in 2020.

⁴² Enamel coatings on steel provide excellent and durable protection against corrosion and are fire and scratch resistant as well as chemically resistant.

In 2020, the growth in indirect value added was smaller than the rise in direct value added, coming from lower multipliers of the growing branches, implying that an increase in direct value added in those branches resulted in smaller gains in indirect value added.

Direct value added accounted for 0.4% of the Flemish Region's GDP and 0.2% of Belgian GDP in 2020. Total value added (including indirect effects) accounted for 0.4% of Belgian GDP.

2.3.3 Employment

[Table 33](#) shows direct and indirect employment⁴³ at the port of Zeebrugge over the 2015-2020 period. In 2020, the maritime cluster employed almost two-thirds of the workforce at the port of Zeebrugge with the cargo-handling branch as the biggest provider of employment (share of 31%) and the public sector following in second place (share of 13%), followed by trade (9%) and road transport (7%).

TABLE 33 EMPLOYMENT AT THE PORT OF ZEEBRUGGE
(in FTEs)

	2015	2016	2017	2018	2019	2020	Contribution to growth (p.p.) ¹ 2019-2020
Cargo handling	2 481	2 617	2 765	2 905	3 030	3 065	0.4
Public sector	1 478	1 443	1 399	1 357	1 332	1 310	-0.2
Shipping agents and forwarders	652	637	643	689	734	726	-0.1
Other maritime	1 011	995	1 026	986	1 017	1 045	0.3
Maritime	5 621	5 693	5 834	5 938	6 113	6 146	0.3
Trade	864	903	852	858	882	873	-0.1
Road transport	581	670	693	734	730	699	-0.3
Other industries	418	399	415	400	401	396	-0.1
Other non-maritime	1 473	1 567	1 577	1 578	1 595	1 710	1.2
Non-maritime	3 337	3 538	3 536	3 570	3 608	3 679	0.7
Direct	8 958	9 231	9 370	9 508	9 721	9 825	1.1 ²
Indirect	8 388	8 702	8 812	9 193	9 630	9 761	
Total	17 346	17 933	18 182	18 701	19 352	19 586	

Source: NBB.

¹ For a definition of contribution to growth in percentage points, see [Annex 2.1](#).

² Percentage change compared to the previous year.

Direct employment grew by 1.1% to 9 825 FTEs in 2020, with an increase in both the maritime (contribution of 0.3 p.p.) and non-maritime clusters (contribution of 0.7 p.p.). **The largest contribution came from** the non-maritime segments, **other land transport** (contribution of 0.8 p.p.) **and other logistic services** (share of 0.5 p.p.) partly offset by road transport (part of -0.3 p.p. to total change). The extra workers in other land transport came entirely from a shift of staff within the Belgian National Railway Company to its branch in Zeebrugge to provide cargo transport, while the merger in the architectural laboratory De Vlieger-Van Vooren where a lab outside the port site was taken over, was responsible for the extra jobs in other logistic services.

In the maritime segments, **cargo handling contributed positively as well** (with a share of +0.4 p.p.) to total direct employment growth reflecting mainly more recruitments at Wallenius Wilhelmsen Logistics Zeebrugge due to an increasing need for cargo handling in the second half of 2020. Although the challenges to maintain operability in the port were not minor, the ongoing COVID-19 pandemic had not affected the number of effective dock workers. The amount remained more or less constant with a

⁴³ An overview of the employment figures for the component economic sectors at the port of Zeebrugge is given in [table 4.3.2](#) in Annex 4.

limited growth of 12 workers in 2020, visible in the employment level of Cewez, the Employers' Center of Zeebrugge.

The top ten companies in terms of employment, listed in [Table 34](#) represented more than half of the staff working at the port of Zeebrugge in 2020.

In 2020, the increase in the number of indirect jobs in the port of Zeebrugge was driven by the growth in direct employment. The main driving forces were the other land transport and other logistic services segments. Direct employment accounted for 0.4% of all employment in the Flemish Region and 0.2% of Belgian domestic employment in 2020. Total employment, including indirect jobs, accounted for 0.5% of Belgian domestic employment.

FIGURE 22 CHANGE IN EMPLOYMENT AT THE PORT OF ZEEBRUGGE

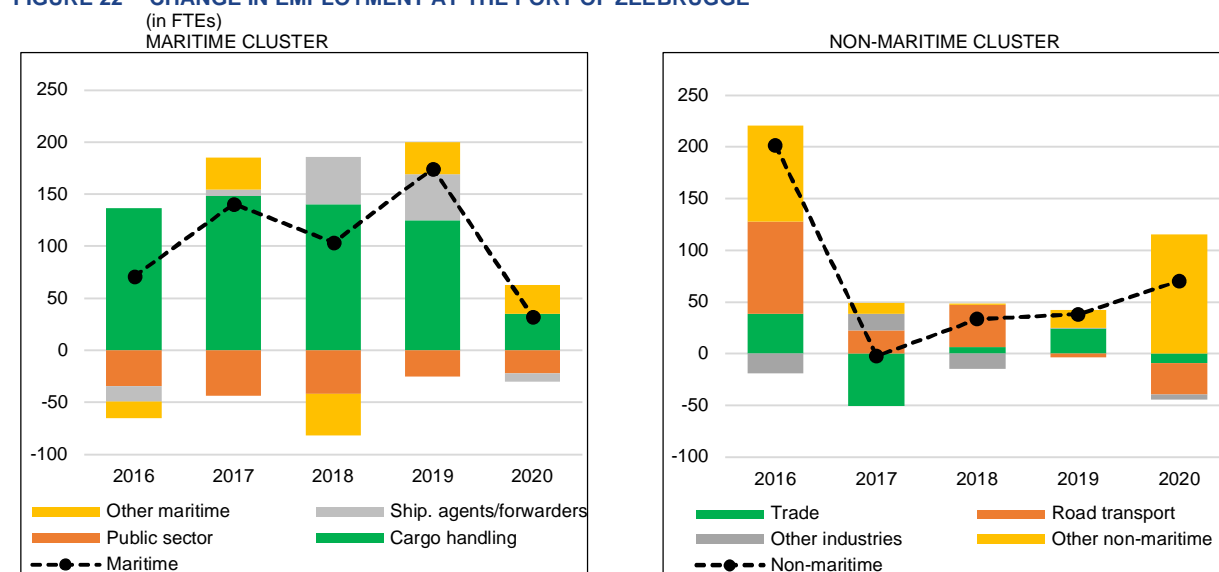


TABLE 34 TOP 10 EMPLOYMENT AT THE PORT OF ZEEBRUGGE

Rank	Name	Sector
1	Centrale der werkgevers Zeebrugge	Cargo handling
2	Belgian Navy	Public sector
3	Public sector	Public sector
4	P.B.I. Fruit Juice Company	Food industry
5	Wallenius Wilhelmsen Logistics Zeebrugge	Cargo handling
6	Mowi Belgium	Fishing and fisheries industry
7	Artes Depret	Port construction and dredging
8	I.V.B.O.	Other industries
9	2xl	Shipping agents and forwarders
10	International Car Operators	Cargo handling

Source: NBB.

2.3.4 Investment

[Table 35](#) gives the investment⁴⁴ levels at the port of Zeebrugge over the 2015-2020 period. **Between 2019 and 2020, investment fell by 15.2%**, from € 308 million to € 261 million. In 2020, the port authority invested the most in the port of Zeebrugge, accounting for almost one-fourth of the total. The energy sector was ranked second with a share of 18%, followed by cargo handling (10%) and the public sector (9%).

The last column in [Table 35](#) shows the contribution of each branch of activity to the total change in investment in 2020, with the non-maritime cluster mainly explaining the overall reduction.

TABLE 35 INVESTMENT AT THE PORT OF ZEEBRUGGE
(in € million)

	2015	2016	2017	2018	2019	2020	Contribution to growth (p.p.) ¹ 2019-2020
Port authority	13.4	24.2	22.7	26.1	25.6	62.8	12.1
Cargo handling	20.3	31.8	45.9	26.0	34.7	26.6	-2.6
Public sector	9.0	7.5	30.6	3.2	42.5	24.0	-6.0
Other maritime	30.6	43.5	33.7	22.4	25.2	17.6	-2.5
Maritime	73.2	107.1	133.0	77.7	128.0	131.0	1.0
Energy	85.0	105.5	65.0	60.8	106.5	48.0	-19.0
Other land transport	20.5	21.9	22.3	27.7	10.8	20.3	3.1
Other logistic services	6.7	5.4	10.6	8.9	12.8	14.4	0.5
Other non-maritime	45.2	61.0	57.0	57.7	49.8	47.3	-0.8
Non-maritime	157.4	193.8	154.9	155.1	179.9	130.0	-16.2
Direct	230.6	301.0	287.9	232.8	308.0	261.0	-15.2 ²

Source: NBB.

¹ For a definition of contribution to growth in percentage points, see [Annex 2.1](#).

² Percentage change compared to the previous year.

Note: The pattern of investment is closely linked to individual projects and is therefore highly volatile, so the figures require a cautious interpretation.

The negative contribution of the non-maritime cluster (-16.2 p.p. to total change) was entirely attributable to the energy sector (share of -19 p.p.). After higher investment sums by Fluxys LNG in 2019 to finalise the construction of the fifth LNG storage tank and to install extra LNG loading stations for lorries, the sums invested fell back to a lower level in 2020, explaining the lower figure in the energy sector.

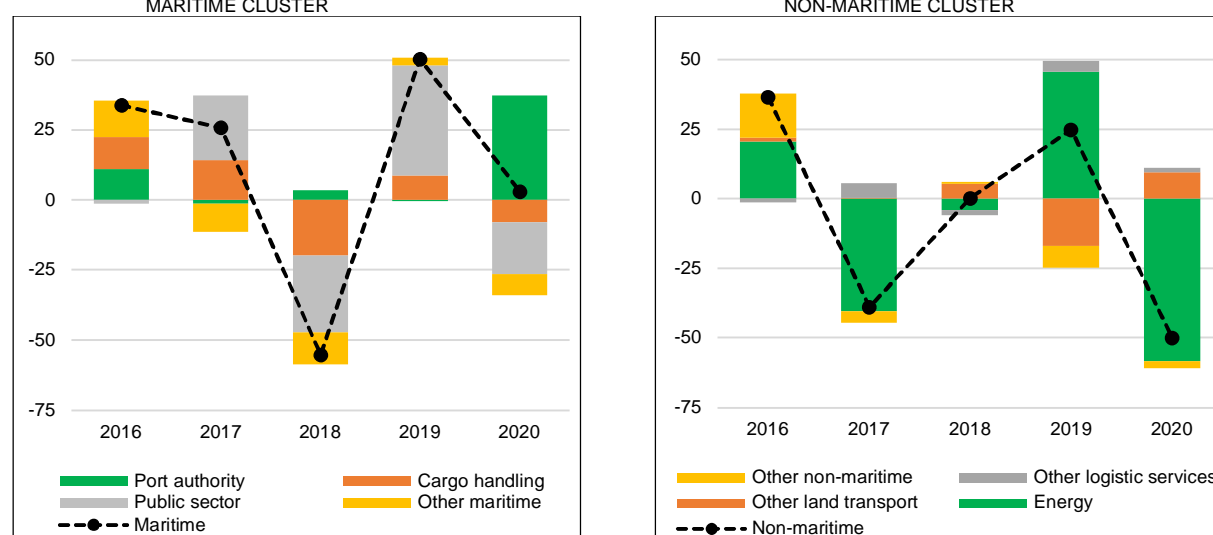
There was also evidence of declining investment in the public sector. After large public spending by the Flemish Region on work on the Pierre Vandamme lock in 2019, the sums invested fell back to a more normal level. The **lower investment volumes in the cargo-handling sector** were explained by a reduction from 2019's investment by CSP Zeebrugge Terminal and International Car Operator (ICO). The former is involved in the project to convert Zeebrugge into a hub for North-West Europe, with a terminal with deep-sea connections and feeder services. The second constructed a new head office, expanded the Bastenaken Terminal in Zeebrugge and invested in the installation of a large number of electrical loading stations since one-third of the cars passing through the port of Zeebrugge are soon expected to be electric.

Some sectors saw their investment level grow in 2020, especially in the port authority, other land transport and food industry (the latter being a component of other non-maritime branches), contributing respectively +12.1 p.p., +3.1 p.p. and +2.4 p.p. to the total change. Zeebrugge Port Authority stepped up

⁴⁴ More details, together with the respective shares of the component economic sectors and their changes over the years, are shown in [table 4.3.3](#) in Annex 4.

its investment in the construction of quay walls for handling expanding RoRo and car traffic, for the construction of a new bridge over the Verbindings dock and for further investments in the 5G network. Higher investment levels in other land transport may be explained by extra funds invested by the Belgian National Railway Company in the port area of Zeebrugge, while additional investment projects were carried out by P.B.I Fruit Juice Company to improve their existing production lines and build a new one, explaining the growing investment figure in the food industry.

FIGURE 23 CHANGE IN INVESTMENT AT THE PORT OF ZEEBRUGGE
(in € million, current prices)



Source: NBB.

The top ten companies in terms of investment are listed in [Table 36](#) and represent 68% of all investment in the port of Zeebrugge in 2020.

TABLE 36 TOP 10 INVESTMENT AT THE PORT OF ZEEBRUGGE

Rank	Name	Sector
1	Zeebrugge Port Authority	Port authority
2	Ico Windpark	Energy
3	Public sector	Public sector
4	BNRC Group	Other land transport
5	P.B.I. Fruit Juice Company	Food industry
6	Fluxys LNG	Energy
7	C.RO Ports Zeebrugge	Cargo handling
8	CSP Zeebrugge Terminal	Cargo handling
9	I.V.B.O.	Other industries
10	Be Food!	Fishing and fisheries industry

Source: NBB.

2.4 Port of Ostend

2.4.1 Port developments

Like Zeebrugge, the port of Ostend is located on the Belgian coast, being the smallest of the two coastal ports. It mainly focuses on the construction and maintenance of wind farms in the North Sea. While the port used to be the largest Flemish port in terms of passenger transport, it has largely converted its activity to cargo transshipment.

In 2020, the port of Ostend handled 1.5 million tonnes, a **drop in its maritime transshipments of 6.2%** on 2019 owing to the COVID-19 virus. Despite the fall in handled tonnage, the port recorded 20% more shipping movements, mainly resulting from an extra number of work vessels for the “blue economy”.

Although the volumes of dry and liquid bulk grew **in 2021, overall maritime traffic volumes decreased by 5.6%**. This was exclusively due to the fact that no specific projects for the construction and installation of wind farms were taking place. The port of Ostend believes that attracting additional traffic is a priority for the coming years in order to boost employment and sustainable growth at the port site.

TABLE 37 MARITIME TRAFFIC AT THE PORT OF OSTEND
(in millions of tonnes)

	2018	2019	2020	2021	Change (%) 2019-2020	Change (%) 2020-2021
Total	1.5	1.6	1.5	1.4	-6.2	-5.6

Source: Port authorities.

The port of Ostend distinguishes itself as a **“blue energy port”**, a port that offers a wide range of services to offshore wind farms. In 2019, the port authority became the only shareholder in REBO⁴⁵ (Renewable Offshore Base Oostende). Since construction of the current offshore wind farms is now complete and the REBO terminal is waiting for new business activities, the port authority has maximised its efforts to promote the growth of business at this terminal. In the search for new traffic, the port of Ostend invested in its infrastructure, including in extra security.

Now Brexit is completed and new practicalities for shipping are clear, one of the port of Ostend's **ambitions is to set up a liner service with the UK and Ireland for bulk and project cargo**.

At the former Béliard shipyard at Houtdok in Ostend, which was largely demolished in 2010, a permit has been requested for an eleven-storey-high logistics complex. The site development provides access roads for heavy goods traffic. The location at the quay in the port area of Ostend is an **extra asset for transport by water**.

In its search for **innovative activities**, the Ostend Port Authority granted a concession on the ex-Béliard site to ECA Robotics Belgium which will build a 5 000-square-metre drone factory that will be operational in 2022. The company is building a production centre for underwater drones, thanks to the mine hunter contract between the Belgian and Dutch Navies.

By 2025, DEME will be building Hyport, **Europe's first large-scale hydrogen plant** running on offshore wind power in collaboration with the Port of Ostend.

⁴⁵ REBO is the entity that manages the large offshore platform in the outer port from which installation work on wind farms in the Belgian part of the North Sea is carried out. REBO acts as a logistics developer that invests in and rents out infrastructure (heavy-duty quay, quay walls, office buildings, etc.) at Ostend port sites.

2.4.2 Value added

[Table 38](#) reports direct and indirect value added⁴⁶ at the port of Ostend over the 2015-2020 period. In 2020, the non-maritime cluster generated almost three quarters (72%) of all value added with the metalworking industry as the biggest provider (41%). The maritime cluster, generating 28% of value added, is nevertheless very important, with the public sector (public administration and Belgian Navy) and the port construction and dredging segment respectively producing 9% and 11% of direct value added.

TABLE 38 VALUE ADDED AT THE PORT OF OSTEND
(in € million)

	2015	2016	2017	2018	2019	2020	Contribution to growth (p.p.) ¹ 2019-2020
Port construction and dredging	70.5	57.1	42.6	47.8	53.3	79.2	4.4
Public sector	56.2	58.2	59.2	61.7	63.2	65.1	0.3
Fishing and fisheries industry	28.9	29.4	33.1	28.1	24.9	29.4	0.8
Other maritime	20.6	20.3	20.5	23.6	20.7	22.8	0.4
Maritime	176.2	165.0	155.4	161.2	162.1	196.5	5.9
Metalworking industry	168.4	179.7	215.1	214.9	210.6	291.1	13.8
Construction	34.0	31.3	39.8	35.0	42.2	50.3	1.4
Other logistic services	13.0	14.4	16.1	23.3	32.0	40.7	1.5
Other non-maritime	129.6	138.8	127.6	135.9	137.8	129.6	-1.4
Non-maritime	345.0	364.2	398.6	409.2	422.6	511.6	15.2
Direct	521.2	529.2	554.1	570.4	584.7	708.2	21.1 ²
Indirect	379.2	365.6	382.2	405.4	428.4	523.6	
Total	900.4	894.8	936.2	975.8	1 013.1	1 231.8	

Source: NBB.

¹ For a definition of contribution to growth in percentage points, see [Annex 2.1](#).

² Percentage change compared to the previous year.

For the fifth year in a row, direct value added grew. It rose strongly by 21% to € 708 million in 2020, driven by growth in both the maritime and the non-maritime clusters.

The most important explanatory non-maritime segments are the metalworking industry, construction and other logistic services, contributing respectively 13.8 p.p., 1.4 p.p. and 1.5 p.p. to total growth. The first came from a surge in Daikin Europe's operating result in 2020. Due to the pandemic, working from home became the norm. So, more money was spent on renovation and enhancing home comfort, which resulted in a strong boost in air conditioning sales in the residential market. Since the coronavirus emerged, more attention has been paid to improving indoor air quality, in which the supply of fresh air together with the efficiency of heat recovery are important drivers, reflected in some of Daikin's products. Moreover, the European Union has accelerated the Green Deal initiative, placing greater emphasis on decarbonising residential and commercial heating, thereby generating additional opportunities in the European heat pump market, in which Daikin Europe is active as well. The second – the increase in value added in the construction sector – was mainly due to the higher operating result, rising wage costs and depreciation for Verhelst Aanneming linked to major infrastructure works at Knokke-Heist and at the Cosco Shipping terminal in Zeebrugge. It is important to remember that construction companies experience more fluctuations in value added than other branches, since turnover can only be recorded on the basis of provisional acceptance of building work. The third – the rising value added in other logistic services – resulted from a better operating result for Global Sea Mineral Resources, a subsidiary of the DEME group. The company is active in R&D related to deep-sea mining, more specifically responsible for the development of innovative techniques to design a commercially and

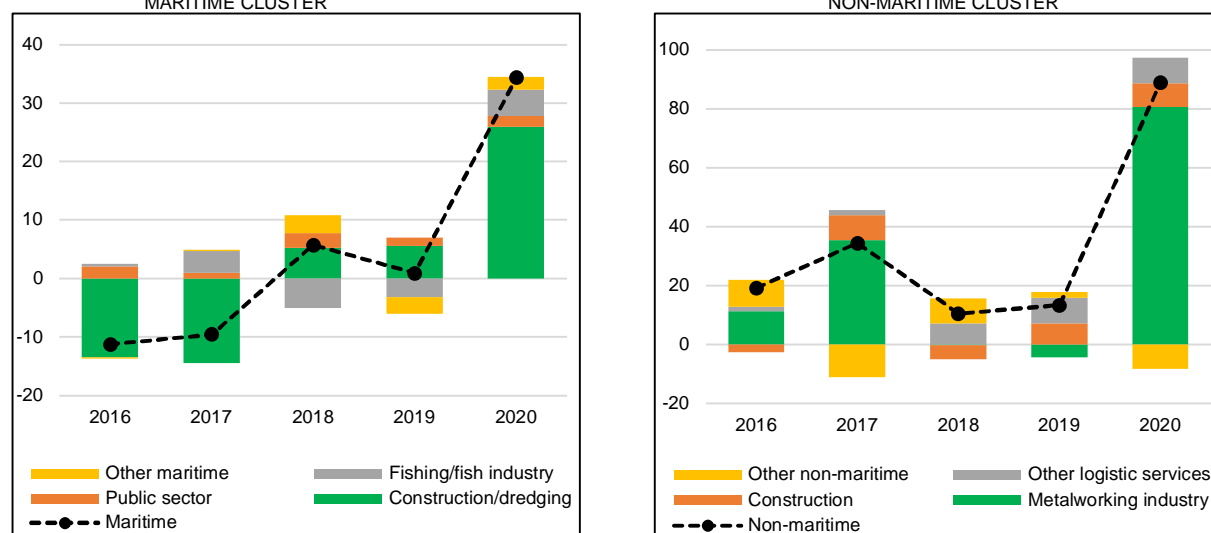
⁴⁶ [Table 4.4.1](#) in Annex 4 reveals the details of the component economic sectors, their shares and changes over the years.

environmentally viable system to extract polymetallic nodules⁴⁷ in a responsible manner. In 2020, a first successful test was completed in the Atlantic Ocean which resulted in a positive operating result for the first time which boosted its added value substantially.

In the maritime cluster, the positive contribution of port construction and dredging (+4.4 p.p. to total growth) was enforced by the positive input (+0.8 p.p.) from the fishing and fisheries industry. The port construction and dredging sector's value added increased due to the rising operating profit generated by the Baggerwerken Decloedt & Zoon dredging projects. In addition to maintenance dredging works in the maritime access roads in the North Sea, the company is also active in a variety of specialist and complex hydraulic engineering domains in Europe, Africa and South America. Although the pandemic disrupted the normal course of works at home and abroad, and the closure of borders and travel restrictions raised many logistical challenges, the company managed to make its mark as a maritime infrastructure company in a variety of complex hydraulic engineering disciplines. The fishing and fisheries industries' value added increased mainly due to a higher operating result in Morubel, which is a member of the Shore shrimp supplier. The rise was due to slightly higher average selling prices.

FIGURE 24 CHANGE IN VALUE ADDED AT PORT OF OSTEND

(in € million, current prices)



Source: NBB.

TABLE 39 TOP 10 VALUE ADDED AT THE PORT OF OSTEND

Rank	Name	Sector
1	Daikin Europe	Metalworking industry
2	Baggerwerken Decloedt & Zoon	Port construction and dredging
3	Public sector	Public sector
4	Verhelst Aannemingen	Construction
5	Provion Functional Chemicals	Chemicals industry
6	Algemene Ondernemingen Soetaert	Construction
7	Vestas Offshore Wind Belgium	Other logistic services
8	Aquafin	Other industries
9	Biostoom Oostende	Energy
10	Mainfreight Logistic Services Belgium	Road transport

Source: NBB.

⁴⁷ The seabed contains numerous raw materials, for example polymetallic nodules – these are nickel, copper, cobalt and manganese – which can be found at an average depth of 4 000 to 6 000 metres.

The top ten companies in terms of value added ([Table 39](#)), accounted for 72% of direct value added generated in the port of Ostend in 2020.

In 2020, the growth in indirect value added was slightly larger than the rise in direct value added, due partly to construction and port construction and dredging, two branches whose multipliers are higher than those of other sectors, implying that their rise in direct value added resulted in even larger gains in indirect value added. The metalworking industry and other logistic services generated extra value added in their supplier sectors as well. In 2020, direct value added represented 0.3% of the Flemish Region's GDP and 0.2% of Belgian GDP. Total value added, including indirect effects, accounted for 0.3% of Belgian GDP.

2.4.3 Employment

[Table 40](#) shows direct and indirect employment⁴⁸ at the port of Ostend over the 2015-2020 period. The non-maritime cluster employed two-thirds of the workforce there and the maritime cluster one-third. The metalworking industry was the biggest provider of employment with 30%. The public sector (public administration and Belgian Navy) followed in second place with 15%, tracked by construction (8%), road transport (7%), port construction and dredging (6%) and the fishing and fisheries industry (5%).

TABLE 40 EMPLOYMENT AT THE PORT OF OSTEND
(in FTEs)

	2015	2016	2017	2018	2019	2020	Contribution to growth (p.p.) ¹ 2019-2020
Public sector	772	786	770	767	775	794	0.4
Port construction and dredging	364	345	332	328	323	309	-0.3
Fishing and fisheries industry	333	328	344	348	332	286	-0.9
Other maritime	264	256	248	256	260	269	0.2
Maritime	1 733	1 715	1 693	1 700	1 690	1 659	-0.6
Metalworking industry	1 432	1 390	1 450	1 501	1 617	1 561	-1.1
Construction	423	434	441	420	407	416	0.2
Road transport	419	417	416	408	394	348	-0.9
Other non-maritime	979	947	854	923	1 013	1 102	1.7
Non-maritime	3 253	3 188	3 160	3 253	3 431	3 427	-0.1
Direct	4 986	4 903	4 854	4 953	5 121	5 086	-0.7 ²
Indirect	4 155	3 968	4 009	4 203	4 328	4 292	
Total	9 141	8 871	8 862	9 156	9 449	9 378	

Source: NBB.

