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Working Paper

Flemish maritime ports, Liège port complex and the port of Brussels – Report 2015

NBB Working Paper, No. 321

Provided in Cooperation with:

National Bank of Belgium, Brussels

Suggested Citation: Mathys, Claude (2017) : Flemish maritime ports, Liège port complex and the port of Brussels – Report 2015, NBB Working Paper, No. 321, National Bank of Belgium, Brussels

This Version is available at:

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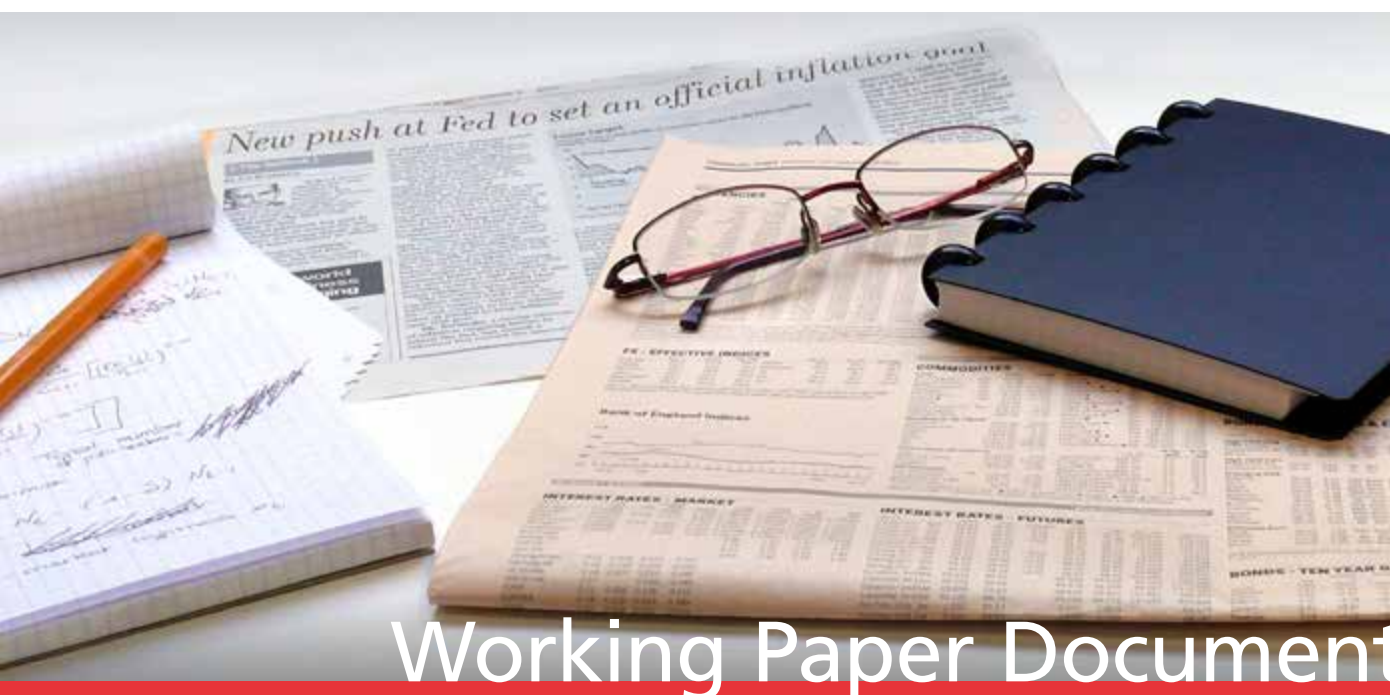
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ECONOMIC IMPORTANCE OF THE BELGIAN PORTS:

Flemish maritime ports, Liège port complex and the port of Brussels – Report 2015



Working Paper Document

by Claude Mathys

June 2017 **No 321**

Editor

Jan Smets, Governor of the National Bank of Belgium

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ISSN: 1375-680X (print)

ISSN: 1784-2476 (online)

Abstract

This paper is an annual publication issued by the Microeconomic Analysis service of the National Bank of Belgium.

The Flemish maritime ports (Antwerp, Ghent, Ostend, Zeebrugge), the Autonomous Port of Liège and the port of Brussels play a major role in their respective regional economies and in the Belgian economy, not only in terms of industrial activity but also as intermodal centers facilitating the commodity flow.