¹ For a definition of contribution to growth in percentage points, see [Annex 2.1](#).

² Percentage change compared to the previous year.

Direct employment in the port of Ostend fell slightly by 0.7% in 2020, due to the negative contribution from the maritime cluster, in turn explained by fewer jobs in port construction and dredging and in the fishing and fisheries industry, respectively contributing -0.3 p.p. and -0.9 p.p. to the total decline. The reduction in jobs in port construction and dredging was linked to the completion of some deepening dredging works in foreign ports. Following the move of the registered offices of two fishing companies from Oostende to Knokke-Heist, a big drop in jobs was seen in the fishing and fisheries industry as the employment numbers in those firms moved out of the scope of the port area to the outside port zone⁴⁹.

At the same time, employment grew slowly in the public sector thanks to additional hires in the Vlaams Instituut voor Zee.

⁴⁸ An overview of the employment figures for the component economic sectors is given in [table 4.4.2](#) in Annex 4.

⁴⁹ Fishing companies are included in the port study regardless of the address of their Belgian establishment. Either we allocate them to a specific port if the location is in the relevant geographical port area, or they are allocated to the outside port zone.

In 2020, employment trends in the different branches of the non-maritime cluster balanced each other out. While the reduction in staff numbers was evident in the **metalworking industry** (contribution of -1.1 p.p. to total change) and road transport (part of -0.9 p.p.), employment grew in other logistic services (share of +0.8 p.p.) and other industries (contribution of +0.5 p.p.), both elements of the other non-maritime branches. The pandemic that resulted in lockdowns and government restrictions to prevent the spread of the virus led to a temporary drop in employment at Daikin Europe – the biggest employer in the metalworking industry – in the second quarter of 2020. From the third quarter onwards, the air conditioning market recovered and even received a boost. The temporary decline in the metalworking industry in the second quarter was the main explanation for the lower average number of full-time equivalents in 2020 than in 2019. The fall in the **road transport sector** resulted from job shifts between the different road transport companies belonging to the same Mainfreight group, where jobs moved away from registered establishments in the port area of Ostend to other subsidiaries located outside the port site. The job growth in **other logistic services** reflected extra hires by MHI Vestas Offshore Wind Belgium, a subsidiary of the Danish manufacturer of wind turbines, established in the port of Ostend. The entity is responsible for the maintenance and monitoring of several windfarms in Belgium (Belwind, Northwind, Nobelwind). The additional jobs in **other industries** could be explained by the recruitments at RenaSci Oostende Recycling. The company was set up in 2018 and hired new profiles in 2020. It aims to introduce Smart Chain Processing by combining multiple waste treatment technologies to convert waste into maximum product and energy recovery.

The top ten companies in terms of employment, shown in [Table 41](#) represented 66% of the workforce at the port of Ostend in 2020.

In 2020, indirect employment at the port of Ostend followed the trend in direct employment. The metalworking industry, together with road transport and the fishing and fisheries industry were the main branches losing jobs in their supplier sectors. Direct employment accounted for 0.2% of total employment in the Flemish Region and 0.1% of Belgian domestic employment. Total employment in the port, including indirect job creation, accounted for 0.2% of Belgian domestic employment.

FIGURE 25 CHANGE IN EMPLOYMENT AT PORT OF OSTEND

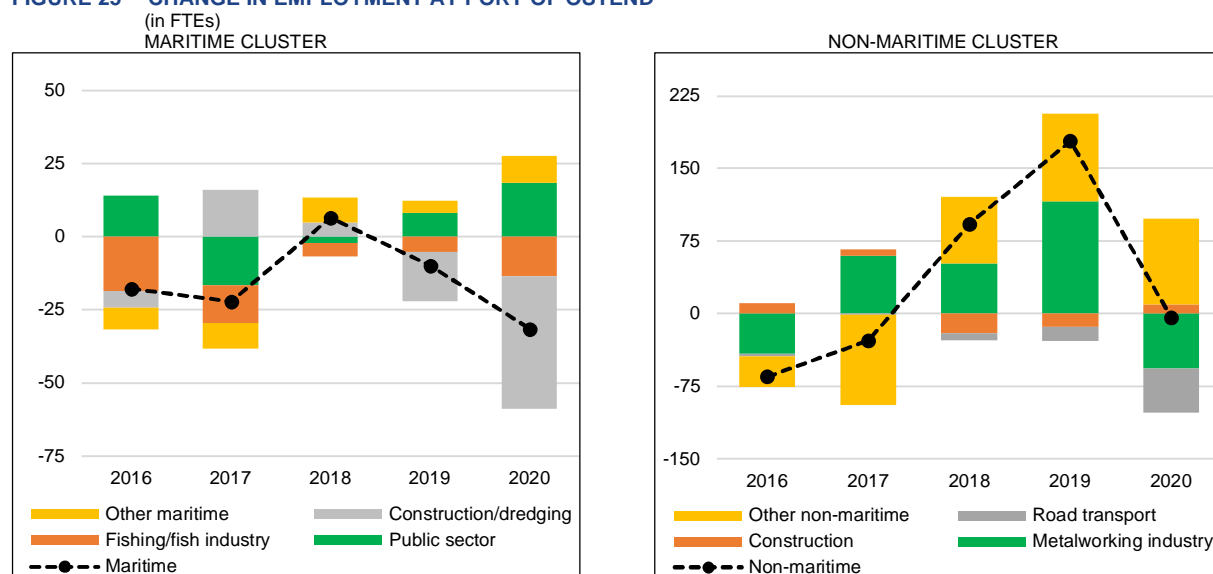


TABLE 41 TOP 10 EMPLOYMENT AT THE PORT OF OSTEND

Rank	Name	Sector
1	Daikin Europe	Metalworking industry
2	Public sector	Public sector
3	Baggerwerken Decloedt & Zoon	Port construction and dredging
4	Mainfreight Logistic Services Belgium	Road transport
5	Verhelst Aannemingen	Construction
6	Provion Functional Chemicals	Chemicals industry
7	Clemaco Contracting	Shipbuilding and repair
8	Algemene Ondernemingen Soetaert	Construction
9	Vestas Offshore Wind Belgium	Other logistic services
10	Vlaams Instituut voor de Zee	Public sector

Source: NBB.

2.4.4 Investment

The amounts invested at the port of Ostend over the 2015-2020 period are reported in [Table 42](#)⁵⁰. In 2020, other industries, whose investment level more than doubled, invested the most in the port of Ostend, accounting for 42% of the sums invested. Construction was ranked second with a share of 21%. Other major investors included the metalworking industry.

TABLE 42 INVESTMENT AT THE PORT OF OSTEND
(in € million)

	2015	2016	2017	2018	2019	2020	Contribution to growth (p.p.) ¹ 2019-2020
Public sector	13.8	23.8	5.4	32.7	6.8	7.8	0.9
Port construction and dredging	0.1	1.3	2.8	1.2	0.0	6.2	5.8
Fishing and fisheries industry	3.0	3.3	6.4	8.0	5.9	2.5	-3.1
Other maritime	3.9	4.6	2.7	3.9	6.1	3.1	-2.8
Maritime	20.9	33.0	17.4	45.8	18.8	19.6	0.7
Other industries	18.8	14.5	10.6	12.5	28.3	74.6	43.6
Construction	10.6	21.3	15.6	20.1	10.5	37.5	25.4
Metalworking industry	77.3	11.3	11.2	21.4	25.6	20.4	-4.9
Other non-maritime	16.6	16.6	25.4	28.6	23.0	26.4	3.2
Non-maritime	123.4	63.7	62.8	82.7	87.4	158.9	67.3
Direct	144.3	96.6	80.2	128.4	106.2	178.5	68.0 ²

Source: NBB.

¹ For a definition of contribution to growth in percentage points, see [Annex 2.1](#).² Percentage change compared to the previous year.

Note: The pattern of investment is closely linked to individual projects and is therefore highly volatile, so the figures require a cautious interpretation.

Direct investment in the port of Ostend surged by 68% from € 106 million to € 178 million in 2020. The sectors contributing the most to the total growth in investment in that year were other industries, construction and port construction and dredging, contributing respectively 43.6 p.p., 25.4 p.p. and 5.8 p.p. to total growth. The increasing level in other industries was mainly due to RenaSci Oostende Recycling, which invested a huge amount of money in building its first Smart Chain Processing concept plant, with construction work being seriously delayed by the COVID-19 pandemic. This investment was only possible with the support of the parent company RenaSci Oostende Holding. West Recycle also invested a large amount in 2020 for the construction of warehouses where the company plans to process

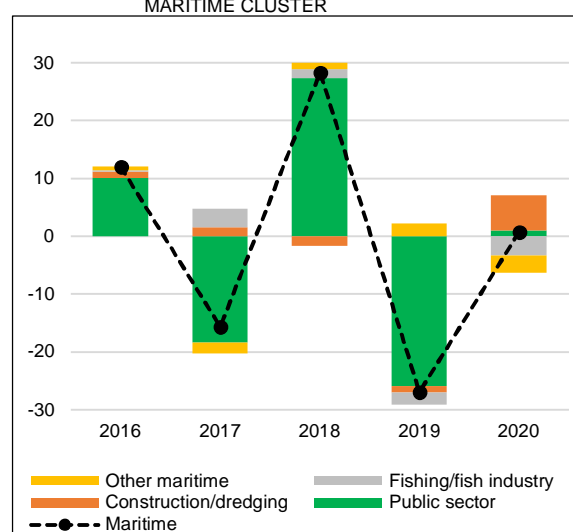
⁵⁰ [Table 4.4.3](#) in Annex 4 illustrates investment at the port of Ostend in detail, together with the respective shares of the component economic sectors and their changes over the years.

waste into new commodities, for the construction industry for instance. With its business focused on physico-chemical cleaning of inert waste streams, the company, established in 2019, is fully involved in the circular industry. Topan, a constructor of tunnels for rail and road traffic and other underground passages, invested heavily in the purchase of land and buildings in 2020, which explains the rise in the construction branch. Dredging Decloedt & Zoon invested extra sums in new equipment necessary for its dredging projects.

The top ten companies in terms of investment are listed in [Table 43](#); together they reflect 77% of all investment at the port of Ostend in 2020.

FIGURE 26 CHANGE IN INVESTMENT AT PORT OF OSTEND

(in € million, current prices)
MARITIME CLUSTER



Source: NBB.

NON-MARITIME CLUSTER

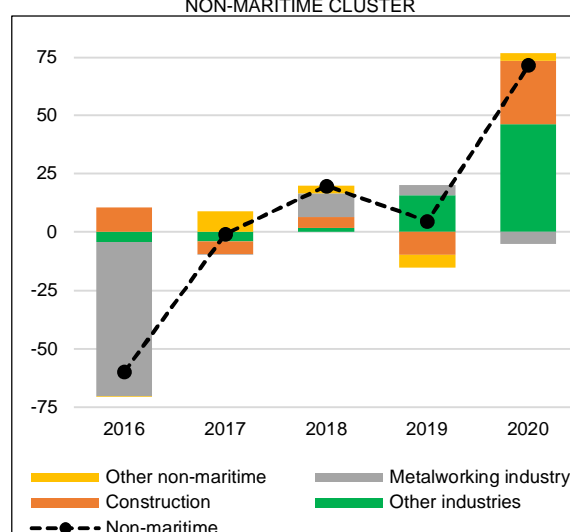


TABLE 43 TOP 10 INVESTMENT AT THE PORT OF OSTEND

Rank	Name	Sector
1	RenaSci Oostende Recycling	Other industries
2	Topan	Construction
3	Daikin Europe	Metalworking industry
4	West Recycle	Other industries
5	Aquafin	Other industries
6	Public sector	Public sector
7	Verhelst Aannemingen	Construction
8	Algemene Ondernemingen Soetaert	Construction
9	Baggerwerken Decloedt & Zoon	Port construction and dredging
10	Verhelst Machines	Metalworking industry

Source: NBB.

2.5 Liège port complex

2.5.1 Port developments

Belgium's largest inland port, the Liège port complex, experienced a **decline** of 12.1% in its cargo traffic to **14 million tonnes in 2020**, reflecting the economic impact of the pandemic. Maritime traffic of most commodity types (carrier products, coke and petroleum, coal, wood, agricultural, metal and chemical products) went down as many sectors were hard hit in 2020 by the successive lockdowns and the resulting drop in economic activity. By contrast, container volumes expanded from 96 220 TEU in 2019 to 115 921 TEU in 2020, while the transshipment of secondary raw materials and waste transport showed an upward trend as well.

In 2021, the volume of freight shipped grew by 6.7%, totalling nearly 15 million tonnes. Handling of most commodity categories increased, as industry, energy, construction and metallurgical branches took full advantage of the economic growth in 2021. Wood and products shipped in containers were not transported as much as in 2020, due to the closure of the Awirs pellet power plant and the congestion in container shipping. For the first time in ten years, container traffic recorded a very slight decrease (-2%), with nearly 114 000 TEU handled at the three container terminals at the port of Liège (Renory, Trilogiport, Euroports) due to the coronavirus crisis and logistics issues in the global chain.

TABLE 44 MARITIME TRAFFIC AT THE LIÈGE PORT COMPLEX
(in millions of tonnes)

	2018	2019	2020	2021	Change (%) 2019-2020	Change (%) 2020-2021
Total	16.0	15.9	14.0	14.9	-12.1	6.7

Source: Port authority.

The Liège port complex is working continuously on several projects to develop multimodality like the engineering of the multimodal platform Trilogiport, the new extension of the Trilogiport container terminal by 5.8 hectares scheduled for 2022 and more and more initiatives related to rail and multimodality.

2.5.2 Value added

[Table 45](#) shows direct and indirect value added⁵¹ at the Liège port complex over the period 2015-2020. In terms of value added, the complex is mainly non-maritime, so this cluster's share was 96.5% in 2020, largely consisting of the energy (27.6%), chemicals industry (15.5%) and metalworking industry (15%).

Direct value added in the Liège port complex increased by 1.1% in 2020, mainly resulting from the rise in the non-maritime cluster. The **strong positive contribution of the energy sector** (+7.1 p.p.) can be explained by a better operating result and thus more value added, mainly due to a rise in electricity price and an increase in volumes sold on the wholesale markets, partially offset by lower gas sales and lower revenue from the marketing activity.

The growing value added in the chemicals industry (contribution of +1.8 p.p. to total change) was mainly explained by Prayon, a worldwide leader in phosphate chemistry, which in July 2020 acquired the firm Prayon Technologies, classified in our population as being active in other logistic services as the entity is responsible for the know-how and techniques developed in the group. The value added generated by Prayon in 2020 increased on the back of a higher operating result and higher wage costs. The merger of those two companies also explained the reduction in the aggregated value added level for other logistic services in 2020 compared to 2019.

⁵¹ [Table 4.5.1](#) in Annex 4 notes value added for more detailed branches, together with their respective shares and their changes over the years.

TABLE 45 VALUE ADDED AT THE LIÈGE PORT COMPLEX
(in € million)

	2015	2016	2017	2018	2019	2020	Contribution to growth (p.p.) ¹ 2019-2020
Cargo handling	14.2	15.4	15.4	15.3	17.5	18.7	0.1
Shipping agents and forwarders	4.6	6.2	6.9	6.5	7.7	10.8	0.3
Shipping companies	4.2	3.8	4.2	4.8	4.5	4.5	0.0
Other maritime	3.1	3.3	3.3	3.4	3.3	2.9	0.0
Maritime	26.1	28.7	29.8	30.1	33.0	36.9	0.4
Energy	250.8	325.3	260.3	80.5	216.9	291.3	7.1
Chemicals industry	132.4	149.4	151.3	152.3	144.9	164.2	1.8
Metalworking industry	275.0	278.9	309.6	309.3	218.6	158.7	-5.7
Other non-maritime	389.5	390.4	405.7	417.7	432.0	405.8	-2.5
Non-maritime	1 047.6	1 144.0	1 126.9	959.8	1 012.5	1 020.0	0.7
Direct	1 073.7	1 172.6	1 156.7	989.8	1 045.5	1 056.9	1.1 ²
Indirect	971.1	1 048.2	1 101.7	1 006.4	958.1	887.0	
Total	2 044.8	2 220.9	2 258.5	1 996.2	2 003.6	1 943.9	

Source: NBB.

¹ For a definition of contribution to growth in percentage points, see [Annex 2.1](#).

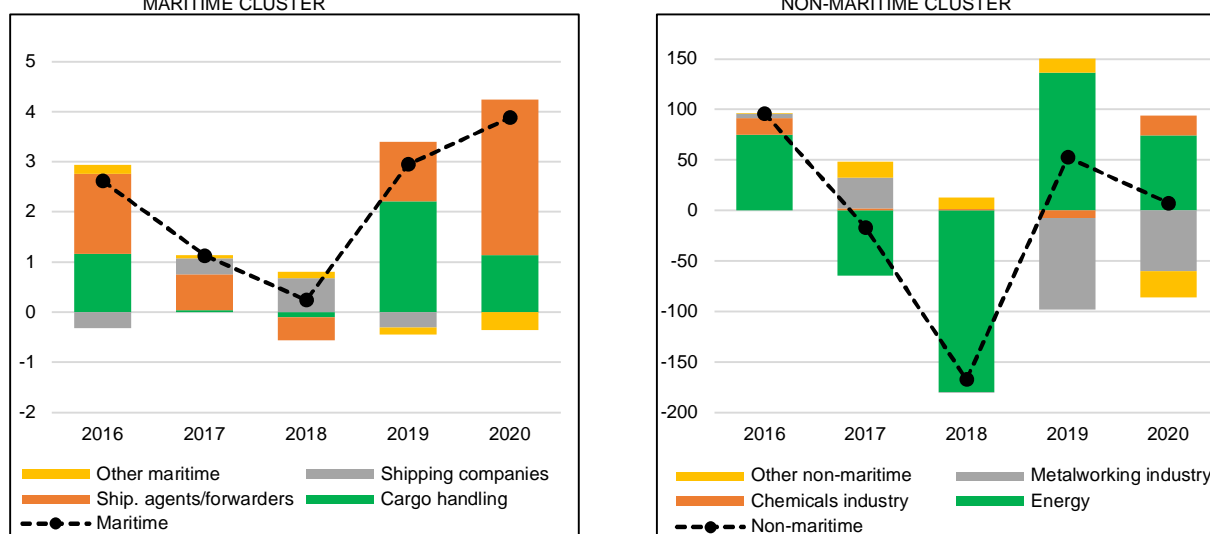
² Percentage change compared to the previous year.

The falling value added in the metalworking industry (share of -5.7 p.p. in the overall trend) **and other non-maritime branches** (contribution of -2.5 p.p.) **partly offset the positive contribution of the energy sector and the chemicals industry**. Many industrial metalworking companies suffered a drop in their value added, due to lower operating profits triggered by the lower demand for steel as a result of the COVID-19 crisis which, in turn, led to lower volumes sold and lower prices. But the biggest impact came from ArcelorMittal Belgium. In response to falling demand for metal, ArcelorMittal Belgium adjusted its production capacity, which entailed lower labour costs, due to temporary lay-offs. Write-downs on inventories and trade receivables were reversed and provisions were written back. All these items together led to an important fall in value added of ArcelorMittal Belgium in 2020 compared to 2019. The drop in value added in other non-maritime sectors resulted mainly from lower value added in fuel production and other logistic services. Biowanze, a producer of bioethanol from wheat and sugar beet, saw a lower operating profit due to reduced turnover because of lower production of bioethanol and a price reduction for gluten, a side product made by the company. Moreover, Biowanze had to pay higher maintenance costs since the health crisis interrupted and prolonged a planned maintenance shutdown.

The maritime cluster contributed positively to total growth as well, thanks in particular to **shipping agents and forwarders** (contribution of +0.3 p.p. to total growth). ECDC Logistics, which specialises in cross-border e-commerce mainly from China, has stepped up its activity importantly since the third quarter of 2020. Smartvalue created extra jobs in 2020 to enforce the operational side of the business of Newpharma, Belgium's first online pharmacy. Both the increasing wage costs and higher operating results for the two companies explained the rising value added between 2019 and 2020.

FIGURE 27 CHANGE IN VALUE ADDED AT THE LIÈGE PORT COMPLEX

(in € million, current prices)



Source: NBB.

The ten biggest companies in terms of value added, mentioned in [Table 46](#), accounted for 70% of the direct value added created in the Liège port complex in 2020.

Although direct value added increased at the Liège port complex, indirect value added fell in 2020. The drop was mainly due to the multipliers for the metalworking industry and the fuel production branch being larger than those for other sectors, implying that their decline in direct value added led to even larger losses in indirect value added. The companies delivering inputs to the energy sector generated extra value added which partly offset the overall decline. Direct value added accounted for 0.2% of Belgian GDP or 1% of the Walloon Region's GDP in 2020. Total value added, including indirect effects, accounted for 0.4% of Belgian GDP.

TABLE 46 TOP 10 VALUE ADDED AT THE LIÈGE PORT COMPLEX

Rank	Name	Sector
1	Electrabel	Energy
2	Prayon	Chemicals industry
3	Biowanze	Fuel production
4	ArcelorMittal Belgium	Metalworking industry
5	Carrières et Fours à Chaux Dumont-Wautier	Construction
6	John Cockerill	Metalworking industry
7	N. et B. Knauf et Cie	Construction
8	Cimenteries CBR Cementbedrijven	Construction
9	EDF Luminus	Energy
10	Imerys Minéraux Belgique	Chemicals industry

Source: NBB.

2.5.3 Employment

[Table 47](#) illustrates the (in)direct employment⁵² figures at the Liège port complex over the period 2015-2020. In terms of full-time equivalent jobs, the Liège port complex is mainly non-maritime with a stable share of 94% during the period. The biggest employers are the metalworking industry (28%), energy (15%) and the chemicals industry (13%).

TABLE 47 EMPLOYMENT AT THE LIÈGE PORT COMPLEX
(in FTEs)

	2015	2016	2017	2018	2019	2020	Contribution to growth (p.p.) ¹ 2019-2020
Cargo handling	157	174	185	189	205	198	-0.1
Shipping agents and forwarders	61	73	93	125	144	183	0.5
Shipping companies	54	55	52	53	51	49	0.0
Other maritime	43	45	44	43	45	45	0.0
Maritime	314	347	374	410	445	476	0.4
Metalworking industry	2 440	2 307	2 355	2 376	2 438	2 259	-2.2
Energy	1 286	1 246	1 219	1 197	1 199	1 199	0.0
Chemicals industry	1 011	1 036	1 032	1 032	1 046	1 053	0.1
Other non-maritime	3 140	2 908	2 984	2 901	3 010	2 974	-0.4
Non-maritime	7 877	7 496	7 590	7 506	7 693	7 485	-2.6
Direct	8 191	7 843	7 963	7 915	8 138	7 961	-2.2 ²
Indirect	10 036	9 762	10 066	10 477	11 107	11 000	
Total	18 227	17 605	18 029	18 393	19 245	18 961	

Source: NBB.

¹ For a definition of contribution to growth in percentage points, see [Annex 2.1](#).

² Percentage change compared to the previous year.

Direct employment in the Liège port complex decreased by 2.2% in 2020, mainly **due to the negative contribution by the metalworking industry** (-2.2 p.p. to total change) **and other non-maritime branches** (-0.4 p.p.), partially offset by a **positive contribution** from the **shipping agents and forwarders** (+0.5 p.p.).

In 2020, the reduced employment level in the **metalworking industry** partly came from fewer jobs at John Cockerill⁵³, a subsidiary of the John Cockerill Group, while the employment at Liberty Liège Dudelange – the Belgian subsidiary of the British Liberty Steel group – did not flourish as much as expected, possibly due to the lower demand for steel as a result of the COVID-19 crisis. It should be recalled that, back in 2019, under pressure from the EU competition authority, a part of ArcelorMittal Belgium's Liège activity was transferred to the newly created entity Liberty Liège Dudelange, part of the British Liberty Steel Group.

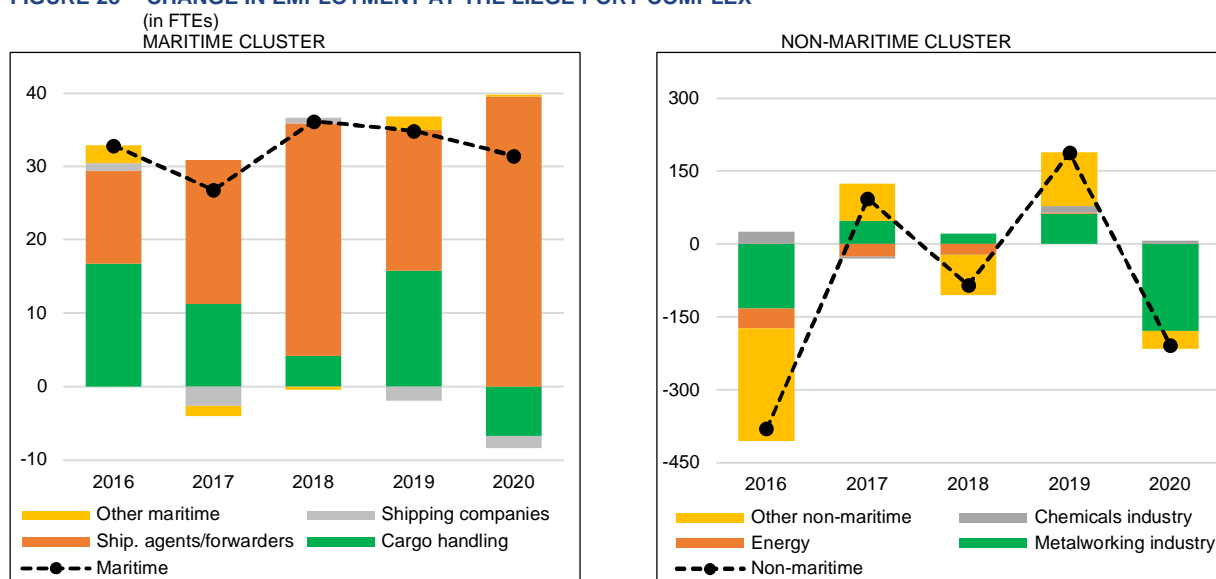
Job losses in the other non-maritime branches were mainly caused by reduced employment in **construction** due to COVID-19 and the lockdown measures.

Shipping agents and forwarders generated extra jobs in 2020 (contribution of +0.5 p.p. to total change). After a drop in the second quarter in 2020, a revival took place in ECDC Logistics, a firm specialised in cross border e-commerce, mainly from China. Smartvalue also hired extra staff in 2020 to reinforce the operational side of the business of Newpharma.

⁵² More details for all component economic sectors, together with their shares and changes over time are noted in Annex 4 [table 4.5.2](#).

⁵³ In May 2019, Cockerill Maintenance & Ingenierie became John Cockerill again, like the original name when founded in 1817.

FIGURE 28 CHANGE IN EMPLOYMENT AT THE LIÈGE PORT COMPLEX



The ten biggest companies in terms of full-time equivalents, mentioned in [Table 48](#), represented 62% of all full-time equivalents employed directly in the Liège port complex in 2020. Direct employment accounted for 0.2% of Belgian domestic employment or 0.7% of all employment in the Walloon Region in 2020. Total employment, including indirect job creation, accounted for 0.4% of Belgian domestic employment.

Like the fall in direct employment, indirect employment declined but at a slower pace. This negative trend is down to the metalworking industry, partly offset by higher indirect employment in the chemicals industry. The multipliers in both branches were higher than those in other branches. Less jobs in the metalworking branch led to even stronger job losses in the supplier companies delivering inputs, while additional jobs in the chemicals industry implied even stronger job creation in the supply chain.

TABLE 48 TOP 10 EMPLOYMENT AT THE LIÈGE PORT COMPLEX

Rank	Name	Sector
1	Electrabel	Energy
2	John Cockerill	Metalworking industry
3	Prayon	Chemicals industry
4	ArcelorMittal Belgium	Metalworking industry
5	Liberty Liège - Dudelange (BE)	Metalworking industry
6	Association Intercommunale de Traitement des Déchets Liégeois	Other industries
7	Cimenteries CBR Cementbedrijven	Construction
8	N. et B. Knauf et Cie	Construction
9	Arjemo	Other logistic services
10	Carrières et Fours à Chaux Dumont-Wautier	Construction

Source: NBB.

2.5.4 Investment

[Table 49](#) notes the investment⁵⁴ levels at the Liège port complex over the 2015-2020 period. **In 2020, investment rose by 3.8%** from €210 million to €218 million. 95% of the investment at the Liège port complex in 2020 came from the non-maritime cluster. The energy sector invested the most, accounting for 36% of all sums invested. The chemicals industry was ranked second with a share of 17%.

TABLE 49 INVESTMENT AT THE LIÈGE PORT COMPLEX
(in € million)

	2015	2016	2017	2018	2019	2020	Contribution to growth (p.p.) ¹ 2019-2020
Public sector	3.4	0.3	0.8	1.2	2.3	4.6	1.1
Cargo handling	3.0	7.0	3.6	4.0	4.3	3.5	-0.3
Shipping agents and forwarders	0.6	0.9	2.2	0.8	0.4	1.7	0.6
Other maritime	1.1	0.6	0.9	0.7	0.8	1.2	0.2
Maritime	8.1	8.7	7.6	6.8	7.8	11.0	1.5
Energy	93.4	66.4	63.6	75.2	58.9	78.7	9.4
Chemicals industry	31.4	31.8	30.2	40.3	40.3	37.3	-1.4
Metalworking industry	27.3	35.2	55.8	43.6	32.5	18.6	-6.6
Other non-maritime	59.1	54.5	75.0	70.5	70.8	72.5	0.8
Non-maritime	211.1	187.9	224.6	229.5	202.5	207.2	2.2
Direct	219.2	196.6	232.2	236.4	210.3	218.2	3.8 ²

Source: NBB.

¹ For a definition of contribution to growth in percentage points, see [Annex 2.1](#).

² Percentage change compared to the previous year.

Note: The pattern of investment is closely linked to individual projects and is therefore highly volatile, so the figures require a cautious interpretation.

Both investment in the maritime and non-maritime cluster contributed positively to the total investment growth in 2020, respectively 1.5 p.p. and 2.2 p.p.

The investment rise in the maritime cluster resulted from higher investment figures from the **public sector** and **shipping agents and forwarders**, respectively contributing 1.1 p.p. and 0.6 p.p. to the total change. The Walloon Region invested in infrastructure projects for new docks, roads and railways. More precisely, a new dock wall is under construction in the Hermalle-sous-Huy industrial zone, which is particularly important for port development as it borders the waterway with at least three hectares of industrial land which belongs to SPI, the development agency of the Province of Liège. The other big investment came from ECDC Logistics to improve its cross-border e-commerce services.

The expanding investment volumes in the non-maritime cluster were due to higher investment in the **energy sector** (contribution of 9.4 p.p. to total growth), partly offset by lower sums invested in **metalworking** (contribution of -6.6 p.p.) and **the chemicals industry** (share of -1.4 p.p.).

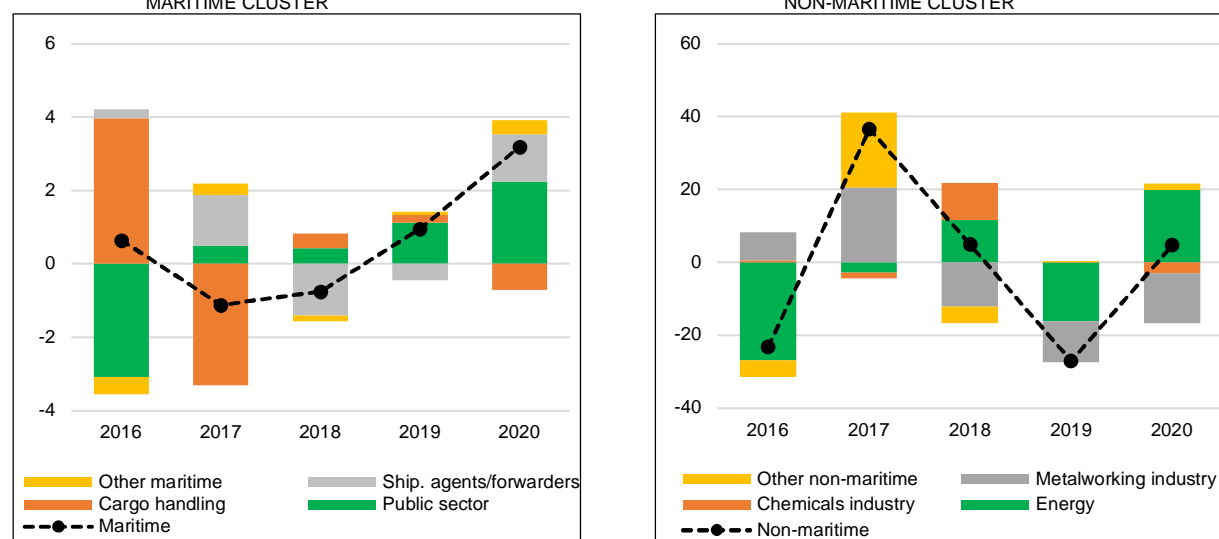
Electrabel made extra investments in 2020 in the ongoing modernisation of the nuclear power production facilities in order to extend the service life of the Tihange 1 reactors and to store spent fuel at the Tihange site. Lower investment levels in the **metalworking industry** were notably due to ArcelorMittal Belgium, the biggest metalworking company in Liège. Because of the COVID-19 crisis and the closure of some of its customers, ArcelorMittal Belgium adjusted not only its production capacity, but also its investment level, although the amounts were still high. The same happened at John Cockerill, the other big metalworking company established in Liège. In 2020, the aggregated investment figure in the **chemicals industry** declined after a return to a more normal investment level following a major investment project at SILOX Engis – a producer of sulphur dioxide, sodium hydrosulphite-based reducing agents and an extensive range of zinc oxides – to replace its sulphur oven.

⁵⁴ More details, together with the respective shares of the component economic sectors and their changes over the years, are shown in [table 4.5.3](#) in Annex 4.

The top ten companies in terms of investment are listed in [Table 50](#) and accounted for 79% of all investment in the Liège port complex in 2020.

FIGURE 29 CHANGE IN INVESTMENT AT THE LIÈGE PORT COMPLEX

(in € million, current prices)



Source: NBB.

TABLE 50 TOP 10 INVESTMENT AT THE LIÈGE PORT COMPLEX

Rank	Name	Sector
1	Electrabel	Energy
2	Prayon	Chemicals industry
3	Raffinerie Tirlemontoise - Tiense Suikerraffinaderi	Food industry
4	Biowanze	Fuel production
5	ArcelorMittal Belgium	Metalworking industry
6	EDF Luminus	Energy
7	Association Intercommunale de Traitement des Déchets Liégeois	Other industries
8	Cimenteries CBR Cementbedrijven	Construction
9	Public sector	Public sector
10	Carrières et Fours à Chaux Dumont-Wautier	Construction

Source: NBB.

2.6 Port of Brussels

2.6.1 Port developments⁵⁵

With more than 4.9 million tonnes of transshipments in 2020, the 5.3% decline in maritime traffic is minimal, considering that the lockdown in the first quarter of 2020 had led to a sharp slowdown in port activity in Brussels and that, in the past, only the year 2018 and 2019 had exceeded 5 million tonnes of goods transported. The top three product categories traded at the port of Brussels remained unchanged from the previous year: building materials (-5.3%), petroleum products (-7.7%) and containers (-4.4%). The suspension of work on construction sites and the reduced number of moves during the spring lockdown explained the fall in transshipped building materials and petroleum products in 2020.

In 2021, maritime traffic at the port of Brussels reached a record level of 5.5 million tonnes since the establishment of the regional partnership of the Port of Brussels in 1993, **a growth rate of 10.3%** compared to 2020. Almost all types of goods recorded higher volumes. Building materials (+8%) remained by far the biggest user of Brussels waterways. It should be noted that this category includes the excavated land on Brussels construction sites which is being moved over water and for which the Port of Brussels is drawing up a work management plan to develop this type of transport by waterway. Next come petroleum products and containers in the top three product types traded at the port. While most product categories return to their pre-crisis level, the increase in container transport (+31% tonnage compared to 2020) is exceptional, partly explained by the resumption of consumption from May 2021, but also by the dynamics of the new container terminal operator.

TABLE 51 MARITIME TRAFFIC AT THE PORT OF BRUSSELS
(in millions of tonnes)

	2018	2019	2020	2021	Change (%) 2019-2020	Change (%) 2020-2021
Total	5.2	5.2	4.9	5.5	-5.3	10.3

Source: Port authority.

The growing traffic on the waterway has a beneficial impact on the environment, as it represents a saving of 664 000 lorries in and around Brussels throughout 2021, 103 000 tonnes less CO₂ in the atmosphere and €26 million less external costs. The transport of goods by water is therefore clearly in line with the Brussels Government's climate objectives, namely carbon neutrality in 2050. As transport is one of the main causes of greenhouse gas emissions in the Brussels-Capital Region, logistics action is an essential lever for freeing Brussels from carbon.

2.6.2 Value added

Direct value added at the port of Brussels in 2020 was mainly generated in the non-maritime cluster (97%): other logistic services accounted for 58% of value added and trade, as the second biggest branch, provided 18%. [Table 52](#) gives direct and indirect value added⁵⁶ at the port of Brussels over the period 2015-2020.

Direct value added in the port of Brussels fell strongly by 17.1% to €696.6 million in 2020, owing to other logistic services and trade: contributing 15.1 p.p. and 3.4 p.p. respectively to the total decline. Plastic Omnium Advanced Innovation and Research, an important logistic service company in Brussels in charge of innovations related to the group's on-board energy systems and emission reduction systems, generated less value added because of a negative operating result in 2020 due to declining revenues

⁵⁵ Sources: [Port of Brussels](#).

⁵⁶ [Table 4.6.1](#) in Annex 4 reveals the details of the component economic sectors, their shares and changes over the years.

while costs did not fall at the same pace. The drop in trade can mainly be explained by Solvay Chemicals International, a big wholesaler of chemical products for industrial use, whose operating result fell sharply due to lower sales volumes and reduced sales margins as the impact of the COVID-19 crisis was felt.

In 2020, the top ten companies in terms of value added ([Table 53](#)) account for 69% of the direct value added generated in the port of Brussels.

The reduction in indirect value added followed the drop in direct value added albeit to a lesser extent, since other logistic services and trade have a small multiplier, implying that lower value added in those branches definitely leads to less value added in its supplier companies but on a smaller scale.

In 2020, direct value added accounted for 0.8% of the GDP of the Brussels-Capital Region and 0.2% of Belgian GDP. Total value added, including indirect effects, accounted for 0.2% of Belgian GDP.

TABLE 52 VALUE ADDED AT THE PORT OF BRUSSELS
(in € million)

	2015	2016	2017	2018	2019	2020	Contribution to growth (p.p.) ¹ 2019-2020
Shipping agents and forwarders	12.4	10.7	9.2	7.8	6.8	8.2	0.2
Port authority	6.0	4.7	5.5	4.5	4.6	6.5	0.2
Cargo handling	6.3	6.5	5.0	5.4	5.4	4.9	-0.1
Other maritime	-1.9	0.2	0.3	2.1	1.4	2.0	0.1
Maritime	22.6	22.1	20.0	19.8	18.2	21.7	0.4
Other logistic services	443.8	390.7	525.8	507.1	533.4	407.0	-15.1
Trade	196.7	178.7	148.7	141.7	154.7	126.5	-3.4
Other industries	48.4	58.5	61.7	60.1	57.1	56.6	-0.1
Other non-maritime	93.2	90.7	97.9	76.4	76.4	84.8	1.0
Non-maritime	782.1	718.6	834.1	785.3	821.6	674.9	-17.5
Direct	804.8	740.8	854.1	805.1	839.9	696.6	-17.1 ²
Indirect	480.1	469.0	503.5	473.3	486.9	425.7	
Total	1 284.8	1 209.8	1 357.6	1 278.4	1 326.7	1 122.3	

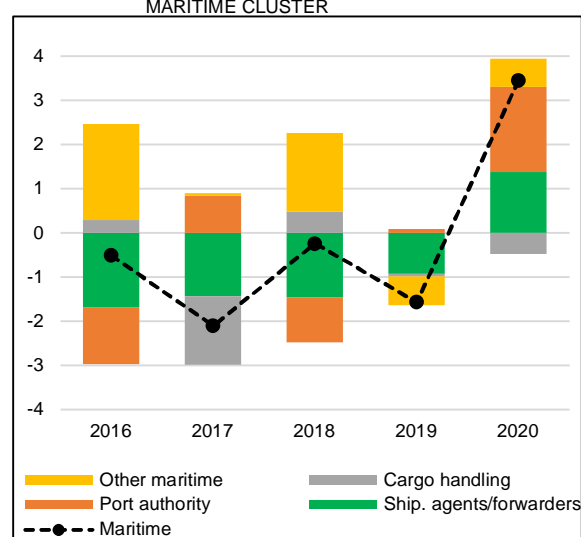
Source: NBB.

¹ For a definition of contribution to growth in percentage points, see [Annex 2.1](#).

² Percentage change compared to the previous year.

FIGURE 30 CHANGE IN VALUE ADDED AT THE PORT OF BRUSSELS

(in € million, current prices)



Source: NBB.

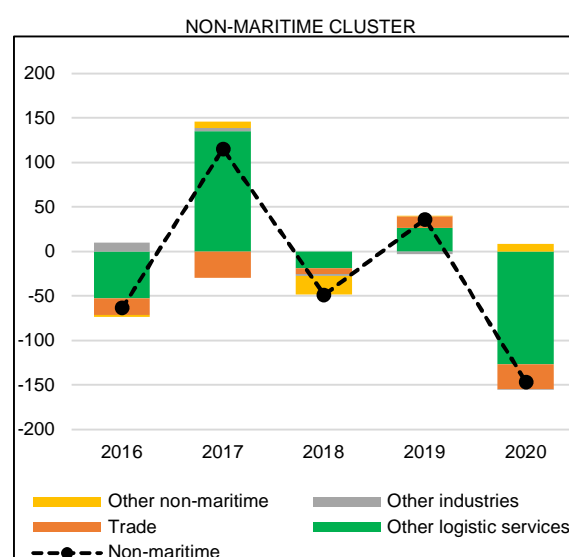


TABLE 53 TOP 10 VALUE ADDED AT THE PORT OF BRUSSELS

Rank	Name	Sector
1	Solvay	Other logistic services
2	Plastic Omnium Advanced Innovation and Research	Other logistic services
3	Aquiris	Other industries
4	INEOS Services Belgium	Other logistic services
5	Solvay Specialty Polymers Belgium	Chemicals industry
6	Corden Pharma Brussels	Chemicals industry
7	Bruxelles Energie - Brussel Energie	Other industries
8	Scania Belgium	Trade
9	Solvay Chemicals International	Trade
10	TotalEnergies Marketing Belgium	Trade

Source: NBB.

2.6.3 Employment

[Table 54](#) shows that **direct employment⁵⁷ at the port of Brussels declined by 66 full-time equivalents in 2020 (-1.7%)**. Like in the case of value added, most of the employment at Brussels' port was generated in the non-maritime cluster (92%): one-third in other logistic services and 27% in the trade segment.

TABLE 54 EMPLOYMENT AT THE PORT OF BRUSSELS
(in FTEs)

	2015	2016	2017	2018	2019	2020	Contribution to growth (p.p.) ¹ 2019-2020
Port authority	125	123	122	120	125	126	0.0
Shipping agents and forwarders	179	136	114	109	115	111	-0.1
Cargo handling	87	84	54	55	56	51	-0.1
Other maritime	21	23	18	19	20	17	-0.1
Maritime	412	367	309	304	316	304	-0.3
Other logistic services	1 216	1 222	1 265	1 241	1 247	1 264	0.4
Trade	1 388	1 274	1 166	1 101	1 027	1 005	-0.6
Other industries	352	369	351	354	364	350	-0.4
Other non-maritime	902	860	866	875	845	812	-0.9
Non-maritime	3 859	3 725	3 648	3 572	3 484	3 431	-1.4
Direct	4 271	4 091	3 957	3 876	3 801	3 735	-1.7 ²
Indirect	3 817	3 541	3 305	3 258	3 159	3 110	
Total	8 088	7 633	7 262	7 134	6 959	6 845	

Source: NBB.

¹ For a definition of contribution to growth in percentage points, see [Annex 2.1](#).² Percentage change compared to the previous year.

The fall in direct employment in 2020 was entirely **attributable to the drop** in the non-maritime sector, and more precisely to the decline **in trade, construction, metalworking and other industries** (respectively contributing, -0.6 p.p., -0.5 p.p., -0.4 p.p. and -0.4 p.p. to total change), while being **partly counterbalanced** by small growth in the other logistic services (contribution of +0.4 p.p. to total change).

The job losses in trade and construction stemmed from many small firms cutting back their staff numbers while some establishments moved away from the geographical port zone. The drop in employment in the metalworking industry came mainly from less jobs at Feneko, a producer of aluminum door panels and

⁵⁷ [Table 4.6.2](#) in Annex 4 gives details on employment figures at the port of Brussels, together with the respective shares of the branches and their change over time.

windows, while another metalworking firm moved its subsidiary established in Brussels to an area outside the port zone. Fewer jobs in the other industry segment were mainly explained by A. Stevens & Co, a recycler of metal scrap, acquired at the beginning of 2020 by another company established outside the geographical site of the port of Brussels.

The other logistic services experienced a small growth in employment (+17 jobs) although their aggregated amount of value added dropped by €126 million in 2020 compared to 2019. Additional recruits by Solvay, INEOS Services Belgium and Loxam – lessor of equipment for construction professionals – explained the job gain.

The ten biggest employers ([Table 55](#)) accounted for 46% of all full-time equivalents employed directly in the port of Brussels in 2020. Indirect employment fell at a similar pace to direct employment. The same segments (trade, construction, trade, metal working and other industries) explained the reduction. Direct employment represented 0.6% of employment in the Brussels-Capital Region and 0.1% of Belgian domestic employment. Total employment, including indirect workplaces, accounted for 0.2% of Belgian domestic employment.

FIGURE 31 CHANGE IN EMPLOYMENT AT THE PORT OF BRUSSELS
(in FTEs)

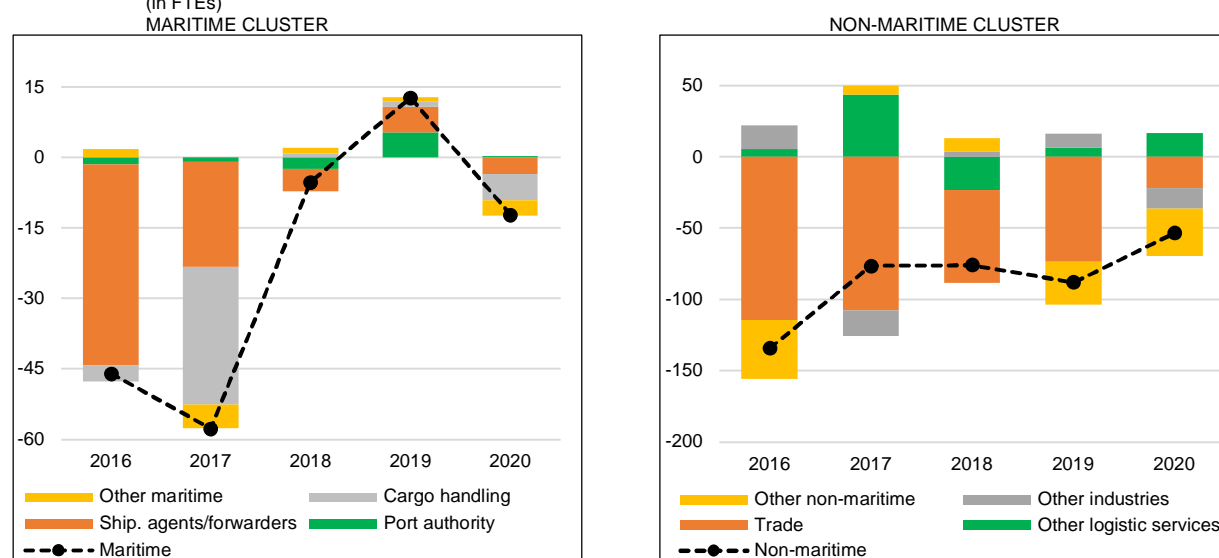


TABLE 55 TOP 10 EMPLOYMENT AT THE PORT OF BRUSSELS

Rank	Name	Sector
1	Solvay	Other logistic services
2	Brussels Port Authority	Port authority
3	Plastic Omnium Advanced Innovation and Research	Other logistic services
4	INEOS Services Belgium	Other logistic services
5	Scania Belgium	Trade
6	Suez R&R Be North	Other industries
7	Loomis Belgium	Other logistic services
8	Ziegler	Road transport
9	Ceres	Food industry
10	Corden Pharma Brussels	Chemicals industry

Source: NBB.

2.6.4 Investment

[Table 56](#) notes the investment⁵⁸ levels at the port of Brussels over the 2015-2020 period. **In 2020, investment fell sharply by 56.9%** from €102 million to €44 million. The drop came mainly from the reduced amounts invested by the non-maritime cluster, more precisely by the other logistic services. While, in 2019, half of the sums invested in the Brussels port came from other logistic services, this branch accounted for only a quarter of the total investment amount in 2020.

Investment figures dropped in each segment, which is no surprise knowing that 2020 was a strange year because of the COVID-19 pandemic. **The fall was most severe in the other logistic services**, contributing 45 p.p. to the total drop, as a result of lower investment volumes in 2020 by Solvay and Plastic Omnium Advanced Innovation and Research. This company had moved in 2019 to a new R&D centre that it took over, which explains the return of investment to a more normal level in 2020.

Lower investment figures in other non-maritime branches were explained by lower investment in road transport, the chemicals industry and energy (contributing respectively -3.3 p.p., -2.7 p.p. and -2.5 p.p. to total change). Ziegler, a big road transport operator, acquired a completely new building in 2019, and returned its investment figure to a more normal level in 2020. In two of the three largest chemicals companies in the Brussels port area, investment sums fell by two-thirds. In 2020, Go4Green Project Financing, a producer of electricity at the Brussels port area, was acquired by a new entity Go4Green, established outside the port site. Consequently, the acquired entity and its investment level left the Brussels port population.

Investment in the maritime cluster declined due to lower sums invested by the port authority and cargo handling, which reflected a negative contribution of respectively -0.8 p.p. and -0.5 p.p. to the total change in 2020. The latter figure refers to a return to a more normal investment level in 2020 after strong growth of one company's investment (Fri-Agra) in its installations, machinery and tools in 2019.

In terms of investment, the top ten companies accounted in 2020 for 55% of the total investment amount at the port of Brussels.