This update paper¹ provides an extensive overview of the economic importance and development of the Flemish maritime ports, the Liège port complex and the port of Brussels for the period 2010 - 2015, with an emphasis on 2015. Focusing on the three major variables of value added, employment and investment, the report also provides some information based on the social balance sheet and an overview of the financial situation in these ports as a whole. These observations are linked to a more general context, along with a few cargo statistics.

Annual accounts data from the Central Balance Sheet Office were used for the calculation of direct effects, the study of financial ratios and the analysis of the social balance sheet. The indirect effects of the activities concerned were estimated in terms of value added and employment, on the basis of data from the National Accounts Institute. As a result of the underlying calculation method the changes of indirect employment and indirect value added can differ from one another.

The developments concerning economic activity in the six ports in 2014 - 2015 are summarized in the table on the next page.

In 2015 the growth of maritime traffic in the Flemish maritime ports was due to developments in the port of Antwerp and the port of Ghent. Direct value added increased in all Flemish maritime ports in 2015. However, direct employment is continuing to decline. Investment was down everywhere except in the port of Zeebrugge.

Cargo traffic in the Liège port complex declined in 2015, whereas it slightly slowed down in the port of Brussels. At the same time, direct value added in Liège shrank while it rose sharply in the port of Brussels. By contrast, direct employment was down in both ports.

This report provides a comprehensive account of these issues, giving details for each economic sector, although the comments are confined to the main changes that occurred in 2015.

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

Key words: branch survey, maritime cluster, subcontracting, indirect effects, transport, intermodality, public investments.

JEL classification: C67, H57, J21, L22, L91, L92, R15, R34 and R41.

¹ Update of Van gastel G. (June 2016), Economic importance of the Belgian ports: Flemish maritime ports, Liège port complex and the port of Brussels - Report 2014, NBB, Working Paper No. 299 (Document series). All figures have been updated. This paper is available at the following address: <http://www.nbb.be> > Publications and research > Working papers > 2016 – No. 299.

Ports		Value added (current prices)		Employment		Investment (current prices)		Cargo traffic	
		€ million	Change 2014-2015 (in p.c.)	FTE	Change 2014-2015 (in p.c.)	€ million	Change 2014-2015 (in p.c.)	x 1,000 tonnes	Change 2014-2015 (in p.c.)
ANTWERP	Direct	10,946.0	+ 9.4	60,656	- 0.9	3,005.1	- 9.0		
	Indirect	9,746.5	+ 10.5	81,692	- 1.5				
	TOTAL	20,692.6	+ 9.9	142,348	- 1.3	3,005.1	- 9.0	208,425	+ 4.7
GHENT	Direct	3,795.7	+ 4.8	27,809	- 1.1	365.3	- 10.2		
	Indirect	4,121.8	+ 3.9	36,648	+ 2.5				
	TOTAL	7,917.5	+ 4.3	64,457	+ 0.9	365.3	- 10.2	26,362	+ 1.8
OSTEND	Direct	508.3	+ 1.6	4,993	- 1.4	61.5	- 49.4		
	Indirect	396.8	+ 6.4	4,463	- 0.1				
	TOTAL	905.0	+ 3.6	9,457	- 0.8	61.5	- 49.4	1,295	- 9.5
ZEEBRUGGE	Direct	975.7	+ 2.8	9,268	- 1.9	260.9	+ 14.4		
	Indirect	881.9	+ 2.8	9,968	- 1.9				
	TOTAL	1,857.7	+ 2.8	19,237	- 1.9	260.9	+ 14.4	38,318	- 9.9
FLEMISH	Direct	16,225.7	+ 7.6	102,727	- 1.1	3,692.8	- 9.0		
MARITIME	Indirect	14,166.9	+ 8.6	126,849	- 0.1				
PORTS	TOTAL	30,392.6	+ 8.1	229,576	- 0.5	3,692.8	- 9.0	274,400	+ 2.1
LIÈGE	Direct	1,021.0	- 9.8	7,761	- 4.0	208.0	+ 6.0		
	Indirect	1,070.2	- 11.3	11,185	- 3.7				
	TOTAL	2,091.2	- 10.6	18,946	- 3.8	208.0	+ 6.0	14,605	- 2.6
BRUSSELS	Direct	772.8	+ 58.4	4,159	- 0.5	55.0	+ 3.8		
	Indirect	471.8	+ 38.1	3,851	+ 1.3				
	TOTAL	1244.6	+ 50.0	8,011	+ 0.3	55.0	+ 3.8	4,364	- 1.7
BELGIAN	Direct	18,019.5	+ 7.9	114,647	- 1.3	3,955.7	- 8.1		
PORTS	Indirect	15,148.8	+ 7.8	137,747	- 0.2				
	TOTAL	33,168.3	+ 7.8	252,394	- 0.7	3,955.7	- 8.1	293,369	+ 1.7

Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office, and the Belgian IOTs). For ports with economic linkages between them, a portion of the indirect effect calculated by port is cancelled out when the calculation is done at a more aggregate level, i.e. for a group of ports. The sum of the indirect effects by port is thus greater than the total indirect effects calculated for the ports as a whole.

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This paper was made with the technical support and the expertise of Mr Marc Van Kerckhoven.

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 author is affiliated. All remaining errors are ours.

The author would like to thank his colleagues from the Microeconomic Information department for their assistance and support as well as the colleagues from the National and regional accounts service for their input. Special thanks go to Rudy Trogh, Head of Department at the NBB, and Jean-Pierre Merckx of the Flemish Port Commission for their support and their comments on this paper, and also to François Coppens for the calculation method of indirect effects.

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Foreword

Every year the National Bank of Belgium publishes an update of the study of the economic importance of the Flemish maritime ports, the Liège port complex and the port of Brussels. Two aspects of the sector's economic impact are highlighted: the direct effects and the indirect effects. The former concerns the activities resulting from the presence of maritime and non-maritime enterprises and public services in or near the ports, while the latter relates to the value added and employment generated by suppliers and subcontractors serving these enterprises and based in Belgium.

The statistical data covers the period 2010 - 2015, but only the main developments recorded in the period 2014 - 2015 are discussed in detail. The number of annexes is limited to:

- the list of NACE-BEL 2008 branches.
- the definition of the financial ratios.

The methodology remains mainly unchanged: the criteria for selecting firms and the analysis are the same as in previous editions. The NACE-BEL 2008 code is used to select and classify companies by sector. Owing to the use of the latest available statistical data (see introduction), the estimates of the indirect effects may differ from those in previous publications.

Following a brief introduction, the study is split into six parts devoted to the four Flemish maritime ports, the Liège port complex, and the port of Brussels. For reasons explained in the introduction, the commentary in this study will be very brief, and the emphasis will be on the statistical section.

Introduction

Objectives of the study and some comments on the methodology

The economic importance of the ports examined is analysed from three angles, namely the purely economic angle, and the social and financial angles. The study only covers firms belonging to branches of activity which have an economic link with the ports. That link is defined in relation to both a functional and a geographical criterion.

The main developments in the period 2010 - 2015 concern the study of the following variables:

- value added at current prices²: the value which 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). In accounting terms, this is calculated as the sum of staff costs, depreciation and value adjustments, the operating profit or loss, provisions for liabilities and charges, and certain operating expenses;
- employment in full-time equivalents (FTE): the average workforce during the financial year. Direct employment only covers employees on the payroll of the businesses and public services concerned, indirect employment also includes self-employed workers.
- investment at current prices³: this corresponds to the tangible fixed assets acquired during the year, including capitalised production costs⁴.

The economic impact of the ports under review is described on the basis of these three variables. Employment and the social balance sheet are also taken into account in the analysis of the social impact. That section deals in particular with working time, staff costs, the extent to which use is made of external personnel, and the composition, movements and training of the labour force.

The financial analysis forms the third angle of the study; it is based on the examination of three financial ratios and a financial health indicator, using a model designed by the Bank⁵. The ratios in question are the return on equity after taxes, liquidity in the broad sense, and solvency. The current edition presents a financial analysis of Belgian ports taken as a whole. Readers wishing to compare the financial ratios of an individual company with its sector ratios can find this information in the company reports published by the Central Balance Sheet Office. These company reports are composed of five parts⁶, one of which is devoted to comparing the financial ratios of the company with those of its sector, and another of which is devoted to situating the company in one of the ten categories of financial health based on its composite financial health indicator. This comparison is more relevant than a comparison based principally on geographic location, which would include a variety of business activities. The financial health indicator is based on Belgian companies' annual accounts. This indicator is designed as a weighted combination of variables, created by means of a model constructed in the same way as a failure prediction model. The model takes the form of a logistic regression discriminating between failing and non-failing companies. The indicator summarizes each company's situation in a single value which takes account simultaneously of the solvency, liquidity and profitability dimensions.