TABLE 56 INVESTMENT AT THE PORT OF BRUSSELS
(in € million)

	2015	2016	2017	2018	2019	2020	Contribution to growth (p.p.) ¹ 2019-2020
Port authority	7.5	9.0	9.0	5.5	4.9	4.1	-0.8
Public sector	3.7	8.8	8.6	3.7	3.4	3.3	-0.1
Cargo handling	3.3	1.3	1.5	1.5	2.3	1.8	-0.5
Other maritime	5.3	1.1	1.4	2.3	0.6	0.7	0.1
Maritime	19.9	20.3	20.5	13.0	11.3	9.9	-1.3
Trade	16.0	19.8	12.8	14.5	12.0	11.9	-0.1
Other logistic services	17.7	11.9	28.8	56.2	57.6	11.6	-45.0
Other industries	1.7	13.2	2.1	8.3	5.2	3.8	-1.4
Other non-maritime	9.7	11.2	8.6	13.8	16.0	6.7	-9.1
Non-maritime	45.2	56.2	52.3	92.8	90.8	34.0	-55.6
Direct	65.1	76.4	72.8	105.8	102.1	44.0	-56.9 ²

Source: NBB.

¹ For a definition of contribution to growth in percentage points, see [Annex 2.1](#).

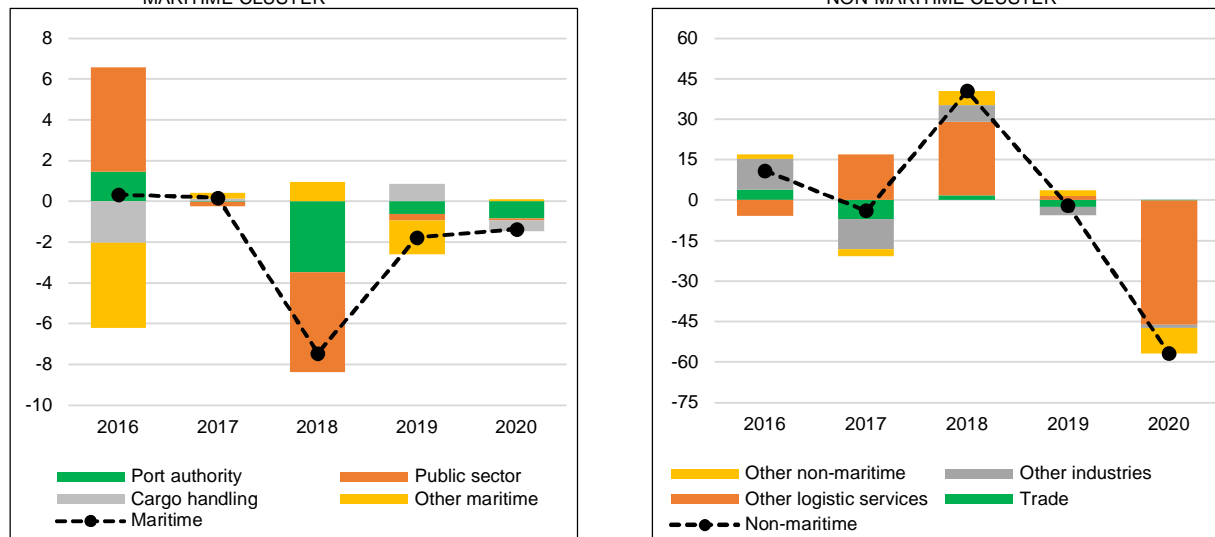
² Percentage change compared to the previous year.

Note: The pattern of investment is closely linked to individual projects and is therefore highly volatile, so the figures require a cautious interpretation.

⁵⁸ More details, together with the respective shares of the component economic sectors and their changes over the years, are shown in [table 4.6.3](#) in Annex 4.

FIGURE 32 CHANGE IN INVESTMENT AT THE PORT OF BRUSSELS

(in € million, current prices)



Source: NBB.

TABLE 57 TOP 10 INVESTMENT AT THE PORT OF BRUSSELS

Rank	Name	Sector
1	Solvay	Other logistic services
2	Brussels Port Authority	Port authority
3	Public sector	Public sector
4	Bruxelles Energie - Brussel Energie	Other industries
5	Plastic Omnium Advanced Innovation And Research	Other logistic services
6	Van Lier	Trade
7	Caspian Tradition	Trade
8	Bulk Cargo Handling	Cargo handling
9	Scania Belgium	Trade
10	Suez R&R Be North	Other industries

Source: NBB.

2.7 Outside port zone

2.7.1 Description

While companies in the maritime cluster have a direct operational link with port activity, they are not necessarily situated in the port zone. Firms operating in the shipping companies, cargo-handling, shipbuilding and repair branches and the fishing and fisheries industry are considered as members of the port population, no matter the address of their location in Belgium since their activity is sufficiently precise to link them to port activity. Some entities can be associated with one of the Belgian ports, others cannot and are therefore classified as “outside port zone”. An example is Vlaamse Waterweg, which builds, maintains and operates locks, bridges, dams and (un)loading quays, while it also carries out dredging work to maintain depths. This company clearly delivers activity ancillary to maritime and inland waterway transport, classified in the cargo-handling branch in the outside port zone, because its establishments are not located within the Belgian geographical port zones, as described in the methodology (Lagneaux, 2006).

In 2020, the pool of maritime firms outside the port area consisted of 355 companies, from which 19 were big companies filing the full annual accounts format, while the others were small entities filing an abbreviated or micro format. The number of maritime companies established in the outside port zone remained quite stable over the period 2015-2020.

Between 2015 and 2020, 97 companies migrated in the port population as a maritime entity in the outside port zone, of which 48 of them were start-ups. The others came in as an existing shipping company, cargo handler, shipbuilder or fisher but were no longer located in one of the six defined geographical port areas in Belgium or they changed their main operational activity to one of the four maritime activities mentioned in [Table 58](#), while not being located in the geographical port areas considered in the port study. During the same period, 98 maritime companies in the outside port zone migrated out. 38 of them disappeared because of business restructuring (7), bankruptcy (30) or stopping activity (1). The others moved to one of the six Belgian port areas or changed their activity to something different from the four sea-based branches specified in [Table 58](#).

TABLE 58 OVERVIEW OF THE OUTSIDE PORT ZONE ENTITIES

	Active 2015	Active 2020	Migrate-in	Migrate-out	Start-ups	Departures	Restructuring	Failure
Shipping companies	153	146	32	39	19	20	4	15
Cargo handling	77	81	24	20	11	6	2	4
Shipbuilding and repair	71	71	30	30	15	7	0	7
Fishing and fisheries industry	55	57	11	9	3	5	1	4
Maritime	356	355	97	98	48	38	7	30

Source: NBB.

Notes:

- Migrate-in: new arrival in port population since 2016
- Migrate-out: left port population during 2016-2020
- Start-ups: newly created since 2016
- Departures: left port population because of restructuring, bankruptcy or stopping their operational activity
- Restructuring: merger or split
- Failure: opening of bankruptcy proceedings and bankruptcies itself.

The value added generated by those maritime firms in the outside port zone, their workers employed and their investment projects implemented, will no longer be assigned and allocated to the four Flemish seaports, as was done in the past, but will from now on be reported in a separate section.

2.7.2 Value added

[Table 59](#) displays direct and indirect value in the outside port zone over the years 2015-2020. 43% of the total direct value added in 2020 was generated by the shipping companies, while the fishing and fisheries industry represented 29%.

Since 2018, total direct value added has dropped substantially, not least after the cargo handling company Vlaamse Waterweg took over the loss-making business Waterwegen en Zeekanaal, dampening its operating result and thus influencing the aggregate level of value added for the cargo-handling business as a whole. In 2019, the shipping companies experienced a considerable drop in their value added as well, mainly due to Maya Maritime that sold its ship Excellence and thus stopped its activity as ship owner. Two other ship operators, Exemplar and Exquisite, also stopped their business, altogether explaining the decline in value added in 2019.

TABLE 59 VALUE ADDED AT THE OUTSIDE PORT ZONE
(in € million)

	2015	2016	2017	2018	2019	2020	Contribution to growth (p.p.) ¹ 2019-2020
Shipping companies	85.5	86.4	85.3	72.7	49.3	34.7	-17.3
Fishing and fisheries industry	22.3	26.3	23.4	24.2	21.6	23.3	1.9
Shipbuilding and repair	12.7	11.6	14.3	15.3	16.5	13.6	-3.5
Cargo handling	17.8	29.1	22.4	-2.2	-3.1	9.2	14.6
Direct	138.3	153.4	145.3	109.9	84.4	80.8	-4.3 ²
Indirect	106.7	123.2	102.0	77.6	54.8	49.5	
Total	245.0	276.6	247.3	187.5	139.2	130.3	

Source: NBB.

¹ For a definition of contribution to growth in percentage points, see [Annex 2.1](#).

² Percentage change compared to the previous year.

In 2020, direct value added fell by 4.3% to €80.8 million in 2020, owing to the **drop in shipping companies and shipbuilding and repair**, contributing respectively -17.3 p.p. and -3.5 p.p. to total change. The largest reduction came from one big shipping company (Expedient) which went bankrupt. The second figure was mainly attributable to the Meuse et Sambre shipyard which experienced reduced demand for the construction of new cruise ships because of the huge impact the pandemic had on tourism. This led to a negative operating result, dragging down value added.

The cargo-handling business contributed positively to the total change (14.6 p.p.) due to Vlaamse Waterweg whose improved operating result and higher wage costs (due to the use of additional temporary contracts) explained the increase in value added.

The fall in indirect value added is slightly larger than the decline in direct value added, due to shipbuilding and repair, a branch whose multiplier is higher than those for the other branches, meaning that a drop in its direct value added generated bigger losses in the value added of its supplier sectors.

2.7.3 Employment

In 2020, cargo handling employed almost three quarters of the workforce outside the port zone. The biggest employer is the Vlaamse Waterweg – responsible for optimising the waterway network, for supplying an appropriate water management in Flanders and for investing in innovative transport and transshipment concepts.

The full-time equivalents in the outside port zone stayed almost stable in 2020 compared to 2019, with a small increase of 18 full-time equivalents particularly owing to more jobs in the fishing and fisheries

industry due to two fishing companies that moved out of the geographical port area of Ostend to the outside port zone.

In 2020, indirect employment in the outside port zone went down despite a slight increase in direct employment, owing to fewer jobs in cargo handling, which led to even more job losses in supplier companies.

TABLE 60 EMPLOYMENT AT THE OUTSIDE PORT ZONE
(in FTEs)

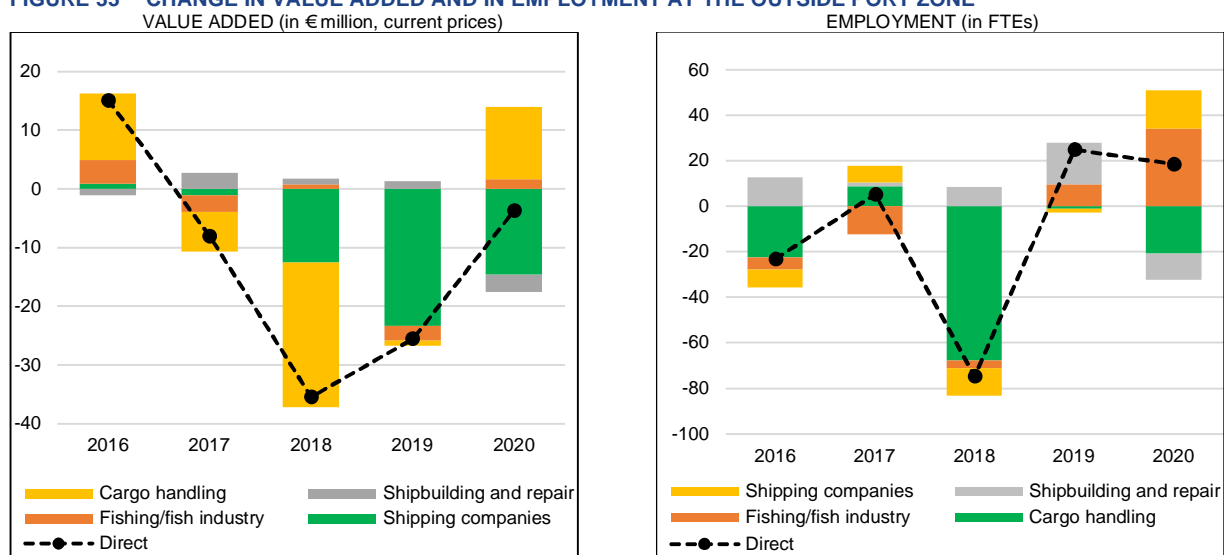
	2015	2016	2017	2018	2019	2020	Contribution to growth (p.p.) ¹ 2019-2020
Cargo handling	1 553	1 531	1 540	1 472	1 471	1 450	-1.0
Fishing and fisheries industry	202	196	184	181	190	224	1.7
Shipbuilding and repair	161	173	175	183	202	190	-0.6
Shipping companies	134	126	134	122	120	137	0.8
Direct	2 050	2 027	2 032	1 958	1 983	2 001	0.9 ²
Indirect	2 203	2 287	2 263	2 157	2 254	2 234	
Total	4 253	4 314	4 296	4 115	4 237	4 235	

Source: NBB.

¹ For a definition of contribution to growth in percentage points, see [Annex 2.1](#).

² Percentage change compared to the previous year.

FIGURE 33 CHANGE IN VALUE ADDED AND IN EMPLOYMENT AT THE OUTSIDE PORT ZONE



Source: NBB.

2.7.4 Investment

Over the 2015-2019 period, the aggregate investment level in the outside port zone was quite stable, while the figure surged by 69.7% from €241 million to €409 million in 2020 mainly due to higher investment figures from the cargo handlers since Vlaamse Waterweg invested more in modernising existing infrastructure, implementing quay wall projects and developing extraordinary infrastructure works. Climate change is forcing Vlaamse Waterweg to increase its investment in water management: projects for both limiting the risks of water shortages (e.g. pumping facilities on the Albert Canal) and preventing floods (the Sigma Plan and dredging works) are high on the agenda.

TABLE 61 INVESTMENT AT THE OUTSIDE PORT ZONE
(in € million)

	2015	2016	2017	2018	2019	2020	Contribution to growth (p.p.) ¹ 2019-2020
Cargo handling	189.9	213.3	211.2	239.9	195.9	351.4	64.5
Shipping companies	25.0	17.9	31.0	31.0	29.7	29.6	0.0
Fishing and fisheries industry	5.4	3.9	8.4	7.3	10.8	22.1	4.7
Shipbuilding and repair	1.1	1.9	1.7	2.3	4.7	6.0	0.5
Direct	221.4	237.0	252.3	280.4	241.1	409.1	69.7 ²

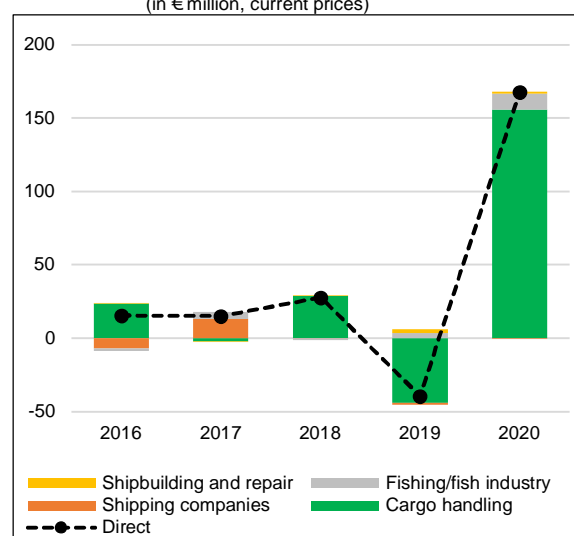
Source: NBB.

¹ For a definition of contribution to growth in percentage points, see [Annex 2.1](#).

² Percentage change compared to the previous year.

Note: The pattern of investment is closely linked to individual projects and is therefore highly volatile, so the figures require a cautious interpretation.

FIGURE 34 CHANGE IN INVESTMENT AT THE OUTSIDE PORT ZONE
(in € million, current prices)



Source: NBB.

3 CONCLUSION

In 2020, almost all governments around the world took unprecedented health and safety measures to slow down the spread of the COVID-19 virus. Only one lockdown proved insufficient. Relapses led to the reintroduction of restrictive measures. The landscape for international maritime transport and trade was upended, and in Belgium too. In 2020, maritime transshipments fell by 3.4% in all Belgian ports together. The negative change was evident in each port except for Zeebrugge.

Supply chain disruptions, demand contractions and economic uncertainty caused by the pandemic affected direct value added at Belgian ports adversely (-1.2%) in 2020. The decline was less severe than the drop in total value added (-4%) for the entire Belgian economy in 2020 compared to 2019, owing to maritime activities not being negatively impacted as they were not subject to the coronavirus restrictions provided that the required health and safety measures were met. The drop was all the more visible in the non-maritime cluster, and more precisely in those branches hit most by the temporary imposed closure of businesses or impaired particularly by demand and supply shocks. The main non-maritime branches responsible for the decline, were trade, metalworking industry and other logistic services. Indirect value added figures fell even more strongly (-2.7%) due to falling direct effects in these branches on the one hand and a large multiplier for fuel production on the other hand. Total value added (including direct and indirect effects) came to €31.7 billion in 2020, accounting 7% of Belgian GDP.

Despite the pandemic, direct employment at Belgian ports remained quite stable in 2020, with only 184 FTEs lost. Direct and indirect employment reached 254 611 full-time equivalents, accounting for 5.9% of Belgian domestic employment. The temporary lay-off system, more flexible during the crisis, played a vital role in avoiding redundancies. Job losses in the port population were especially evident in the non-maritime cluster because the maritime activities were considered as essential and allowed to operate continuously.

In 2020, direct investment by all Belgian ports taken together rose by 5.1% to a level of €5.1 billion in 2020, due to higher increasing investment volumes in the chemicals industry and cargo handling. Those investment decisions had already been taken before the COVID-19 outbreak and were followed up as those branches were not substantially impaired by the crisis. The investment degree indicates that among the maritime businesses, shipping companies and port authorities invest relatively more given the competitive businesses in which they operate. In the non-maritime cluster, especially in the energy sector and the industrial branches, whose operational activity is largely based on high technological knowledge and whose business is largely subject to future developments, a relatively high degree of investment is observed.

During the pandemic, total turnover figures fell. It was difficult to scale costs down in line with falling sales at such short notice because of high fixed costs. So, the profitability level of the median port company declined in 2020. However, while strong-performing port companies experienced a drop, weaker businesses enhanced their profitability thanks to the generous government support measures. Direct and indirect support for wage payments and (para)fiscal transfers helped port companies to maintain or even slightly strengthen their liquidity position, while their solvency was shored up too. Observations indicate that the policy actions taken to keep businesses afloat had a particular focus on companies that were viable prior to the pandemic.

In 2020, the business start-up and departure ratios dropped drastically, implying that although Belgian ports were impacted by the COVID-19 pandemic, various temporary government support measures and moratoria on insolvencies prevented companies from going bankrupt, leading to no additional increases in departures, nor extra company failures compared to previous years. The economic uncertainty clouded the environment for new port companies to start up.

List of abbreviations

BNRC	Belgian National Railway Company
EU	European Union
FTE	Full-time equivalent
GDP	Gross domestic product
GT	Gross tonnage
IOT	Input-Output Table
NAI	National Accounts Institute
NBB	National Bank of Belgium
SMEs	Small and medium-sized enterprises
SUT	Supply and Use Table
TEU	Twenty-foot Equivalent Unit

List of Tables

Table 1	GDP of the main economies and of Belgium	12
Table 2	Cargo traffic in the Belgian ports	13
Table 3	Maritime traffic in the Flemish ports in 2019-2020	14
Table 4	Total maritime traffic in the Hamburg - Le Havre range.....	16
Table 5	Cargo traffic by ship in the ports of Duisburg, Paris, Liège and Brussels.....	16
Table 6	Demography of Belgian ports for the period 2015-2020.....	19
Table 7	Overview of value added by port	20
Table 8	Overview of value added by branch of activity	21
Table 9	Overview of employment by port	25
Table 10	Overview of employment by branch of activity	25
Table 11	Overview of investment by port	26
Table 12	Overview of investment by branch of activity	27
Table 13	Return on assets by port.....	31
Table 14	Narrow Liquidity ratio per port.....	36
Table 15	Financial independence per port	39
Table 16	Maritime traffic at the port of Antwerp.....	40
Table 17	Value added at the port of Antwerp	42
Table 18	Top 10 value added at the port of Antwerp	43
Table 19	Employment at the port of Antwerp	44
Table 20	Top 10 employment at the port of Antwerp	46
Table 21	Investment at the port of Antwerp.....	46
Table 22	Top 10 investment at the port of Antwerp	48
Table 23	Maritime traffic at North Sea Port Flanders	49
Table 24	Value added at North Sea Port Flanders	51
Table 25	Top 10 value added at North Sea Port Flanders	52
Table 26	Employment at North Sea Port Flanders.....	53
Table 27	Top 10 employment at North Sea Port Flanders	54
Table 28	Investment at North Sea Port Flanders	55
Table 29	Top 10 investment at North Sea Port Flanders.....	56
Table 30	Maritime traffic at the port of Zeebrugge	57
Table 31	Value added at the port of Zeebrugge.....	59
Table 32	Top 10 value added at the port of Zeebrugge.....	60
Table 33	Employment at the port of Zeebrugge.....	61
Table 34	Top 10 employment at the port of Zeebrugge.....	62
Table 35	Investment at the port of Zeebrugge	63
Table 36	Top 10 investment at the port of Zeebrugge	64
Table 37	Maritime traffic at the port of Ostend.....	65
Table 38	Value added at the port of Ostend.....	66
Table 39	Top 10 value added at the port of Ostend.....	67
Table 40	Employment at the port of Ostend.....	68
Table 41	Top 10 employment at the port of Ostend.....	70
Table 42	Investment at the port of Ostend	70
Table 43	Top 10 investment at the port of Ostend.....	71
Table 44	Maritime traffic at the Liège port complex	72
Table 45	Value added at the Liège port complex	73
Table 46	Top 10 value added at the Liège port complex	74
Table 47	Employment at the Liège port complex	75
Table 48	Top 10 employment at the Liège port complex	76
Table 49	Investment at the Liège port complex	77
Table 50	Top 10 investment at the Liège port complex	78
Table 51	Maritime traffic at the port of Brussels	79
Table 52	Value added at the port of Brussels	80
Table 53	Top 10 value added at the port of Brussels	81
Table 54	Employment at the port of Brussels.....	81
Table 55	Top 10 employment at the port of Brussels	82

Table 56	Investment at the port of Brussels.....	83
Table 57	Top 10 investment at the port of Brussels	84
Table 58	Overview of the outside port zone entities.....	85
Table 59	Value added at the outside port zone	86
Table 60	Employment at the outside port zone	87
Table 61	Investment at the outside port zone	88

List of Tables in Annex 4

Table 4.1.1	Value added at the port of Antwerp	109
Table 4.1.2	Employment at the port of Antwerp	109
Table 4.1.3	Investment at the port of Antwerp	110
Table 4.2.1	Value added at North Sea Port Flanders	110
Table 4.2.2	Employment at North Sea Port Flanders	111
Table 4.2.3	Investment at North Sea Port Flanders	111
Table 4.3.1	Value added at the port of Zeebrugge	112
Table 4.3.2	Employment at the port of Zeebrugge	112
Table 4.3.3	Investment at the port of Zeebrugge	113
Table 4.4.1	Value added at the port of Ostend	113
Table 4.4.2	Employment at the port of Ostend	114
Table 4.4.3	Investment at the port of Ostend	114
Table 4.5.1	Value added at the Liège port complex	115
Table 4.5.2	Employment value added at the Liège port complex	115
Table 4.5.3	Investment value added at the Liège port complex	116
Table 4.6.1	Value added at the port of Brussels	116
Table 4.6.2	Employment at the port of Brussels	117
Table 4.6.3	Investment at the port of Brussels	117
Table 4.7.1	Value added at the outside port zone.....	118
Table 4.7.2	Employment at the outside port zone	118
Table 4.7.3	Investment at the outside port zone	118

List of Figures

Figure 1	Breakdown of start-up, departures and net growth ratios between 2015 and 2020	18
Figure 2	Start-up, departure and net growth ratios, year on year	19
Figure 3	Value added at the Belgian ports	20
Figure 4	Main sectors at the Belgian ports in terms of value added in 2020.....	22
Figure 5	Main sectors at the Belgian ports in terms of employment in 2020.....	23
Figure 6	Employment at the Belgian ports.....	24
Figure 7	Investment at the Belgian ports	26
Figure 8	Globalised investment degree by cluster and branch of activity	29
Figure 9	Globalised return on assets by cluster	32
Figure 10	Globalised return on assets by port.....	33
Figure 11	Return on assets in a selection of non-maritime branches (quartile values)	35
Figure 12	Narrow liquidity ratio per cluster: quartile values	37
Figure 13	Share of port companies with a liquidity ratio larger than 1 and larger than 0.5.....	38
Figure 14	Port population decomposed by the financial independence level	39
Figure 15	Change in value added at the port of Antwerp.....	43
Figure 16	Change in employment at the port of Antwerp.....	45
Figure 17	Change in investment at the port of Antwerp	48
Figure 18	Change in value added at North Sea Port Flanders	52
Figure 19	Change in employment at North Sea Port Flanders	54
Figure 20	Change in investment at North Sea Port Flanders	56
Figure 21	Change in value added at the port of Zeebrugge	60
Figure 22	Change in employment at the port of Zeebrugge	62
Figure 23	Change in investment at the port of Zeebrugge.....	64
Figure 24	Change in value added at port of Ostend.....	67
Figure 25	Change in employment at port of Ostend.....	69
Figure 26	Change in investment at port of Ostend.....	71
Figure 27	Change in value added at the Liège port complex.....	74
Figure 28	Change in employment at the Liège port complex.....	76
Figure 29	Change in investment at the Liège port complex.....	78
Figure 30	Change in value added at the port of Brussels	80
Figure 31	Change in employment at the port of Brussels	82
Figure 32	Change in investment at the port of Brussels	84
Figure 33	Change in value added and in employment at the outside port zone	87
Figure 34	Change in investment at the outside port zone.....	88

List of Figures in Annex 3

Figure 3.1	Return on assets by port (quartile values) – part 1.....	106
Figure 3.1	Return on assets by port (quartile values) – part 2.....	107
Figure 3.2	Return on assets by cluster (quartile values).....	108

Bibliography

- Cariou P. (2020), *Changing demand for maritime trades*, PortEconomics Series N° 4-2020
- Coppens F. (2005), Indirect effects – A formal definition and degrees of dependency as an alternative to technical coefficients, NBB Working Paper N°67 (Research series), Brussels
- Demmou L., Franco G., Calligaris S., Dlugosh D. (2021), *Liquidity shortfalls during the COVID-19 outbreak: assessment and policy responses*, OECD, Working Paper n° 1647.
- Dhyne E., Duprez C. (2021), *Belgian firms and the COVID-19 crisis*, NBB Economic Review September 2021.
- Eurostat (2013), *European system of accounts ESA 2010*.
- Haropa (2021), *Rapport d'activité 2020*.
- Lagneaux F. (2006), *Economic importance of the Belgian ports: Flemish maritime ports and Liège port complex - Report 2004*, NBB, Working Paper n°86 (Document series), Brussels.
- Maatschappij van de Brugse Zeehaven, website: <https://portofzeebrugge.be/en/port/facts-and-figures>.
- National Accounts Institute (2014), *Classifications*. Ed. By National Accounts institute.
- National Accounts Institute (2019), *Methodologische herziening 2019 – overzicht van voornaamste wijzigingen*.
- National Accounts Institute (2019), *Input-Output Tables 2015*, Federal Planning Bureau, December 2019, Brussels.
- National Accounts Institute (2019), *National accounts: Supply and use Tables 2016*, December 2019, Brussels.
- National Accounts Institute (2022), *Economic Indicators for Belgium N° 2022-15*
- NBB, Central Balance Sheet Office, Annual accounts submitted to the Central Balance Sheet Office, from 2015 to 2020.
- NBB, General Statistics Department, stat.nbb.be - Online statistics.
- NBB (2021), *Annual Report 2020 - Economic and financial developments*, NBB, Brussels.
- NBB (2022), *Annual Report 2021 - Economic and financial developments*, NBB, Brussels.
- North Sea Port: website <https://www.northseaport.com>.
- Port autonome de Liège (2021), *Rapport annuel 2020*.
- Port of Amsterdam (2021), *Jaarverslag 2020*.
- Port of Antwerp (2021a), *Feiten & Cijfers 2021 (publicatie 2021, jaarcijfers 2020)*.
- Port of Antwerp (2021b), *Yearbook of statistics 2020*.
- Port of Brussels (2021a), *Trafics 2020 : le port de Bruxelles résiste à la crise sanitaire et économique*.
- Port of Brussels (2021b), *Jaarverslag 2020*.
- Port of Ostend (2021), *Jaarverslag 2020*.
- Port of Rotterdam (2021), *Feiten en cijfers*.
- Rubbrecht I., E. Dhyne, C. Duprez (2021), “Economic importance of the Belgian maritime and inland ports – report 2019”, NBB Working Paper N°400 (Document series), Brussels.
- Strassert, G. (1986), “Zur Bestimmung Strategischer Sektoren mit Hilfe von Input-Output Modellen”, *Jahrbucher fur Nationalökonomie und Statistik* 182, pp.211-215.
- Tielens J. Piette C., De Jonghe O. (2020), *Belgian corporate sector liquidity and solvency in the COVID-19 crisis: a post-first-wave assessment*.
- United Nations (2021), *Review of Maritime Transport 2021r*, UNCTAD New York and Geneva.

- Verduyn F. (2013), *Business demography*, Economic Review June 2013.
- Vansteelandt, S., J. Carpenter and M.G. Kenward (2010), "Analysis of incomplete data using inverse probability weighting and doubly robust estimators", in: *Methodology – European Journal of Research Methods for the behavioral and social sciences* 6. 1, pp.37-48.
- Vansteelandt, S., F. Coppens, D. Reynders, M. Vackier, L. Van Belle, "Estimation methods for computing a branch's total value added from incomplete annual accounting data", NBB, Working Paper N°371 (Document series), Brussels.
- Van Wymeersch, C. *et al.* (2017), *Financiële Analyse van de onderneming*.

Annex 1 List of NACE-BEL branches (NACE-BEL 2008)⁵⁹

SUT	NACE-BEL	Cluster	Segment	Sector	Definition
03A	03110	MAR	MAR	VI	Marine fishing
08A	08121	NOMAR	IN	AI	Quarrying of gravel
08A	08122	NOMAR	IN	AI	Quarrying of sand
08A	08910	NOMAR	IN	AI	Mining of chemical and fertiliser minerals
08A	08990	NOMAR	IN	AI	Other mining and quarrying n.e.c.
09A	09900	NOMAR	IN	AI	Support activities for other mining and quarrying
10A	10130	NOMAR	IN	VO	Production of meat and poultry meat products
10B	10200	MAR	MAR	VI	Processing and preserving of fish, crustaceans and molluscs
10C	10320	NOMAR	IN	VO	Manufacture of fruit and vegetable juice
10D	10410	NOMAR	IN	VO	Manufacture of oils and fats
10E	10510	NOMAR	IN	VO	Operation of dairies and cheese making
10E	10520	NOMAR	IN	VO	Manufacture of ice cream
10F	10610	NOMAR	IN	VO	Manufacture of grain mill products
10H	10810	NOMAR	IN	VO	Manufacture of sugar
10H	10820	NOMAR	IN	VO	Manufacture of cocoa, chocolate and sugar confectionery
10I	10890	NOMAR	IN	VO	Manufacture of other food products n.e.c.
10J	10910	NOMAR	IN	VO	Manufacture of prepared feeds for farm animals
11A	11010	NOMAR	IN	VO	Distilling, rectifying and blending of spirits
11A	11060	NOMAR	IN	VO	Manufacture of malt
13A	13100	NOMAR	IN	AI	Preparation and spinning of textile fibres
13B	13929	NOMAR	IN	AI	Manufacture of other textiles, except wearing apparel
16A	16100	NOMAR	IN	AI	Sawmilling and planing of wood
16A	16230	NOMAR	IN	AI	Manufacture of other builders' carpentry and joinery
16A	16240	NOMAR	IN	AI	Manufacture of wooden containers
17A	17120	NOMAR	IN	AI	Manufacture of paper and paperboard
17A	17210	NOMAR	IN	AI	Manufacture of corrugated paper and paperboard and of containers of paper and paperboard
17A	17290	NOMAR	IN	AI	Manufacture of other articles of paper and paperboard
18A	18120	NOMAR	IN	AI	Other printing
18A	18130	NOMAR	IN	AI	Pre-press and pre-media services
19A	19200	NOMAR	IN	PE	Manufacture of refined petroleum products
20A	20110	NOMAR	IN	CH	Manufacture of industrial gases
20A	20120	NOMAR	IN	CH	Manufacture of dyes and pigments
20B	20130	NOMAR	IN	CH	Manufacture of other inorganic basic chemicals
20A	20140	NOMAR	IN	CH	Manufacture of other organic basic chemicals
20A	20150	NOMAR	IN	CH	Manufacture of fertilisers and nitrogen compounds
20A	20160	NOMAR	IN	CH	Manufacture of plastics in primary forms
20A	20170	NOMAR	IN	CH	Manufacture of synthetic rubber in primary forms
20C	20200	NOMAR	IN	CH	Manufacture of pesticides and other agrochemical products
20D	20300	NOMAR	IN	CH	Manufacture of paints, varnishes and similar coatings, printing ink and mastics
20F	20520	NOMAR	IN	CH	Manufacture of glues
20F	20590	NOMAR	IN	CH	Manufacture of other chemical products n.e.c.
20G	20600	NOMAR	IN	CH	Manufacture of man-made fibres
21A	21100	NOMAR	IN	CH	Manufacture of basic pharmaceutical products

⁵⁹ The nomenclature in this list is in accordance with the NACE-BEL revision having taken place in 2008 (Rev.2).

SUT	NACE-BEL	Cluster	Segment	Sector	Definition
21A	21201	NOMAR	IN	CH	Manufacture of medicines
22A	22110	NOMAR	IN	CH	Manufacture of rubber tyres and tubes; retreating and rebuilding of rubber tyres
22A	22190	NOMAR	IN	CH	Manufacture of other rubber products
22B	22210	NOMAR	IN	CH	Manufacture of plastic plates, sheets, tubes and profiles
22B	22220	NOMAR	IN	CH	Manufacture of plastic packing goods
22B	22230	NOMAR	IN	CH	Manufacture of builders' ware of plastic
22B	22290	NOMAR	IN	CH	Manufacture of other plastic products
23A	23110	NOMAR	IN	CS	Manufacture of flat glass
23A	23120	NOMAR	IN	CS	Shaping and processing of flat glass
23B	23322	NOMAR	IN	CS	Manufacture of tiles and construction products, in baked clay
23C	23510	NOMAR	IN	CS	Manufacture of cement
23C	23520	NOMAR	IN	CS	Manufacture of lime and plaster
23D	23610	NOMAR	IN	CS	Manufacture of concrete products for construction purposes
23D	23620	NOMAR	IN	CS	Manufacture of plaster products for construction purposes
23D	23630	NOMAR	IN	CS	Manufacture of ready-mixed concrete
23D	23640	NOMAR	IN	CS	Manufacture of mortars
23D	23700	NOMAR	IN	CS	Cutting, shaping and finishing of stone
23D	23990	NOMAR	IN	CS	Manufacture of other non-metallic mineral products n.e.c.
24A	24100	NOMAR	IN	ME	Manufacture of basic iron and steel and of ferro-alloys
24A	24200	NOMAR	IN	ME	Manufacture of tubes, pipes, hollow profiles and related fittings, of steel
24B	24310	NOMAR	IN	ME	Cold drawing of bars
24B	24420	NOMAR	IN	ME	Aluminium production
24B	24510	NOMAR	IN	ME	Casting of iron
25A	25110	NOMAR	IN	ME	Manufacture of metal structures and parts of structure
25A	25120	NOMAR	IN	ME	Manufacture of doors and windows of metal
25A	25210	NOMAR	IN	ME	Manufacture of central heating radiators and boilers
25A	25290	NOMAR	IN	ME	Manufacture of other tanks, reservoirs and containers of metal
25A	25300	NOMAR	IN	ME	Manufacture of steam generators, except central heating hot water boilers
25A	25501	NOMAR	IN	ME	Forging of metal
25B	25610	NOMAR	IN	ME	Treatment and coating of metals
25B	25620	NOMAR	IN	ME	Machining
25C	25930	NOMAR	IN	ME	Manufacture of wire products, chain and springs
25C	25940	NOMAR	IN	ME	Manufacture of fasteners and screw machine products
25C	25999	NOMAR	IN	ME	Manufacture of other fabricated metal articles
26A	26110	NOMAR	IN	MP	Manufacture of electronic valves and tubes and other electronic components
26B	26300	NOMAR	IN	MP	Manufacture of communication equipment
26B	26400	NOMAR	IN	MP	Manufacture of consumer electronics
26C	26510	NOMAR	IN	MP	Manufacture of instruments and appliances for measuring, testing and navigation
27A	27110	NOMAR	IN	MP	Manufacture of electric motors, generators and transformers
27A	27120	NOMAR	IN	MP	Manufacture of electricity distribution and control apparatus
27A	27401	NOMAR	IN	MP	Manufacture of electric lamps
27B	27510	NOMAR	IN	MP	Manufacture of electric domestic appliances
27B	27900	NOMAR	IN	MP	Manufacture of other electrical equipment
28A	28110	NOMAR	IN	ME	Manufacture of engines and turbines, except aircraft, vehicle and cycle engines
28A	28120	NOMAR	IN	ME	Manufacture of fluid power equipment
28A	28220	NOMAR	IN	ME	Manufacture of lifting and handling equipment
28A	28250	NOMAR	IN	ME	Manufacture of non-domestic cooling and ventilation equipment

SUT	NACE-BEL	Cluster	Segment	Sector	Definition
28A	28291	NOMAR	IN	ME	Manufacture of packing-machines
28A	28295	NOMAR	IN	ME	Manufacture of filter equipment
28A	28299	NOMAR	IN	ME	Manufacture of other general-purpose machinery n.e.c.
28B	28910	NOMAR	IN	ME	Manufacture of machinery for metallurgy
29A	29100	NOMAR	IN	AU	Manufacture of motor vehicles
29B	29201	NOMAR	IN	AU	Manufacture of bodies (coachwork) for motor vehicles
29B	29202	NOMAR	IN	AU	Manufacture of trailers and semi-trailers and caravans
29B	29320	NOMAR	IN	AU	Manufacture of other parts and accessories for motor vehicles
30A	30110	MAR	MAR	SB	Building of ships and floating structures
30A	30120	MAR	MAR	SB	Building of pleasure and sporting boats
30B	30200	NOMAR	IN	AI	Manufacture of railway locomotives and rolling stock
32B	32990	NOMAR	IN	AI	Other manufacturing n.e.c.
33A	33110	NOMAR	IN	ME	Repair of fabricated metal products
33A	33120	NOMAR	IN	ME	Repair of machinery
33A	33150	MAR	MAR	SB	Repair and maintenance of ships and boats
33A	33170	NOMAR	IN	ME	Repair and maintenance of other transport equipment
35A	35110	NOMAR	IN	EN	Production of electricity
35B	35210	NOMAR	IN	EN	Manufacture of gas
35B	35220	NOMAR	IN	EN	Distribution of gaseous fuels through mains
37A	37000	NOMAR	IN	AI	Sewerage
38A	38110	NOMAR	IN	AI	Collection of non-hazardous waste
38A	38219	NOMAR	IN	AI	Other processing and disposal of non-hazardous waste
38A	38222	NOMAR	IN	AI	Processing and disposal of hazardous
38B	38310	NOMAR	IN	AI	Dismantling of wrecks
38B	38321	NOMAR	IN	AI	Sorting of non-hazardous waste for recycling
38B	38322	NOMAR	IN	AI	Recovery of waste metal
38B	38323	NOMAR	IN	AI	Recovery of inert waste
39A	39000	NOMAR	IN	AI	Remediation activities and other waste management services
41A	41102	NOMAR	IN	CS	Non-residential development projects
41A	41203	NOMAR	IN	CS	Construction of other non-residential buildings
42A	42110	NOMAR	IN	CS	Construction of roads and motorways
42A	42130	NOMAR	IN	CS	Construction of bridges and tunnels
42A	42211	NOMAR	IN	CS	Construction of water and gas supply networks
42A	42219	NOMAR	IN	CS	Civil engineering works relating to fluids n.e.c.
42A	42220	NOMAR	IN	CS	Construction of utility projects for electricity and telecommunications
42A	42911	MAR	MAR	DR	Dredging
42A	42919	MAR	MAR	DR	Construction of water projects, except dredging
43A	43110	NOMAR	IN	CS	Demolition
43A	43120	NOMAR	IN	CS	Site preparation
43B	43211	NOMAR	IN	CS	Electrical engineering installations in buildings
43B	43221	NOMAR	IN	CS	Plumbing
43B	43222	NOMAR	IN	CS	Heat and air conditioning installation
43B	43291	NOMAR	IN	CS	Insulation work activities
43C	43320	NOMAR	IN	CS	Joinery installation
43C	43341	NOMAR	IN	CS	Painting of buildings
43D	43910	NOMAR	IN	CS	Roofing activities
43D	43999	NOMAR	IN	CS	Other specialised construction activities
45A	45111	NOMAR	CO	CO	Wholesale of cars and light motor vehicles

SUT	NACE-BEL	Cluster	Segment	Sector	Definition
45A	45191	NOMAR	CO	CO	Wholesale of other motor vehicles (> 3,5 ton)
45A	45193	NOMAR	CO	CO	Retail sale of other motor vehicles (> 3,5 ton)
45A	45202	NOMAR	CO	CO	Maintenance and general repair of motor vehicles
45A	45205	NOMAR	CO	CO	Tyre specialists
45A	45310	NOMAR	CO	CO	Wholesale trade and intermediary of motor vehicle parts and accessories
46A	46110	NOMAR	CO	CO	Agents involved in the sale of agricultural raw materials, live animals, textile raw materials and semi-finished goods
46A	46120	NOMAR	CO	CO	Agents involved in the sale of fuels, ores, metals and industrial chemicals
46A	46140	NOMAR	CO	CO	Agents involved in the sale of machinery, industrial equipment, ships and aircraft
46A	46170	NOMAR	CO	CO	Agents involved in the sale of food, beverages and tobacco
46A	46180	NOMAR	CO	CO	Agents specialised in the sale of other particular products
46A	46190	NOMAR	CO	CO	Agents involved in the sale of a variety of goods
46A	46216	NOMAR	CO	CO	Wholesale of animal feeds and agricultural raw materials
46A	46319	NOMAR	CO	CO	Wholesale of fruit and vegetables, except potatoes
46A	46332	NOMAR	CO	CO	Wholesale of edible oils and fats
46A	46349	NOMAR	CO	CO	Wholesale of alcoholic and other beverages, general assortment
46A	46381	NOMAR	CO	CO	Wholesale of fish, crustaceans and molluscs
46A	46389	NOMAR	CO	CO	Wholesale of other food n.e.c.
46A	46391	NOMAR	CO	CO	Non-specialised wholesale of frozen food
46A	46392	NOMAR	CO	CO	Non-specialised wholesale of non-frozen food, beverages and tobacco
46A	46412	NOMAR	CO	CO	Wholesale trade in household textiles and bedding
46A	46423	NOMAR	CO	CO	Wholesale trade in clothing other than work clothes and underwear
46A	46431	NOMAR	CO	CO	Wholesale trade in domestic electrical appliances and audio and video equipment
46A	46442	NOMAR	CO	CO	Wholesale of cleaning materials
46A	46460	NOMAR	CO	CO	Wholesale of pharmaceutical goods
46A	46499	NOMAR	CO	CO	Wholesale of other household goods n.e.c.
46A	46510	NOMAR	CO	CO	Wholesale of computers, computer peripheral equipment and software
46A	46620	NOMAR	CO	CO	Wholesale of machine tools
46A	46630	NOMAR	CO	CO	Wholesale of mining, construction and civil engineering machinery
46A	46693	NOMAR	CO	CO	Wholesale trade in electrical equipment, including installation materials
46A	46694	NOMAR	CO	CO	Wholesale trade in lifting and transport equipment
46A	46695	NOMAR	CO	CO	Wholesale trade in pumps and compressors
46A	46699	NOMAR	CO	CO	Wholesale of other machinery and equipment n.e.c.
46B	46710	NOMAR	CO	CO	Wholesale of solid, liquid and gaseous fuels and related products
46A	46720	NOMAR	CO	CO	Wholesale of metals and metal ores
46A	46731	NOMAR	CO	CO	Wholesale of construction materials, general assortment
46A	46732	NOMAR	CO	CO	Wholesale of wood
46A	46733	NOMAR	CO	CO	Wholesale trade in wallpapers, paints and household textiles
46A	46741	NOMAR	CO	CO	Wholesale of hardware
46A	46751	NOMAR	CO	CO	Wholesale of industrial chemical products
46A	46769	NOMAR	CO	CO	Wholesale trade in other intermediate products n.e.c.
46A	46772	NOMAR	CO	CO	Wholesale trade in iron and steel scrap and non-ferrous scrap metals
46A	46900	MAR	MAR	CP	Non-specialised wholesale trade
47A	47230	NOMAR	CO	CO	Retail sale of fish, crustaceans and molluscs in specialised stores
47B	47300	NOMAR	CO	CO	Retail sale of automotive fuel in specialised stores
47A	47410	NOMAR	CO	CO	Retail sale of computers, peripheral units and software in specialised stores
47A	47521	NOMAR	CO	CO	Specialist retail trade in building materials and DIY supplies, general range
47A	47781	NOMAR	CO	CO	Specialist retail trade in fuels other than road fuel

SUT	NACE-BEL	Cluster	Segment	Sector	Definition
49A	49200	NOMAR	TR	TP	Freight rail transport
49C	49410	NOMAR	TR	WE	Freight transport by road, except removal
49C	49420	NOMAR	TR	WE	Removal services
49C	49500	NOMAR	TR	WE	Transport via pipelines
50A	50200	MAR	MAR	RE	Sea and coastal freight water transport
50B	50400	MAR	MAR	RE	Inland freight water transport
52A	52100	MAR	MAR	GO	Warehousing and storage, including refrigerating
52A	52210	NOMAR	LO	AD	Service activities incidental to land transportation
52A	52220	MAR	MAR	GO	Service activities incidental to water transportation
52A	52241	MAR	MAR	GO	Cargo handling in sea ports
52A	52249	MAR	MAR	GO	Cargo handling except sea ports
52A	52290	MAR	MAR	SE	Other transportation support activities
53A	53200	NOMAR	TR	WE	Other postal and courier activities
62A	62010	NOMAR	LO	AD	Computer programming activities
66A	66210	NOMAR	LO	AD	Risk and damage evaluation
66A	66220	NOMAR	LO	AD	Activities of insurance agents and brokers
66A	66290	NOMAR	LO	AD	Other activities auxiliary to insurance and pension funding
68B	68203	NOMAR	LO	AD	Renting and operating of own or leased non residential real estate, except lands
68A	68321	NOMAR	LO	AD	Management of residential real estate on a fee or contract basis
68A	68322	NOMAR	LO	AD	Management of non-residential real estate on a fee or contract basis
69A	69201	NOMAR	LO	AD	Accountants and fiscal advisors
70A	70100	NOMAR	LO	AD	Activities of head offices
70A	70220	NOMAR	LO	AD	Business and other management consultancy activities
71A	71121	NOMAR	LO	AD	Engineering activities and related technical consultancy, except surveyor
71A	71209	NOMAR	LO	AD	Other technical testing and analysis
72A	72190	NOMAR	LO	AD	Other research and experimental development on natural sciences and engineering
73A	73110	NOMAR	LO	AD	Advertising agencies
77A	77120	NOMAR	LO	AD	Renting and leasing of trucks
77C	77320	NOMAR	LO	AD	Renting and leasing of construction and civil engineering machinery and equipment
77C	77340	NOMAR	LO	AD	Renting and leasing of water transport equipment
77C	77399	NOMAR	LO	AD	Renting and leasing of other machinery, equipment and tangible goods
80A	80100	NOMAR	LO	AD	Private security activities
81A	81100	NOMAR	LO	AD	Combined facilities support activities
81B	81220	NOMAR	LO	AD	Other building and industrial cleaning activities
81B	81290	NOMAR	LO	AD	Other cleaning activities
82A	82110	NOMAR	LO	AD	Combined office administrative service activities
82A	82920	NOMAR	LO	AD	Packaging activities
82A	82990	NOMAR	LO	AD	Other business support service activities n.e.c.
84A	84111	MAR	MAR	PU	Federal public administration activities
84B	84220	MAR	MAR	PU	Defence activities

Source: NBB.

Legend					
Cluster code	Cluster definition	Segment code	Segment definition	Sector code	Sector definition
MAR	Maritime	MAR	Maritime	GO	Cargo handling
				SE	Shipping agents and forwarders
				RE	Shipping companies
				DR	Port construction and dredging
				HB	Port authority
				PU	Public sector
				SB	Shipbuilding and repair
				CP	Port trade
				VI	Fishing and fisheries industry
NOMAR	Non-maritime	CO	Trade	CO	Trade
		IN	Industry	EN	Energy
				PE	Fuel production
				CH	Chemicals industry
				AU	Car manufacturing
				MP	Electronics
				ME	Metalworking industry
				CS	Construction
				VO	Food industry
				AI	Other industries
		TR	Land transport	WE	Road transport
		LO	Other logistic services	TP	Other land transport
				AD	Other logistic services

Annex 2 Formulae

Annex 2.1 Contribution to growth

Let us assume that s is a sector in port p and let $v_{sp}(y)$ be the value of some variable for that sector s in port p in year y . v could be value added, employment, ... Then the total for p for that variable is just the sum of the values for all the sectors in that port or $v_{*p}(y) = \sum_{s \in p} v_{sp}(y)$.

The growth of the value for the port between $y - 1$ and y is equal to the change in value, divided by the value in the first year or $g_{*p}(y) = \frac{v_{*p}(y) - v_{*p}(y-1)}{v_{*p}(y-1)}$ and similar for the growth of the sector in that port:

$$g_{sp}(y) = \frac{v_{sp}(y) - v_{sp}(y-1)}{v_{sp}(y-1)}$$

It follows from this that:

$$\begin{aligned} g_{*p}(y) &= \frac{v_{*p}(y) - v_{*p}(y-1)}{v_{*p}(y-1)} \\ &= \sum_{s \in p} \frac{v_{sp}(y) - v_{sp}(y-1)}{v_{*p}(y-1)} \\ &= \sum_{s \in p} \frac{v_{sp}(y) - v_{sp}(y-1)}{v_{*p}(y-1)} \underbrace{\frac{v_{sp}(y-1)}{v_{*p}(y-1)}}_{= 1 \text{ if } v_{sp}(y-1) \neq 0} \end{aligned}$$

$$\begin{aligned} &\overbrace{\sum_{s \in p} \frac{v_{sp}(y) - v_{sp}(y-1)}{v_{*p}(y-1)} \frac{v_{sp}(y-1)}{v_{*p}(y-1)}}^{\text{sum of sectoral contributions}} \\ &= \sum_{s \in p} \underbrace{\frac{v_{sp}(y) - v_{sp}(y-1)}{v_{*p}(y-1)}}_{= g_{sp}(y), \text{ see supra}} \underbrace{\frac{v_{sp}(y-1)}{v_{*p}(y-1)}}_{\alpha_{sp}(y-1)} \end{aligned}$$

where $\alpha_{sp}(y-1) = \frac{v_{sp}(y-1)}{v_{*p}(y-1)}$ is the value for the sector divided by the total for the port, or it is the share of the sector for that port (if $\forall s \in p, v_{sp}(y-1) \geq 0$).

So we find that⁶⁰ the growth of v in the port p is the sum of sectoral contributions to that growth, each sector's contribution is equal to that sector's share in the previous year times the sector's own growth. This is equivalent to saying that the growth for the port is the weighted average of the growths of the sectors in that port, the weights are the shares of the sectors in $y - 1$.

⁶⁰ If $\forall s \in p, v_{sp}(y-1) > 0$

Annex 2.2 Decomposition of the globalised ratio

A (company) ratio is by definition a division of a variable for a company (the numerator, n_c) by another variable for that company (the denominator, d_c) or $r_c = \frac{n_c}{d_c}$.

The globalised ratio for a sector is then the sum of the numerators divided by the sum of the denominators or $r_s = \frac{\sum_{c \in s} n_c}{\sum_{c \in s} d_c}$. Using some basic properties of addition and multiplication we find that:

$$\begin{aligned}
 r_s &= \frac{\sum_{c \in s} n_c}{\sum_{c \in s} d_c} \\
 &= \frac{\sum_{c \in s} n_c}{D_s}, (\text{where } D_s = \sum_{c \in s} d_c) \\
 &= \frac{\sum_{c \in s} n_c \frac{d_c}{d_c}}{D_s}, (\text{if } d_c \neq 0) \\
 &= \frac{\sum_{c \in s} d_c \frac{n_c}{d_c}}{D_s} \\
 &= \sum_{c \in s} \frac{d_c}{D_s} \frac{n_c}{d_c} \\
 &= \sum_{c \in s} \omega_c \frac{n_c}{d_c}, (\text{where } \omega_c = \frac{d_c}{D_s}) \\
 &= \sum_{c \in s} \omega_c r_c
 \end{aligned}$$

So we find that:

$$r_s = \sum_{c \in s} \overbrace{\omega_c r_c}^{\text{sum of individual contributions}}$$

contribution of company c

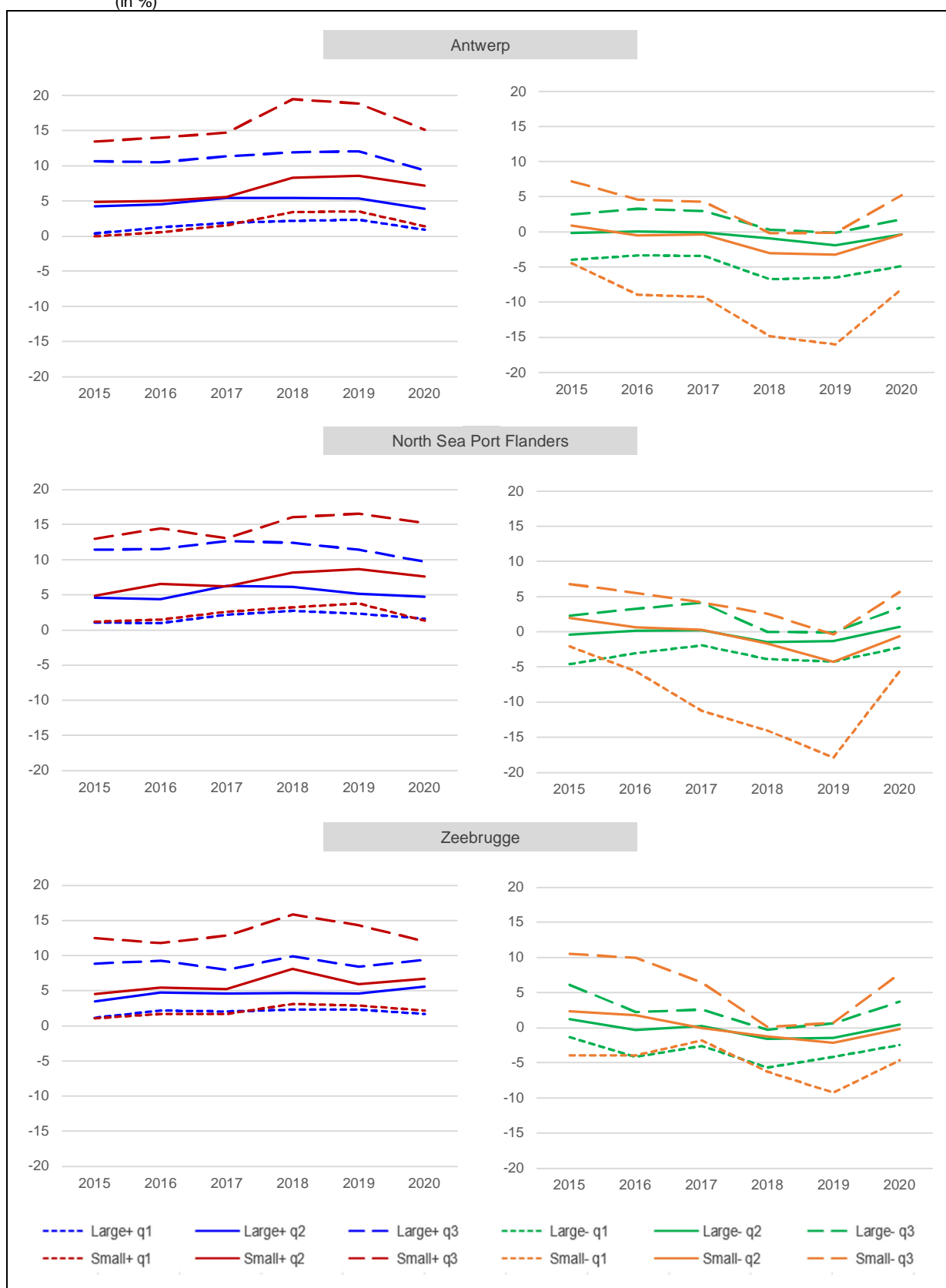
where $\omega_c = \frac{d_c}{D_s}$ is the share of the company c in sector s measured in terms of the denominator.

So we find that the globalised ratio for a sector is a weighted sum of the ratios of the individual companies in that sector. The weight for a company is the share of the company in the sector, measured in terms of the ratio's denominator.

Annex 3 Definition of the financial ratios

RATIO	ITEMS USED IN ANNUAL ACCOUNTS
RETURN ON ASSETS	
Numerator (N)	9901
Denominator (D)	10/49
Ratio = $N / D * 100$	
Conditions for calculating the ratio: 12-month financial year	
LIQUIDITY IN THE NARROW SENSE	
Numerator (N)	50/53+54/58
Denominator (D)	42/48
Ratio = N / D	
Conditions for calculating the ratio: ITEM 42/48 > 0	
SOLVENCY: DEGREE OF FINANCIAL INDEPENDENCE	
Numerator (N)	10/15
Denominator (D)	10/49
Ratio = $N / D * 100$	
Conditions for calculating the ratio: none	

FIGURE 3.1 RETURN ON ASSETS BY PORT (QUARTILE VALUES) – PART 1
(in %)

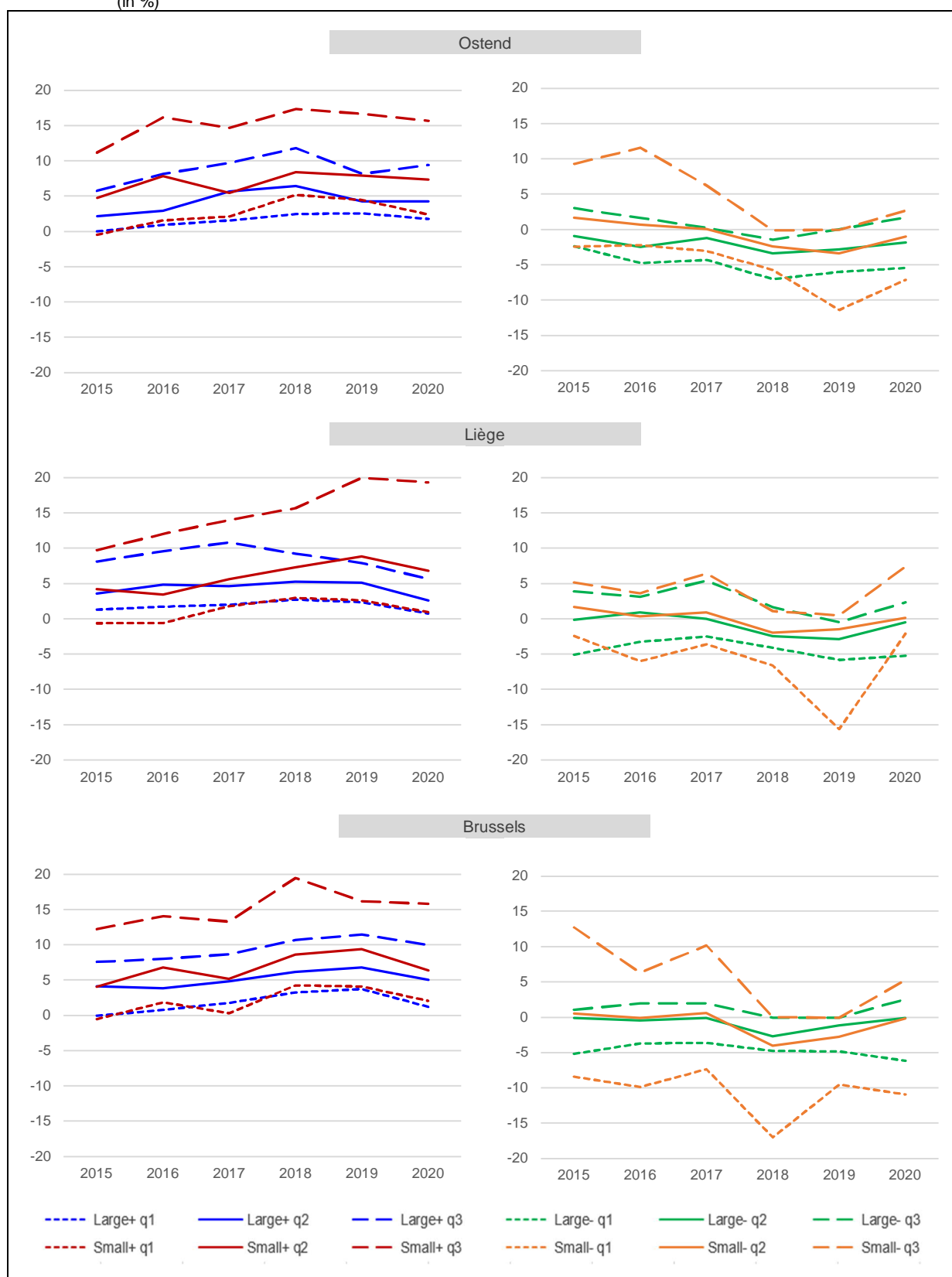


Source: NBB.

Notes:

- Large+ q1 / q2 / q3: quartile values of large strong performing companies (having positive operating result in 2018 and 2019)
- Small+ q1 / q2 / q3: quartile values of small strong performing companies (having positive operating result in 2018 and 2019)
- Large- q1 / q2 / q3: quartile values of large weak performing companies (having negative operating result in 2018 or 2019)
- Small- q1 / q2 / q3: quartile values of small weak performing companies (having negative operating result in 2018 or 2019).

FIGURE 3.1 RETURN ON ASSETS BY PORT (QUARTILE VALUES) – PART 2
(in %)

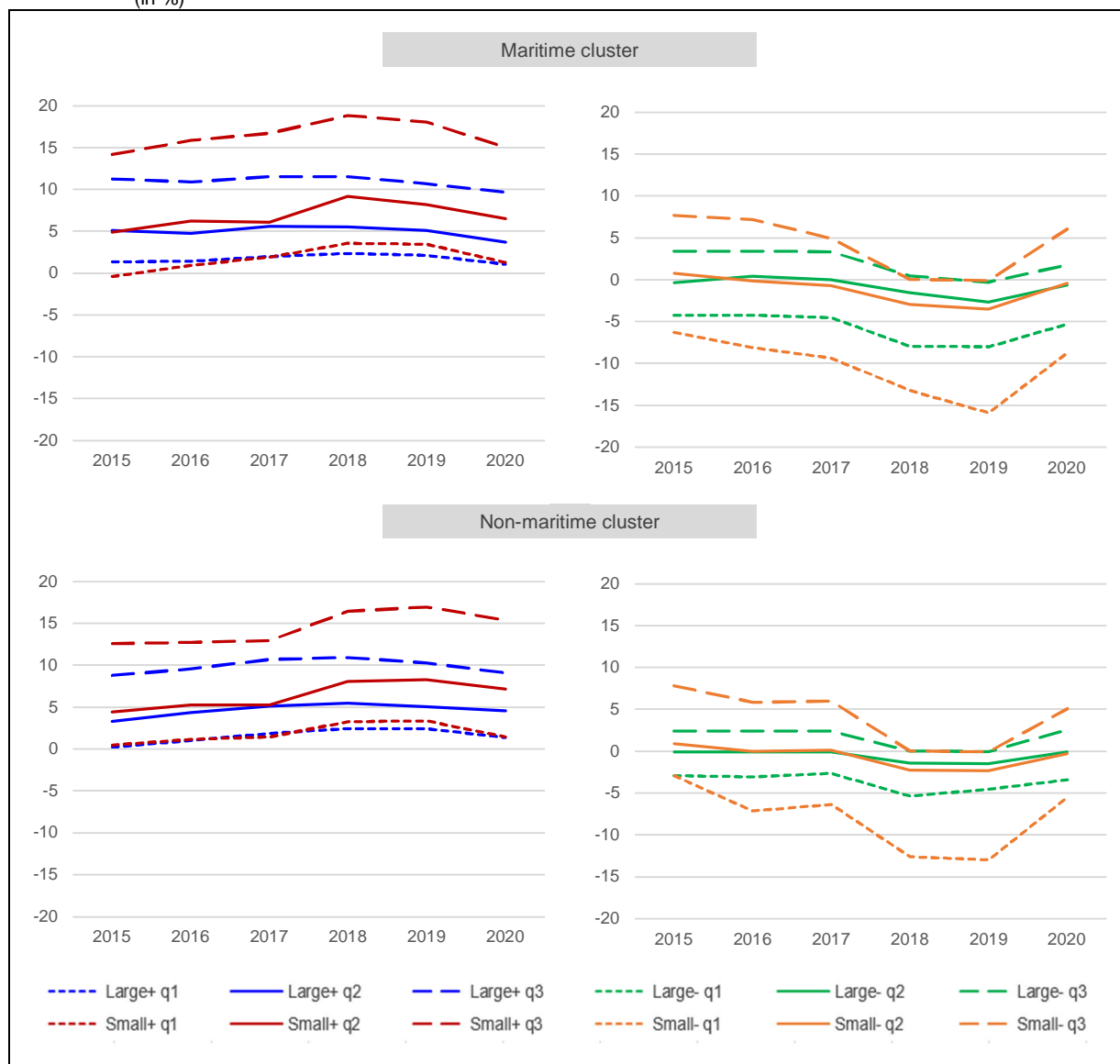


Source: NBB

Notes:

- Large+ q1 / q2 / q3: quartile values of large strong performing companies (having positive operating result in 2018 and 2019)
- Small+ q1 / q2 / q3: quartile values of small strong performing companies (having positive operating result in 2018 and 2019)
- Large- q1 / q2 / q3: quartile values of large weak performing companies (having negative operating result in 2018 or 2019)
- Small- q1 / q2 / q3: quartile values of small weak performing companies (having negative operating result in 2018 or 2019).

FIGURE 3.2 RETURN ON ASSETS BY CLUSTER (QUARTILE VALUES)
(in %)



Source: NBB.

Notes:

- Large+ q1 / q2 / q3: quartile values of large strong performing companies (having positive operating result in 2018 and 2019)
- Small+ q1 / q2 / q3: quartile values of small strong performing companies (having positive operating result in 2018 and 2019)
- Large- q1 / q2 / q3: quartile values of large weak performing companies (having negative operating result in 2018 or 2019)
- Small- q1 / q2 / q3: quartile values of small weak performing companies (having negative operating result in 2018 or 2019).

Annex 4 Detailed tables by port area

Annex 4.1 Port of Antwerp

TABLE 4.1.1 Value added at the port of Antwerp (in € million)

	2015	2016	2017	2018	2019	2020	$\sigma_{2020,s}$	$\alpha_{2020,s}$	$\bar{\alpha}_s$
Cargo handling	1 654.1	1 701.7	1 778.6	1 774.3	1 808.1	1 805.4	16.2	-0.1	1.8
Shipping companies	656.4	582.3	355.2	338.5	605.5	800.1	7.2	32.1	4.0
Shipping agents and forwarders	633.3	609.5	615.6	606.3	596.5	605.5	5.4	1.5	-0.9
Port construction and dredging	308.3	278.6	286.5	275.6	254.3	281.0	2.5	10.5	-1.8
Port authority	252.4	247.9	258.9	246.5	245.5	225.2	2.0	-8.3	-2.3
Public sector	143.6	145.7	148.7	149.9	158.6	179.0	1.6	12.9	4.5
Shipbuilding and repair	23.9	25.3	26.4	24.2	27.4	29.1	0.3	6.2	4.0
Port trade	12.2	10.2	7.0	4.9	4.5	2.8	0.0	-37.8	-25.5
Fishing and fisheries industry	1.1	1.5	1.1	0.6	0.5	0.6	0.0	20.0	-11.4
Maritime	3 685.4	3 602.7	3 477.8	3 420.9	3 701.0	3 928.7	35.2	6.2	1.3
Chemicals industry	3 421.8	3 165.0	3 671.5	3 730.5	3 148.0	3 124.2	28.0	-0.8	-1.8
Trade	901.7	999.2	1 077.2	1 116.0	1 167.6	1 062.7	9.5	-9.0	3.3
Fuel production	1 063.4	1 066.6	1 258.4	1 016.0	1 045.6	1 005.9	9.0	-3.8	-1.1
Other logistic services	544.0	560.0	626.5	680.0	691.2	674.8	6.0	-2.4	4.4
Energy	280.5	341.6	310.0	155.0	259.2	328.2	2.9	26.6	3.2
Metalworking industry	249.1	235.7	250.6	217.9	227.7	230.3	2.1	1.1	-1.6
Construction	159.1	158.1	168.1	221.6	208.2	205.5	1.8	-1.3	5.3
Other industries	149.3	163.4	172.8	167.8	175.0	191.0	1.7	9.1	5.0
Road transport	144.9	142.4	152.9	150.0	165.6	172.6	1.5	4.2	3.6
Other land transport	114.2	107.5	93.4	100.7	112.2	88.5	0.8	-21.1	-5.0
Food industry	61.6	61.3	63.8	65.6	78.0	82.3	0.7	5.5	6.0
Car manufacturing	77.1	77.3	86.3	77.8	73.4	71.7	0.6	-2.3	-1.4
Electronics	10.2	10.4	12.6	10.0	8.1	9.8	0.1	21.0	-0.8
Non-maritime	7 176.9	7 088.6	7 944.3	7 709.0	7 359.9	7 247.5	64.8	-1.5	0.2
Direct	10 862.4	10 691.3	11 422.1	11 129.9	11 060.8	11 176.2	100.0	1.0	0.6
Indirect	8 233.1	7 777.0	8 007.1	7 870.2	7 816.2	7 713.3			
Total	19 095.5	18 468.3	19 429.1	19 000.1	18 877.0	18 889.5			

Source: NBB.

Where $\sigma_{2020,s} = 100 \times \frac{v_{2020,s}}{v_{2020,Direct}}$ is the share of sector s (in %) in 2020, $\alpha_{2020,s} = 100 \times \frac{v_{2020,s} - v_{2019,s}}{v_{2019,s}}$ is the growth of sector s (in %) between 2019 and 2020, $\bar{\alpha}_s = 100 \times \left(\left(\frac{v_{2020,s}}{v_{2015,s}} \right)^{1/5} - 1 \right)$ is the (geometric) average growth of sector s (in %) between 2015 and 2020.

TABLE 4.1.2 Employment at the port of Antwerp (in FTEs)

	2015	2016	2017	2018	2019	2020	$\sigma_{2020,s}$	$\alpha_{2020,s}$	$\bar{\alpha}_s$
Cargo handling	13 671	13 893	14 341	15 050	15 726	15 889	25.3	1.0	3.1
Shipping agents and forwarders	6 687	6 596	6 570	6 421	6 173	6 018	9.6	-2.5	-2.1
Public sector	1 745	1 740	1 699	1 669	1 766	1 752	2.8	-0.8	0.1
Port construction and dredging	1 313	1 420	1 441	1 590	1 694	1 745	2.8	3.0	5.8
Port authority	1 564	1 584	1 570	1 551	1 530	1 551	2.5	1.4	-0.2
Shipping companies	741	802	695	689	675	685	1.1	1.5	-1.6
Shipbuilding and repair	285	279	282	269	291	275	0.4	-5.4	-0.7
Port trade	89	82	52	43	38	21	0.0	-45.9	-25.5
Fishing and fisheries industry	12	12	11	6	6	5	0.0	-13.8	-16.5
Maritime	26 108	26 406	26 661	27 287	27 897	27 940	44.5	0.2	1.4
Chemicals industry	10 800	10 873	10 979	11 281	11 486	11 717	18.7	2.0	1.6
Other logistic services	4 351	4 627	5 244	5 477	5 637	5 495	8.8	-2.5	4.8
Fuel production	2 751	2 752	2 904	2 873	2 917	2 905	4.6	-0.4	1.1
Metalworking industry	3 557	3 571	3 573	2 864	2 857	2 825	4.5	-1.1	-4.5
Construction	1 673	1 751	1 819	2 408	2 320	2 284	3.6	-1.5	6.4
Road transport	2 050	1 939	1 928	1 881	2 038	2 185	3.5	7.2	1.3
Trade	2 152	2 176	2 272	2 077	2 169	2 102	3.3	-3.1	-0.5
Other industries	1 226	1 233	1 296	1 305	1 406	1 406	2.2	0.0	2.8
Other land transport	1 924	1 652	1 497	1 497	1 536	1 391	2.2	-9.5	-6.3
Energy	915	1 014	1 056	1 035	1 025	1 031	1.6	0.7	2.4
Car manufacturing	941	846	910	861	855	894	1.4	4.5	-1.0
Food industry	405	382	410	422	451	477	0.8	5.8	3.3
Electronics	134	137	140	130	129	130	0.2	1.0	-0.6
Non-maritime	32 878	32 950	34 027	34 110	34 825	34 841	55.5	0.0	1.2
Direct	58 987	59 356	60 688	61 397	62 722	62 781	100.0	0.1	1.3
Indirect	72 848	72 906	75 235	78 381	79 687	79 166			
Total	131 835	132 262	135 923	139 778	142 409	141 947			

Source: NBB.

Where $\sigma_{2020,s} = 100 \times \frac{v_{2020,s}}{v_{2020,Direct}}$ is the share of sector s (in %) in 2020, $\alpha_{2020,s} = 100 \times \frac{v_{2020,s} - v_{2019,s}}{v_{2019,s}}$ is the growth of sector s (in %) between 2019 and 2020, $\bar{\alpha}_s = 100 \times \left(\left(\frac{v_{2020,s}}{v_{2015,s}} \right)^{1/5} - 1 \right)$ is the (geometric) average growth of sector s (in %) between 2015 and 2020.

TABLE 4.1.3 Investment at the port of Antwerp (in € million)

	2015	2016	2017	2018	2019	2020	$\sigma_{2020,s}$	$\alpha_{2020,s}$	$\bar{\alpha}_s$
Cargo handling	438.4	497.0	565.9	723.5	604.6	539.8	16.4	-10.7	4.2
Shipping companies	566.0	719.1	374.7	1 550.8	482.1	353.9	10.7	-26.6	-9.0
Port construction and dredging	70.6	34.4	334.9	230.5	274.3	208.3	6.3	-24.1	24.2
Public sector	19.8	29.3	15.6	38.0	31.4	104.0	3.2	231.2	39.3
Port authority	131.0	141.1	79.6	98.6	94.3	86.0	2.6	-8.8	-8.1
Shipping agents and forwarders	33.1	37.4	46.4	50.9	39.4	45.7	1.4	16.0	6.7
Shipbuilding and repair	1.4	1.9	0.8	2.1	8.0	4.3	0.1	-46.3	25.2
Port trade	0.3	0.5	1.1	0.1	0.1	0.1	0.0	0.0	-19.7
Fishing and fisheries industry	0.0	0.0	0.4	0.6	0.2	0.0	0.0	-100.0	
Maritime	1 260.7	1 460.7	1 419.5	2 695.1	1 534.3	1 342.0	40.8	-12.5	1.3
Chemicals industry	690.8	791.7	804.8	1 118.9	869.3	1 237.2	37.6	42.3	12.4
Fuel production	525.3	616.7	433.6	242.9	208.5	226.1	6.9	8.4	-15.5
Energy	167.5	142.1	249.2	280.3	139.9	172.4	5.2	23.2	0.6
Other logistic services	85.4	121.2	137.9	150.6	102.6	93.7	2.8	-8.7	1.9
Other industries	24.0	25.1	84.0	44.2	39.2	60.1	1.8	53.3	20.2
Trade	53.7	48.8	37.2	39.3	38.8	50.7	1.5	30.7	-1.1
Road transport	24.6	32.1	20.4	32.2	32.2	43.4	1.3	34.8	12.0
Other land transport	23.6	13.7	30.7	45.7	25.2	20.1	0.6	-20.2	-3.2
Construction	15.1	12.6	18.4	25.0	21.9	16.5	0.5	-24.7	1.8
Food industry	22.7	13.3	13.0	34.9	24.0	15.9	0.5	-33.8	-6.9
Metalworking industry	12.9	14.3	18.6	11.2	38.2	12.0	0.4	-68.6	-1.4
Car manufacturing	5.7	2.7	4.4	2.6	3.9	3.0	0.1	-23.1	-12.0
Electronics	0.0	0.0	0.4	0.3	0.4	0.2	0.0	-50.0	
Non-maritime	1 651.3	1 834.2	1 852.7	2 028.3	1 544.0	1 951.2	59.3	26.4	3.4
Direct	2 912.0	3 295.0	3 272.2	4 723.4	3 078.4	3 293.2	100.0	7.0	2.5

Source: NBB.

Where $\sigma_{2020,s} = 100 \times \frac{v_{2020,s}}{v_{2020,Direct}}$ is the share of sector s (in %) in 2020, $\alpha_{2020,s} = 100 \times \frac{v_{2020}-v_{2019}}{v_{2019}}$ is the growth of sector s (in %)

between 2019 and 2020, $\bar{\alpha}_s = 100 \times \left(\left(\frac{v_{2020}}{v_{2015}} \right)^{1/5} - 1 \right)$ is the (geometric) average growth of sector s (in %) between 2015 and 2020.

Annex 4.2 North Sea Port Flanders

TABLE 4.2.1 Value added at North Sea Port Flanders (in € million)

	2015	2016	2017	2018	2019	2020	$\sigma_{2020,s}$	$\alpha_{2020,s}$	$\bar{\alpha}_s$
Cargo handling	221.0	241.4	250.1	255.7	252.3	270.0	6.5	7.0	4.1
Shipping agents and forwarders	33.0	32.0	40.1	35.2	33.8	34.4	0.8	1.8	0.8
Port authority	23.9	32.2	30.5	30.4	31.7	33.5	0.8	5.7	7.0
Public sector	21.4	22.2	21.1	22.5	21.3	19.4	0.5	-8.9	-1.9
Shipping companies	3.4	3.0	4.0	3.3	3.1	3.2	0.1	3.2	-1.2
Shipbuilding and repair	3.2	3.2	3.2	2.6	2.6	2.7	0.1	3.8	-3.3
Port trade	0.4	0.4	0.3	0.3	0.3	0.4	0.0	33.3	0.0
Maritime	306.3	334.4	349.3	350.1	345.0	363.7	8.8	5.4	3.5
Trade	822.8	905.9	978.0	1 052.2	1 107.3	977.7	23.6	-11.7	3.5
Car manufacturing	722.6	711.5	746.4	790.9	861.6	820.1	19.8	-4.8	2.6
Metalworking industry	774.3	835.6	1 056.7	957.0	786.2	641.8	15.5	-18.4	-3.7
Chemicals industry	428.5	372.5	486.5	491.6	435.2	410.2	9.9	-5.7	-0.9
Fuel production	56.5	36.6	145.3	137.3	166.6	178.4	4.3	7.1	25.9
Other industries	141.3	149.8	140.2	175.3	180.2	162.9	3.9	-9.6	2.9
Construction	118.1	125.0	144.6	154.7	159.3	154.7	3.7	-2.9	5.5
Food industry	112.4	104.3	107.3	119.9	143.6	137.9	3.3	-4.0	4.2
Other logistic services	138.3	114.0	124.9	123.3	139.0	132.3	3.2	-4.8	-0.9
Road transport	68.4	69.8	73.4	70.9	77.8	72.4	1.7	-6.9	1.1
Energy	38.0	57.4	49.5	23.8	45.4	53.8	1.3	18.5	7.2
Electronics	35.5	30.0	36.9	36.3	34.8	26.6	0.6	-23.6	-5.6
Other land transport	11.3	11.9	11.1	11.1	13.0	14.4	0.3	10.8	5.0
Non-maritime	3 467.9	3 524.3	4 101.0	4 144.3	4 150.1	3 783.4	91.2	-8.8	1.8
Direct	3 774.1	3 858.7	4 450.3	4 494.4	4 495.1	4 147.1	100.0	-7.7	1.9
Indirect	3 453.1	3 448.6	4 164.6	4 118.4	4 092.7	3 787.8			
Total	7 227.2	7 307.3	8 614.9	8 612.8	8 587.8	7 934.9			

Source: NBB.

Where $\sigma_{2020,s} = 100 \times \frac{v_{2020,s}}{v_{2020,Direct}}$ is the share of sector s (in %) in 2020, $\alpha_{2020,s} = 100 \times \frac{v_{2020}-v_{2019}}{v_{2019}}$ is the growth of sector s (in %)

between 2019 and 2020, $\bar{\alpha}_s = 100 \times \left(\left(\frac{v_{2020}}{v_{2015}} \right)^{1/5} - 1 \right)$ is the (geometric) average growth of sector s (in %) between 2015 and 2020.

TABLE 4.2.2 Employment at North Sea Port Flanders (in FTEs)

	2015	2016	2017	2018	2019	2020	$\sigma_{2020,s}$	$\alpha_{2020,s}$	$\bar{\alpha}_s$
Cargo handling	1 720	1 908	1 948	2 116	2 154	2 193	7.6	1.8	5.0
Shipping agents and forwarders	328	329	389	386	404	415	1.4	2.7	4.8
Public sector	228	211	214	196	193	191	0.7	-1.0	-3.5
Port authority	148	148	143	138	134	130	0.4	-3.4	-2.6
Shipbuilding and repair	42	40	37	36	33	31	0.1	-7.5	-5.9
Shipping companies	4	3	3	3	1	4	0.0	150.0	-3.6
Port trade	3	4	2	3	2	2	0.0	0.0	-6.2
Maritime	2 473	2 642	2 735	2 876	2 922	2 964	10.3	1.5	3.7
Car manufacturing	9 544	9 386	9 358	9 504	9 673	9 671	33.5	0.0	0.3
Metalworking industry	6 018	6 152	6 030	5 828	5 821	5 790	20.0	-0.5	-0.8
Chemicals industry	2 109	2 145	2 176	2 241	2 299	2 325	8.1	1.1	2.0
Construction	1 452	1 547	1 685	1 792	1 814	1 736	6.0	-4.3	3.6
Trade	1 597	1 602	1 639	1 658	1 572	1 513	5.2	-3.8	-1.1
Other logistic services	1 166	1 156	1 360	1 303	1 430	1 366	4.7	-4.5	3.2
Other industries	889	930	974	1 020	1 058	1 060	3.7	0.2	3.6
Road transport	718	733	760	766	807	799	2.8	-1.1	2.1
Food industry	650	637	677	681	706	724	2.5	2.5	2.2
Other land transport	188	186	160	166	174	269	0.9	55.0	7.4
Electronics	267	258	250	262	256	244	0.8	-4.8	-1.8
Fuel production	220	228	235	228	231	225	0.8	-2.4	0.5
Energy	184	196	201	202	202	193	0.7	-4.5	0.9
Non-maritime	25 002	25 155	25 505	25 649	26 042	25 913	89.7	-0.5	0.7
Direct	27 475	27 797	28 241	28 526	28 963	28 877	100.0	-0.3	1.0
Indirect	31 106	31 836	33 453	34 391	35 801	35 780			
Total	58 581	59 633	61 693	62 917	64 765	64 657			

Source: NBB.

Where $\sigma_{2020,s} = 100 \times \frac{v_{2020,s}}{v_{2020,Direct}}$ is the share of sector s (in %) in 2020, $\alpha_{2020,s} = 100 \times \frac{v_{2020,s} - v_{2019,s}}{v_{2019,s}}$ is the growth of sector s (in %) between 2019 and 2020, $\bar{\alpha}_s = 100 \times \left(\left(\frac{v_{2020,s}}{v_{2015,s}} \right)^{1/5} - 1 \right)$ is the (geometric) average growth of sector s (in %) between 2015 and 2020.

TABLE 4.2.3 Investment at North Sea Port Flanders (in € million)

	2015	2016	2017	2018	2019	2020	$\sigma_{2020,s}$	$\alpha_{2020,s}$	$\bar{\alpha}_s$
Cargo handling	32.7	71.4	109.9	54.8	101.5	92.7	13.5	-8.7	23.2
Port authority	8.5	8.6	11.7	17.7	34.8	32.6	4.7	-6.3	30.8
Shipping agents and forwarders	1.7	4.4	1.6	6.9	22.8	11.4	1.7	-50.0	46.3
Shipping companies	0.2	0.7	2.0	3.8	1.9	4.7	0.7	147.4	88.0
Public sector	10.3	17.7	8.6	0.5	5.7	1.1	0.2	-80.7	-36.1
Shipbuilding and repair	0.7	0.5	0.8	0.6	0.6	0.6	0.1	0.0	-3.0
Port trade	0.0	0.1	0.0	0.0	0.0	0.2	0.0		
Maritime	54.0	103.4	134.7	84.4	167.3	143.3	20.8	-14.3	21.6
Car manufacturing	53.4	116.0	191.5	120.6	151.6	136.1	19.8	-10.2	20.6
Metalworking industry	84.3	122.1	159.3	73.0	132.5	116.6	17.0	-12.0	6.7
Chemicals industry	52.4	54.3	70.1	109.3	164.9	100.6	14.6	-39.0	13.9
Fuel production	1.7	2.2	2.3	3.9	7.5	39.1	5.7	421.3	87.2
Food industry	22.7	24.0	19.3	22.1	29.1	36.9	5.4	26.8	10.2
Trade	31.8	33.9	31.6	34.0	42.6	28.2	4.1	-33.8	-2.4
Other logistic services	15.4	18.9	24.3	33.7	30.5	23.4	3.4	-23.3	8.7
Construction	14.3	10.3	13.4	15.5	25.7	18.2	2.6	-29.2	4.9
Other industries	17.1	18.2	16.5	14.1	18.0	18.0	2.6	0.0	1.0
Other land transport	7.2	2.4	5.1	8.6	9.7	10.1	1.5	4.1	7.0
Electronics	2.2	1.8	3.3	5.5	2.8	6.3	0.9	125.0	23.4
Road transport	9.7	9.6	10.6	10.4	8.2	6.2	0.9	-24.4	-8.6
Energy	4.4	6.3	4.5	5.4	6.7	4.8	0.7	-28.4	1.8
Non-maritime	316.6	420.0	551.7	456.0	629.6	544.4	79.2	-13.5	11.5
Direct	370.6	523.4	686.4	540.4	796.9	687.8	100.0	-13.7	13.2

Source: NBB.

Where $\sigma_{2020,s} = 100 \times \frac{v_{2020,s}}{v_{2020,Direct}}$ is the share of sector s (in %) in 2020, $\alpha_{2020,s} = 100 \times \frac{v_{2020,s} - v_{2019,s}}{v_{2019,s}}$ is the growth of sector s (in %) between 2019 and 2020, $\bar{\alpha}_s = 100 \times \left(\left(\frac{v_{2020,s}}{v_{2015,s}} \right)^{1/5} - 1 \right)$ is the (geometric) average growth of sector s (in %) between 2015 and 2020.

Annex 4.3 Port of Zeebrugge

TABLE 4.3.1 Value added at the port of Zeebrugge (in € million)

	2015	2016	2017	2018	2019	2020	$\sigma_{2020,s}$	$\alpha_{2020,s}$	$\bar{\alpha}_s$
Cargo handling	216.6	244.3	245.4	247.7	261.4	244.4	22.5	-6.5	2.4
Public sector	103.3	103.1	103.0	102.3	103.6	99.2	9.1	-4.2	-0.8
Shipping agents and forwarders	84.8	67.1	69.3	66.0	80.6	84.2	7.8	4.5	-0.1
Port authority	35.8	35.0	37.7	41.7	45.1	45.7	4.2	1.3	5.0
Fishing and fisheries industry	35.6	37.7	40.5	38.9	40.6	44.3	4.1	9.1	4.5
Shipping companies	43.1	47.4	39.5	41.7	34.7	29.5	2.7	-15.0	-7.3
Port construction and dredging	30.4	19.6	28.3	20.6	26.4	26.0	2.4	-1.5	-3.1
Shipbuilding and repair	7.5	9.1	8.3	7.3	8.9	9.7	0.9	9.0	5.3
Port trade	1.0	1.1	0.7	0.8	0.8	0.7	0.1	-12.5	-6.9
Maritime	558.0	564.4	572.6	566.8	602.2	583.8	53.7	-3.1	0.9
Energy	91.3	89.6	93.8	91.3	119.8	142.4	13.1	18.9	9.3
Trade	88.9	91.4	90.3	102.5	98.5	106.6	9.8	8.2	3.7
Road transport	45.6	50.1	59.9	63.0	52.8	50.6	4.7	-4.2	2.1
Other logistic services	28.7	36.0	40.5	35.3	40.8	47.1	4.3	15.4	10.4
Other industries	40.2	38.3	44.7	37.1	34.1	39.4	3.6	15.5	-0.4
Chemicals industry	34.0	33.2	37.2	31.5	30.9	36.0	3.3	16.5	1.1
Food industry	33.8	35.7	34.6	31.6	31.4	29.4	2.7	-6.4	-2.8
Construction	25.5	31.7	31.5	32.9	32.1	26.5	2.4	-17.4	0.8
Other land transport	7.3	8.0	7.0	7.8	8.3	11.3	1.0	36.1	9.1
Metalworking industry	4.4	4.6	5.6	8.6	8.2	8.0	0.7	-2.4	12.7
Electronics	2.5	3.5	4.5	4.1	3.5	3.5	0.3	0.0	7.0
Car manufacturing	1.5	1.4	1.7	1.7	1.6	1.8	0.2	12.5	3.7
Non-maritime	403.7	423.6	451.3	447.4	461.9	502.6	46.3	8.8	4.5
Direct	961.7	988.0	1 024.0	1 014.2	1 064.1	1 086.4	100.0	2.1	2.5
Indirect	670.1	701.1	717.8	713.7	774.2	781.5			
Total	1 631.8	1 689.1	1 741.8	1 727.9	1 838.3	1 867.9			

Source: NBB.

Where $\sigma_{2020,s} = 100 \times \frac{v_{2020,s}}{v_{2020,Direct}}$ is the share of sector s (in %) in 2020, $\alpha_{2020,s} = 100 \times \frac{v_{2020}-v_{2019}}{v_{2019}}$ is the growth of sector s (in %)

between 2019 and 2020, $\bar{\alpha}_s = 100 \times \left(\left(\frac{v_{2020}}{v_{2015}} \right)^{1/5} - 1 \right)$ is the (geometric) average growth of sector s (in %) between 2015 and 2020.

TABLE 4.3.2 Employment at the port of Zeebrugge (in FTEs)

	2015	2016	2017	2018	2019	2020	$\sigma_{2020,s}$	$\alpha_{2020,s}$	$\bar{\alpha}_s$
Cargo handling	2 481	2 617	2 765	2 905	3 030	3 065	31.2	1.2	4.3
Public sector	1 478	1 443	1 399	1 357	1 332	1 310	13.3	-1.7	-2.4
Shipping agents and forwarders	652	637	643	689	734	726	7.4	-1.1	2.2
Fishing and fisheries industry	419	421	421	398	409	434	4.4	6.2	0.7
Port construction and dredging	194	185	196	202	205	210	2.1	2.3	1.6
Shipping companies	152	129	149	155	159	159	1.6	-0.4	0.8
Port authority	133	136	133	131	134	135	1.4	0.7	0.3
Shipbuilding and repair	100	109	117	89	98	96	1.0	-2.2	-0.9
Port trade	13	15	11	12	12	12	0.1	-1.7	-2.7
Maritime	5 621	5 693	5 834	5 938	6 113	6 146	62.6	0.5	1.8
Trade	864	903	852	858	882	873	8.9	-1.0	0.2
Road transport	581	670	693	734	730	700	7.1	-4.2	3.8
Other industries	418	399	415	401	401	396	4.0	-1.2	-1.1
Other logistic services	207	235	275	274	317	362	3.7	14.4	11.8
Construction	347	360	344	352	345	336	3.4	-2.6	-0.6
Food industry	310	337	291	291	283	285	2.9	0.9	-1.7
Chemicals industry	234	248	281	240	236	240	2.4	1.7	0.5
Other land transport	132	124	113	118	112	193	2.0	72.5	7.9
Energy	126	124	124	119	127	129	1.3	1.3	0.3
Metalworking industry	67	69	72	111	109	101	1.0	-7.7	8.3
Electronics	37	55	62	56	50	48	0.5	-5.4	5.1
Car manufacturing	13	15	17	17	17	18	0.2	4.1	6.9
Non-maritime	3 337	3 538	3 536	3 570	3 608	3 679	37.4	2.0	2.0
Direct	8 958	9 231	9 370	9 508	9 721	9 825	100.0	1.1	1.9
Indirect	8 388	8 702	8 812	9 193	9 630	9 761			
Total	17 346	17 933	18 182	18 701	19 352	19 586			

Source: NBB.

Where $\sigma_{2020,s} = 100 \times \frac{v_{2020,s}}{v_{2020,Direct}}$ is the share of sector s (in %) in 2020, $\alpha_{2020,s} = 100 \times \frac{v_{2020}-v_{2019}}{v_{2019}}$ is the growth of sector s (in %)

between 2019 and 2020, $\bar{\alpha}_s = 100 \times \left(\left(\frac{v_{2020}}{v_{2015}} \right)^{1/5} - 1 \right)$ is the (geometric) average growth of sector s (in %) between 2015 and 2020.

TABLE 4.3.3 Investment at the port of Zeebrugge (in € million)

	2015	2016	2017	2018	2019	2020	$\sigma_{2020,s}$	$\alpha_{2020,s}$	$\tilde{\alpha}_s$
Port authority	13.4	24.2	22.7	26.1	25.6	62.8	24.1	145.3	36.2
Cargo handling	20.3	31.8	45.9	26.0	34.7	26.6	10.2	-23.3	5.6
Public sector	9.0	7.5	30.6	3.2	42.5	24.0	9.2	-43.5	21.7
Fishing and fisheries industry	9.8	3.9	4.7	8.2	7.4	8.5	3.3	14.9	-2.8
Shipping agents and forwarders	15.0	19.3	9.3	4.5	5.4	3.9	1.5	-27.8	-23.6
Port construction and dredging	3.0	3.6	2.7	5.7	3.0	3.6	1.4	20.0	3.7
Shipbuilding and repair	2.7	3.9	1.4	3.8	8.6	1.0	0.4	-88.4	-18.0
Shipping companies	0.1	12.7	15.6	0.2	0.6	0.6	0.2	0.0	43.1
Port trade	0.0	0.2	0.1	0.0	0.1	0.1	0.0	0.0	
Maritime	73.2	107.1	133.0	77.7	128.0	131.0	50.2	2.3	12.3
Energy	85.0	105.5	65.0	60.8	106.5	48.0	18.4	-54.9	-10.8
Other land transport	20.5	21.9	22.3	27.7	10.8	20.3	7.8	88.0	-0.2
Other logistic services	6.7	5.4	10.6	8.9	12.8	14.4	5.5	12.5	16.5
Food industry	3.7	4.3	4.4	7.9	4.5	12.0	4.6	166.7	26.5
Trade	11.7	10.0	13.9	13.2	12.8	10.2	3.9	-20.3	-2.7
Other industries	6.2	4.1	8.1	11.6	8.5	9.7	3.7	14.1	9.4
Road transport	16.6	35.6	18.0	14.5	8.1	6.6	2.5	-18.5	-16.8
Construction	2.5	3.1	3.7	3.6	6.1	5.0	1.9	-18.0	14.9
Chemicals industry	3.6	3.4	5.8	5.9	7.9	2.9	1.1	-63.3	-4.2
Metalworking industry	0.3	0.2	2.9	0.9	1.5	0.6	0.2	-60.0	14.9
Electronics	0.4	0.2	0.1	0.2	0.4	0.2	0.1	-50.0	-12.9
Car manufacturing	0.1	0.2	0.1	0.0	0.1	0.1	0.0	0.0	0.0
Non-maritime	157.4	193.8	154.9	155.1	179.9	130.0	49.8	-27.7	-3.8
Direct	230.6	301.0	287.9	232.8	308.0	261.0	100.0	-15.2	2.5

Source: NBB.

Where $\sigma_{2020,s} = 100 \times \frac{v_{2020,s}}{v_{2020,Direct}}$ is the share of sector s (in %) in 2020, $\alpha_{2020,s} = 100 \times \frac{v_{2020,s} - v_{2019,s}}{v_{2019,s}}$ is the growth of sector s (in %)

between 2019 and 2020, $\tilde{\alpha}_s = 100 \times \left(\left(\frac{v_{2020,s}}{v_{2015,s}} \right)^{1/5} - 1 \right)$ is the (geometric) average growth of sector s (in %) between 2015 and 2020.

Annex 4.4 Port of Ostend

TABLE 4.4.1 Value added at the port of Ostend (in € million)

	2015	2016	2017	2018	2019	2020	$\sigma_{2020,s}$	$\alpha_{2020,s}$	$\tilde{\alpha}_s$
Port construction and dredging	70.5	57.1	42.6	47.8	53.3	79.2	11.2	48.6	2.4
Public sector	56.2	58.2	59.2	61.7	63.2	65.1	9.2	3.0	3.0
Fishing and fisheries industry	28.9	29.4	33.1	28.1	24.9	29.4	4.2	18.1	0.3
Shipbuilding and repair	9.8	10.4	10.2	10.8	12.1	11.1	1.6	-8.3	2.5
Port authority	2.7	2.9	3.5	4.6	4.0	5.2	0.7	30.0	14.0
Shipping agents and forwarders	5.0	4.0	5.0	5.5	3.5	4.2	0.6	20.0	-3.4
Cargo handling	2.3	2.5	1.3	2.4	0.7	2.0	0.3	185.7	-2.8
Shipping companies	0.6	0.5	0.4	0.2	0.4	0.3	0.0	-25.0	-12.9
Port trade	0.0	0.0	0.0	0.0	0.0	0.1	0.0		
Maritime	176.2	165.0	155.4	161.2	162.1	196.5	27.7	21.2	2.2
Metalworking industry	168.4	179.7	215.1	214.9	210.6	291.1	41.1	38.2	11.6
Construction	34.0	31.3	39.8	35.0	42.2	50.3	7.1	19.2	8.1
Other logistic services	13.0	14.4	16.1	23.3	32.0	40.7	5.7	27.2	25.6
Chemicals industry	34.2	38.4	36.6	38.6	38.1	36.2	5.1	-5.0	1.1
Road transport	25.0	26.0	26.0	24.8	25.6	24.2	3.4	-5.5	-0.6
Other industries	21.6	22.9	18.4	22.5	23.8	20.5	2.9	-13.9	-1.0
Food industry	14.5	16.7	16.9	16.9	17.2	18.0	2.5	4.7	4.4
Energy	18.9	19.6	18.7	21.3	20.5	15.3	2.2	-25.4	-4.1
Trade	12.1	13.8	9.1	10.0	11.1	11.1	1.6	0.0	-1.7
Other land transport	0.7	0.6	0.5	0.5	0.3	3.0	0.4	900.0	33.8
Car manufacturing	2.7	0.8	1.4	1.3	1.2	1.2	0.2	0.0	-15.0
Non-maritime	345.0	364.2	398.6	409.2	422.6	511.6	72.2	21.1	8.2
Direct	521.2	529.2	554.1	570.4	584.7	708.2	100.0	21.1	6.3
Indirect	379.2	365.6	382.2	405.4	428.4	523.6			
Total	900.4	894.8	936.3	975.8	1 013.1	1 231.8			

Source: NBB.

Where $\sigma_{2020,s} = 100 \times \frac{v_{2020,s}}{v_{2020,Direct}}$ is the share of sector s (in %) in 2020, $\alpha_{2020,s} = 100 \times \frac{v_{2020,s} - v_{2019,s}}{v_{2019,s}}$ is the growth of sector s (in %)

between 2019 and 2020, $\tilde{\alpha}_s = 100 \times \left(\left(\frac{v_{2020,s}}{v_{2015,s}} \right)^{1/5} - 1 \right)$ is the (geometric) average growth of sector s (in %) between 2015 and 2020.

TABLE 4.4.2 Employment at the port of Ostend (in FTEs)

	2015	2016	2017	2018	2019	2020	$\sigma_{2020,s}$	$\alpha_{2020,s}$	$\bar{\alpha}_s$
Public sector	772	786	770	767	775	794	15.6	2.4	0.6
Port construction and dredging	364	345	332	328	323	309	6.1	-4.2	-3.2
Fishing and fisheries industry	333	328	344	349	332	287	5.6	-13.7	-3.0
Shipbuilding and repair	153	161	173	180	190	195	3.8	2.3	4.9
Port authority	37	35	34	37	40	42	0.8	4.8	2.3
Shipping agents and forwarders	31	28	28	30	24	30	0.6	26.0	-0.9
Shipping companies	1	2	4	3	2	2	0.0	-8.3	14.9
Cargo handling	41	31	9	6	4	1	0.0	-76.2	-52.5
Maritime	1 733	1 715	1 693	1 700	1 690	1 659	32.6	-1.9	-0.9
Metalworking industry	1 432	1 390	1 450	1 501	1 617	1 561	30.7	-3.5	1.7
Construction	423	434	441	421	407	416	8.2	2.4	-0.3
Road transport	419	417	416	408	394	348	6.8	-11.7	-3.7
Chemicals industry	309	304	299	310	309	305	6.0	-1.3	-0.3
Other logistic services	115	119	118	173	236	279	5.5	18.2	19.3
Other industries	117	117	119	120	124	151	3.0	21.8	5.2
Food industry	143	135	130	133	138	134	2.6	-2.8	-1.3
Trade	208	202	113	119	138	125	2.5	-8.9	-9.6
Other land transport	10	9	7	7	5	46	0.9	824.0	35.0
Energy	46	36	42	39	46	42	0.8	-9.5	-2.1
Car manufacturing	29	26	26	22	18	21	0.4	12.0	-6.7
Non-maritime	3 253	3 188	3 160	3 253	3 431	3 427	67.4	-0.1	1.0
Direct	4 986	4 903	4 854	4 953	5 121	5 086	100.0	-0.7	0.4
Indirect	4 155	3 968	4 009	4 203	4 328	4 292			
Total	9 141	8 871	8 862	9 156	9 449	9 378			

Source: NBB.

Where $\sigma_{2020,s} = 100 \times \frac{v_{2020,s}}{v_{2020,Direct}}$ is the share of sector s (in %) in 2020, $\alpha_{2020,s} = 100 \times \frac{v_{2020}-v_{2019}}{v_{2019}}$ is the growth of sector s (in %)

between 2019 and 2020, $\bar{\alpha}_s = 100 \times \left(\left(\frac{v_{2020}}{v_{2015}} \right)^{1/5} - 1 \right)$ is the (geometric) average growth of sector s (in %) between 2015 and 2020.

TABLE 4.4.3 Investment at the port of Ostend (in € million)

	2015	2016	2017	2018	2019	2020	$\sigma_{2020,s}$	$\alpha_{2020,s}$	$\bar{\alpha}_s$
Public sector	13.8	23.8	5.4	32.7	6.8	7.8	4.4	14.7	-10.8
Port construction and dredging	0.1	1.3	2.8	1.2	0.0	6.2	3.5		128.3
Fishing and fisheries industry	3.0	3.3	6.4	8.0	5.9	2.5	1.4	-57.6	-3.6
Port authority	1.1	0.4	2.0	1.3	2.0	2.2	1.2	10.0	14.9
Shipbuilding and repair	0.2	0.4	0.1	0.8	0.5	0.6	0.3	20.0	24.6
Shipping agents and forwarders	2.5	3.8	0.4	1.6	2.4	0.3	0.2	-87.5	-34.6
Cargo handling	0.1	0.0	0.1	0.1	1.2	0.0	0.0	-100.0	-100.0
Shipping companies	0.0	0.0	0.3	0.1	0.0	0.0	0.0		
Maritime	20.9	33.0	17.4	45.8	18.8	19.6	11.0	4.3	-1.3
Other industries	18.8	14.5	10.6	12.5	28.3	74.6	16.4	163.6	31.7
Construction	10.6	21.3	15.6	20.1	10.5	37.5	15.4	257.1	28.7
Metalworking industry	77.3	11.3	11.2	21.4	25.6	20.4	9.7	-20.3	-23.4
Chemicals industry	6.0	5.9	8.6	9.2	6.6	7.2	7.1	9.1	3.7
Other logistic services	3.1	1.7	2.8	8.3	5.0	6.6	3.1	32.0	16.3
Road transport	2.4	2.5	4.3	4.0	2.3	3.8	2.8	65.2	9.6
Trade	3.6	3.3	4.9	2.5	3.9	3.1	1.9	-20.5	-2.9
Food industry	1.3	1.9	4.1	3.6	3.3	1.8	0.7	-45.5	6.7
Car manufacturing	0.0	0.1	0.0	0.0	0.0	1.7	0.1		
Energy	0.3	1.1	0.7	0.9	1.7	1.6	0.0	-5.9	39.8
Other land transport	0.0	0.0	0.0	0.1	0.1	0.4	0.0	300.0	
Non-maritime	123.4	63.7	62.8	82.7	87.4	158.9	89.0	81.8	5.2
Direct	144.3	96.6	80.2	128.4	106.2	178.5	100.0	68.0	4.3

Source: NBB.

Where $\sigma_{2020,s} = 100 \times \frac{v_{2020,s}}{v_{2020,Direct}}$ is the share of sector s (in %) in 2020, $\alpha_{2020,s} = 100 \times \frac{v_{2020}-v_{2019}}{v_{2019}}$ is the growth of sector s (in %)

between 2019 and 2020, $\bar{\alpha}_s = 100 \times \left(\left(\frac{v_{2020}}{v_{2015}} \right)^{1/5} - 1 \right)$ is the (geometric) average growth of sector s (in %) between 2015 and 2020.

Annex 4.5 Liège port complex

TABLE 4.5.1 Value added at the Liège port complex (in € million)

	2015	2016	2017	2018	2019	2020	$\sigma_{2020,s}$	$\alpha_{2020,s}$	$\bar{\alpha}_s$
Cargo handling	14.2	15.4	15.4	15.3	17.5	18.7	1.8	6.9	5.7
Shipping agents and forwarders	4.6	6.2	6.9	6.5	7.7	10.8	1.0	40.3	18.6
Shipping companies	4.2	3.8	4.2	4.8	4.5	4.5	0.4	0.0	1.4
Port authority	2.6	2.6	2.8	2.8	2.8	2.8	0.3	0.0	1.5
Shipbuilding and repair	0.5	0.6	0.5	0.7	0.5	0.1	0.0	-80.0	-27.5
Maritime	26.1	28.7	29.8	30.1	33.0	36.9	3.5	11.8	7.2
Energy	250.8	325.3	260.3	80.5	216.9	291.3	27.6	34.3	3.0
Chemicals industry	132.4	149.4	151.3	152.3	144.9	164.2	15.5	13.3	4.4
Metalworking industry	275.0	278.9	309.6	309.3	218.6	158.7	15.0	-27.4	-10.4
Construction	145.2	135.0	138.9	136.7	145.5	149.5	14.1	2.7	0.6
Fuel production	40.4	69.6	75.5	78.9	89.1	74.1	7.0	-16.8	12.9
Other industries	75.6	69.5	72.1	64.1	72.2	68.1	6.4	-5.7	-2.1
Trade	61.3	63.5	54.1	71.2	68.6	65.1	6.2	-5.1	1.2
Other logistic services	27.1	27.2	29.2	32.1	41.5	29.6	2.8	-28.7	1.8
Food industry	28.4	15.4	23.6	22.0	6.8	10.4	1.0	52.9	-18.2
Electronics	6.1	4.8	6.7	6.5	3.3	4.8	0.5	45.5	-4.7
Road transport	4.3	4.3	4.5	5.3	4.8	3.8	0.4	-20.8	-2.4
Other land transport	0.7	0.6	0.6	0.6	0.2	0.2	0.0	0.0	-22.2
Car manufacturing	0.3	0.4	0.4	0.2	0.0	0.1	0.0		-19.7
Non-maritime	1 047.6	1 144.0	1 126.9	959.8	1 012.5	1 020.0	96.5	0.7	-0.5
Direct	1 073.7	1 172.6	1 156.7	989.8	1 045.5	1 056.9	100.0	1.1	-0.3
Indirect	971.1	1 048.2	1 101.7	1 006.4	958.1	887.0			
Total	2 044.8	2 220.9	2 258.5	1 996.2	2 003.6	1 943.9			

Source: NBB.

Where $\sigma_{2020,s} = 100 \times \frac{v_{2020,s}}{v_{2020,Direct}}$ is the share of sector s (in %) in 2020, $\alpha_{2020,s} = 100 \times \frac{v_{2020,s} - v_{2019,s}}{v_{2019,s}}$ is the growth of sector s (in %) between 2019 and 2020, $\bar{\alpha}_s = 100 \times \left(\left(\frac{v_{2020,s}}{v_{2015,s}} \right)^{1/5} - 1 \right)$ is the (geometric) average growth of sector s (in %) between 2015 and 2020.

TABLE 4.5.2 Employment at the Liège port complex (in FTEs)

	2015	2016	2017	2018	2019	2020	$\sigma_{2020,s}$	$\alpha_{2020,s}$	$\bar{\alpha}_s$
Cargo handling	157	174	185	189	205	198	2.5	-3.3	4.8
Shipping agents and forwarders	61	73	93	125	144	183	2.3	27.5	24.7
Shipping companies	54	55	52	53	51	49	0.6	-3.1	-1.6
Port authority	34	35	34	33	34	33	0.4	-2.9	-0.6
Shipbuilding and repair	9	10	10	10	11	12	0.2	11.8	7.4
Maritime	314	347	374	410	445	476	6.0	7.1	8.7
Metalworking industry	2 440	2 307	2 355	2 376	2 438	2 259	28.4	-7.3	-1.5
Energy	1 286	1 246	1 219	1 197	1 199	1 199	15.1	0.0	-1.4
Chemicals industry	1 011	1 036	1 032	1 032	1 046	1 053	13.2	0.6	0.8
Construction	1 041	1 026	1 059	1 011	1 037	993	12.5	-4.2	-0.9
Other industries	888	750	698	711	748	783	9.8	4.7	-2.5
Other logistic services	358	367	411	397	445	450	5.7	1.1	4.7
Trade	390	370	378	376	383	362	4.5	-5.5	-1.5
Fuel production	125	125	122	121	122	125	1.6	2.6	0.0
Food industry	154	101	140	109	113	111	1.4	-1.8	-6.4
Electronics	74	73	81	85	87	82	1.0	-5.9	2.1
Road transport	91	79	77	75	74	66	0.8	-10.8	-6.3
Other land transport	12	10	8	8	3	2	0.0	-4.0	-27.3
Car manufacturing	7	8	10	7	0	0	0.0		-100.0
Non-maritime	7 877	7 496	7 590	7 506	7 693	7 485	94.0	-2.7	-1.0
Direct	8 191	7 843	7 963	7 915	8 138	7 961	100.0	-2.2	-0.6
Indirect	10 036	9 762	10 066	10 477	11 107	11 000			
Total	18 227	17 605	18 029	18 393	19 245	18 961			

Source: NBB.

Where $\sigma_{2020,s} = 100 \times \frac{v_{2020,s}}{v_{2020,Direct}}$ is the share of sector s (in %) in 2020, $\alpha_{2020,s} = 100 \times \frac{v_{2020,s} - v_{2019,s}}{v_{2019,s}}$ is the growth of sector s (in %) between 2019 and 2020, $\bar{\alpha}_s = 100 \times \left(\left(\frac{v_{2020,s}}{v_{2015,s}} \right)^{1/5} - 1 \right)$ is the (geometric) average growth of sector s (in %) between 2015 and 2020.

TABLE 4.5.3 Investment at the Liège port complex (in € million)

	2015	2016	2017	2018	2019	2020	$\sigma_{2020,s}$	$\alpha_{2020,s}$	$\bar{\alpha}_s$
Public sector	3.4	0.3	0.8	1.2	2.3	4.6	2.1	100.0	6.2
Cargo handling	3.0	7.0	3.6	4.0	4.3	3.5	1.6	-18.6	3.1
Shipping agents and forwarders	0.6	0.9	2.2	0.8	0.4	1.7	0.8	325.0	23.2
Shipbuilding and repair	0.0	0.0	0.0	0.1	0.1	0.6	0.3	500.0	
Port authority	0.8	0.1	0.2	0.5	0.6	0.5	0.2	-16.7	-9.0
Shipping companies	0.2	0.5	0.7	0.2	0.1	0.2	0.1	100.0	0.0
Maritime	8.1	8.7	7.6	6.8	7.8	11.0	5.0	41.0	6.3
Energy	93.4	66.4	63.6	75.2	58.9	78.7	36.1	33.6	-3.4
Chemicals industry	31.4	31.8	30.2	40.3	40.3	37.3	17.1	-7.4	3.5
Metalworking industry	27.3	35.2	55.8	43.6	32.5	18.6	8.5	-42.8	-7.4
Construction	15.6	15.9	14.4	16.2	21.6	17.0	7.8	-21.3	1.7
Food industry	4.2	4.2	4.1	3.4	2.0	16.9	7.7	745.0	32.1
Other industries	18.0	13.9	31.6	25.8	23.6	15.6	7.1	-33.9	-2.8
Fuel production	7.2	7.7	7.7	9.6	6.7	13.8	6.3	106.0	13.9
Other logistic services	4.3	3.6	7.6	6.1	8.4	5.0	2.3	-40.5	3.1
Trade	7.0	5.9	7.1	6.0	5.7	2.6	1.2	-54.4	-18.0
Road transport	1.7	1.2	0.6	1.7	1.4	1.3	0.6	-7.1	-5.2
Electronics	0.7	1.6	1.8	1.5	1.3	0.2	0.1	-84.6	-22.2
Other land transport	0.3	0.3	0.0	0.2	0.1	0.0	0.0	-100.0	-100.0
Non-maritime	211.1	187.9	224.6	229.5	202.5	207.2	95.0	2.3	-0.4
Direct	219.2	196.6	232.2	236.4	210.3	218.2	100.0	3.8	-0.1

Source: NBB.

Where $\sigma_{2020,s} = 100 \times \frac{v_{2020,s}}{v_{2020,Direct}}$ is the share of sector s (in %) in 2020, $\alpha_{2020,s} = 100 \times \frac{v_{2020,s} - v_{2019,s}}{v_{2019,s}}$ is the growth of sector s (in %) between 2019 and 2020, $\bar{\alpha}_s = 100 \times \left(\left(\frac{v_{2020,s}}{v_{2015,s}} \right)^{1/5} - 1 \right)$ is the (geometric) average growth of sector s (in %) between 2015 and 2020.

Annex 4.6 Port of Brussels

TABLE 4.6.1 Value added at the port of Brussels (in € million)

	2015	2016	2017	2018	2019	2020	$\sigma_{2020,s}$	$\alpha_{2020,s}$	$\bar{\alpha}_s$
Shipping agents and forwarders	12.4	10.7	9.2	7.8	6.8	8.2	1.2	20.6	-7.9
Port authority	6.0	4.7	5.5	4.5	4.6	6.5	0.9	41.3	1.6
Cargo handling	6.3	6.5	5.0	5.4	5.4	4.9	0.7	-9.3	-4.9
Shipping companies	-2.5	-0.3	-0.3	1.4	0.9	1.6	0.2	77.8	-191.5
Port trade	0.4	0.4	0.5	0.6	0.4	0.4	0.1	0.0	0.0
Public sector	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0
Fishing and fisheries industry	0.0	0.0	0.0	0.1	0.0	0.0	0.0		
Shipbuilding and repair	0.1	0.1	0.1	0.0	0.0	0.0	0.0		-100.0
Maritime	22.6	22.1	20.0	19.8	18.2	21.7	3.1	19.2	-0.8
Other logistic services	443.8	390.7	525.8	507.1	533.4	407.0	58.4	-23.7	-1.7
Trade	196.7	178.7	148.7	141.7	154.7	126.5	18.2	-18.2	-8.5
Other industries	48.4	58.5	61.7	60.1	57.1	56.6	8.1	-0.9	3.2
Chemicals industry	31.6	27.5	33.7	18.6	17.5	33.2	4.8	89.7	1.0
Construction	15.8	20.3	21.9	23.0	24.2	20.9	3.0	-13.6	5.8
Road transport	23.3	19.4	16.0	17.5	16.2	16.6	2.4	2.5	-6.6
Metalworking industry	7.9	9.6	9.9	9.8	8.8	8.2	1.2	-6.8	0.7
Food industry	12.9	13.0	16.1	10.3	8.7	7.3	1.0	-16.1	-10.8
Energy	1.6	0.8	0.3	-2.9	1.1	-1.3	-0.2	-218.2	-195.9
Non-maritime	782.1	718.6	834.1	785.3	821.6	674.9	96.9	-17.9	-2.9
Direct	804.8	740.8	854.1	805.1	839.9	696.6	100.0	-17.1	-2.8
Indirect	480.1	469.0	503.5	473.3	486.9	425.7			
Total	1 284.8	1 209.8	1 357.6	1 278.4	1 326.8	1 122.3			

Source: NBB.

Where $\sigma_{2020,s} = 100 \times \frac{v_{2020,s}}{v_{2020,Direct}}$ is the share of sector s (in %) in 2020, $\alpha_{2020,s} = 100 \times \frac{v_{2020,s} - v_{2019,s}}{v_{2019,s}}$ is the growth of sector s (in %) between 2019 and 2020, $\bar{\alpha}_s = 100 \times \left(\left(\frac{v_{2020,s}}{v_{2015,s}} \right)^{1/5} - 1 \right)$ is the (geometric) average growth of sector s (in %) between 2015 and 2020.

TABLE 4.6.2 Employment at the port of Brussels (in FTEs)

	2015	2016	2017	2018	2019	2020	$\sigma_{2020,s}$	$\alpha_{2020,s}$	$\bar{\alpha}_s$
Port authority	125	123	122	120	125	126	3.4	0.2	0.1
Shipping agents and forwarders	179	136	114	109	115	111	3.0	-3.1	-9.1
Cargo handling	87	84	54	55	56	51	1.4	-9.8	-10.2
Shipping companies	15	18	13	12	14	14	0.4	-1.4	-1.1
Port trade	5	4	4	6	5	2	0.0	-64.0	-17.5
Public sector	2	1	1	1	1	1	0.0	0.0	-12.9
Fishing and fisheries industry	0	0	0	1	0	0	0.0		
Maritime	412	367	309	304	316	304	8.1	-3.8	-5.9
Other logistic services	1 216	1 222	1 265	1 241	1 247	1 264	33.8	1.3	0.8
Trade	1 388	1 274	1 166	1 101	1 027	1 005	26.9	-2.2	-6.3
Other industries	352	369	351	354	364	350	9.4	-3.9	-0.1
Road transport	309	248	247	255	245	249	6.7	1.8	-4.2
Construction	246	239	248	243	244	226	6.0	-7.6	-1.7
Chemicals industry	115	130	124	129	139	139	3.7	0.5	3.9
Food industry	128	122	123	124	117	114	3.1	-2.9	-2.2
Metalworking industry	88	106	110	117	101	84	2.2	-16.7	-0.8
Energy	17	15	15	8	0	0	0.0		
Other land transport	0	0	0	0	0	0	0.0		-100.0
Non-maritime	3 859	3 725	3 648	3 572	3 484	3 431	91.9	-1.5	-2.3
Direct	4 271	4 091	3 957	3 876	3 801	3 735	100.0	-1.7	-2.6
Indirect	3 817	3 541	3 305	3 258	3 159	3 110			
Total	8 088	7 633	7 262	7 134	6 959	6 845			

Source: NBB.

Where $\sigma_{2020,s} = 100 \times \frac{v_{2020,s}}{v_{2020,Direct}}$ is the share of sector s (in %) in 2020, $\alpha_{2020,s} = 100 \times \frac{v_{2020,s} - v_{2019,s}}{v_{2019,s}}$ is the growth of sector s (in %) between 2019 and 2020, $\bar{\alpha}_s = 100 \times \left(\left(\frac{v_{2020,s}}{v_{2015,s}} \right)^{1/5} - 1 \right)$ is the (geometric) average growth of sector s (in %) between 2015 and 2020.

TABLE 4.6.3 Investment at the port of Brussels (in € million)

	2015	2016	2017	2018	2019	2020	$\sigma_{2020,s}$	$\alpha_{2020,s}$	$\bar{\alpha}_s$
Port authority	7.5	9.0	9.0	5.5	4.9	4.1	9.3	-16.3	-11.4
Public sector	3.7	8.8	8.6	3.7	3.4	3.3	7.5	-2.9	-2.3
Cargo handling	3.3	1.3	1.5	1.5	2.3	1.8	4.1	-21.7	-11.4
Shipping agents and forwarders	5.2	0.9	1.0	1.4	0.5	0.4	0.9	-20.0	-40.1
Shipping companies	0.0	0.0	0.0	0.0	0.0	0.3	0.7		
Port trade	0.1	0.2	0.3	0.9	0.1	0.1	0.2	0.0	0.0
Maritime	19.9	20.3	20.5	13.0	11.3	9.9	22.5	-12.4	-13.0
Trade	16.0	19.8	12.8	14.5	12.0	11.9	27.0	-0.8	-5.7
Other logistic services	17.7	11.9	28.8	56.2	57.6	11.6	26.4	-79.9	-8.1
Other industries	1.7	13.2	2.1	8.3	5.2	3.8	8.6	-26.9	17.5
Construction	2.3	3.0	2.6	3.9	3.4	2.7	6.1	-20.6	3.3
Road transport	2.7	1.9	1.5	4.1	5.0	1.7	3.9	-66.0	-8.8
Chemicals industry	0.7	0.6	1.1	1.3	3.7	1.0	2.3	-73.0	7.4
Metalworking industry	1.4	1.1	0.4	1.0	0.9	0.9	2.0	0.0	-8.5
Food industry	2.3	4.6	1.6	0.9	0.5	0.3	0.7	-40.0	-33.5
Energy	0.3	0.0	1.4	2.6	2.6	0.1	0.2	-96.2	-19.7
Non-maritime	45.2	56.2	52.3	92.8	90.8	34.0	77.3	-62.6	-5.5
Direct	65.1	76.4	72.8	105.8	102.1	44.0	100.0	-56.9	-7.5

Source: NBB.

Where $\sigma_{2020,s} = 100 \times \frac{v_{2020,s}}{v_{2020,Direct}}$ is the share of sector s (in %) in 2020, $\alpha_{2020,s} = 100 \times \frac{v_{2020,s} - v_{2019,s}}{v_{2019,s}}$ is the growth of sector s (in %) between 2019 and 2020, $\bar{\alpha}_s = 100 \times \left(\left(\frac{v_{2020,s}}{v_{2015,s}} \right)^{1/5} - 1 \right)$ is the (geometric) average growth of sector s (in %) between 2015 and 2020.

Annex 4.7 Outside port zone

TABLE 4.7.1 Value added at the outside port zone (in € million)

	2015	2016	2017	2018	2019	2020	$\sigma_{2020,s}$	$\alpha_{2020,s}$	$\bar{\alpha}_s$
Shipping companies	85.5	86.4	85.3	72.7	49.3	34.7	42.9	-29.6	-16.5
Fishing and fisheries industry	22.3	26.3	23.4	24.2	21.6	23.3	28.8	7.9	0.9
Shipbuilding and repair	12.7	11.6	14.3	15.3	16.5	13.6	16.8	-17.6	1.4
Cargo handling	17.8	29.1	22.4	-2.2	-3.1	9.2	11.4	-396.8	-12.4
Direct	138.3	153.4	145.3	109.9	84.4	80.8	100.0	-4.3	-10.2
Indirect	106.7	123.2	102.0	77.6	54.8	49.5			
Total	245.0	276.6	247.3	187.5	139.2	130.3			

Source: NBB.

Where $\sigma_{2020,s} = 100 \times \frac{v_{2020,s}}{v_{2020,Direct}}$ is the share of sector s (in %) in 2020, $\alpha_{2020,s} = 100 \times \frac{v_{2020,s} - v_{2019,s}}{v_{2019,s}}$ is the growth of sector s (in %) between 2019 and 2020, $\bar{\alpha}_s = 100 \times \left(\left(\frac{v_{2020,s}}{v_{2015,s}} \right)^{1/5} - 1 \right)$ is the (geometric) average growth of sector s (in %) between 2015 and 2020.

TABLE 4.7.2 Employment at the outside port zone (in FTEs)

	2015	2016	2017	2018	2019	2020	$\sigma_{2020,s}$	$\alpha_{2020,s}$	$\bar{\alpha}_s$
Cargo handling	1 553	1 531	1 540	1 472	1 471	1 450	72.5	-1.4	-1.4
Fishing and fisheries industry	202	196	184	181	190	224	11.2	18.0	2.1
Shipbuilding and repair	161	173	175	183	202	190	9.5	-5.8	3.4
Shipping companies	134	126	134	122	120	137	6.8	14.0	0.4
Direct	2 050	2 027	2 032	1 958	1 983	2 001	100.0	0.9	-0.5
Indirect	2 203	2 287	2 263	2 157	2 254	2 234			
Total	4 253	4 314	4 296	4 115	4 237	4 235			

Source: NBB.

Where $\sigma_{2020,s} = 100 \times \frac{v_{2020,s}}{v_{2020,Direct}}$ is the share of sector s (in %) in 2020, $\alpha_{2020,s} = 100 \times \frac{v_{2020,s} - v_{2019,s}}{v_{2019,s}}$ is the growth of sector s (in %) between 2019 and 2020, $\bar{\alpha}_s = 100 \times \left(\left(\frac{v_{2020,s}}{v_{2015,s}} \right)^{1/5} - 1 \right)$ is the (geometric) average growth of sector s (in %) between 2015 and 2020.

TABLE 4.7.3 Investment at the outside port zone (in € million)

	2015	2016	2017	2018	2019	2020	$\sigma_{2020,s}$	$\alpha_{2020,s}$	$\bar{\alpha}_s$
Cargo handling	189.9	213.3	211.2	239.9	195.9	351.4	85.9	79.4	13.1
Shipping companies	25.0	17.9	31.0	31.0	29.7	29.6	7.2	-0.3	3.4
Fishing and fisheries industry	5.4	3.9	8.4	7.3	10.8	22.1	5.4	104.6	32.6
Shipbuilding and repair	1.1	1.9	1.7	2.3	4.7	6.0	1.5	27.7	40.4
Direct	221.4	237.0	252.3	280.4	241.1	409.1	100.0	69.7	13.1

Source: NBB.

Where $\sigma_{2020,s} = 100 \times \frac{v_{2020,s}}{v_{2020,Direct}}$ is the share of sector s (in %) in 2020, $\alpha_{2020,s} = 100 \times \frac{v_{2020,s} - v_{2019,s}}{v_{2019,s}}$ is the growth of sector s (in %) between 2019 and 2020, $\bar{\alpha}_s = 100 \times \left(\left(\frac{v_{2020,s}}{v_{2015,s}} \right)^{1/5} - 1 \right)$ is the (geometric) average growth of sector s (in %) between 2015 and 2020.

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