The current edition also presents an overview of the relative importance of the different components of value added for the year 2015.

² Unless otherwise stated, the text always indicates value added at current prices. Developments at constant prices (by volume) are explicitly mentioned. Value added at constant prices is calculated by means of the deflator of gross domestic product.

³ Unless otherwise stated, investment is always indicated at current prices. 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.

⁴ Decommissioning of assets is not taken into account.

⁵ See Vivet D. (2011), *Development of a financial health indicator based on companies' annual accounts*, NBB, Working Paper No. 213 (Document series), Brussels.

⁶ An interactive online application "Company file" is available on the Central Balance Sheet Office's website. It enables, based on several annual accounts drawn up according to a standard model for recent financial years, to analyze the financial situation of a company and to compare it with its sector. The five parts of the company report are: identifying company information, a survey of the major elements of the annual accounts, a survey of the cash flow, a comparison of company ratios with those of its economic sector, the company's positioning in one of the ten pre-defined categories of financial health based on its composite financial health indicator (See <http://cri.nbb.be>).

The microeconomic data used in this study were obtained from the annual accounts filed with the Central Balance Sheet Office⁷, from the statistics produced by the National Accounts Institute (NAI⁸) and to a lesser extent, from surveys. The most recent annual accounts for the 2015 financial year included in this study were filed with the Central Balance Sheet Office in January 2017⁹. The data necessary to estimate the indirect effects up to 2015, are also published by the NAI with a low frequency and after a certain time lag. The results of the indirect effects are approximations and should be interpreted with caution. The latest updates were included in the calculations, while the methodology was refined. For more information, see the 2004 report published in June 2006¹⁰.

The NACE-BEL 2008 classification is used for the purposes of selecting and ranking the companies by sector. NACE-BEL 2008 is the classification system for economic activities employed by the National Accounts Institute. The activity codes (NACE-BEL) for economic units have been harmonised between the institutions making up the NAI, which should help give a more accurate and up-to-date picture of economic reality.

In December 2013 the National Accounts Institute published an input-output table for 2010. In December 2015 the input-output table for 2010 was updated with the new accounting rules of the ESA 2010 standard¹¹ and the harmonised NACE codes¹². The latest supply and use table relates to the year 2013. These tables were used to produce estimates for the years 2010 to 2015. Indirect employment includes employees and self-employed persons, while direct employment mainly relates to employees. The reader must keep in mind that indirect effects need to be interpreted with caution, and should be regarded more as an indicator of the importance of the ports for the national and local economy rather than as an absolute value.

The indirect effects have been calculated for each port separately. For ports with economic linkages between them, a portion of the indirect effect calculated by port is cancelled out when the calculation is done at a more aggregate level, i.e. for a group of ports. The sum of the indirect effects by port is thus greater than the total indirect effects calculated for the ports as a whole.

As part of the strategic plans for the port areas, the Flemish Region has established several land banks. This acquired land is a compensation for land that disappears through the port development and includes other land or results from land exchanges with farmers concerned. In this publication, the amounts relating to these land banks are not included in the investments of the public sector. The investment by the public sector to improve the maritime access to the different Belgian ports is also not included.

Some of the results for years up to 2014 may differ from those stated in the earlier studies. That is due mainly to the availability of more accurate data on certain firms, information that is extrapolated into the past to ensure consistent time series. Moreover, the annual accounts of newly-created enterprises can only be recorded after a certain time lag.

⁷ A service of the National Bank's Microeconomic Information Department. (See <http://www.centralbalancesheetoffice.be>).

⁸ The National Accounts Institute (NAI) set up by the law of 21 December 1994, links three institutions: the National Statistical Institute (NSI, now FPS Economy, SMEs, Self-employed and Energy – Statistics Belgium), the National Bank of Belgium and the Federal Planning Bureau. The NAI's duties include drawing up the real national accounts and the input-output tables which are needed to estimate the indirect effects. The latest available data for calculating the indirect effects in this study were the input-output table for 2010 and the supply and use table for 2013.

⁹ Belgian firms are required to submit their annual accounts to the Central Balance Sheet Office by no later than seven months following the end of the financial year. A small proportion of firms -mainly small businesses or those in difficulties- fail to meet the obligation by that date. In January 2017, that percentage was negligible and the impact on the figures is minimal.

¹⁰ The methodology is presented in the introduction by Lagneaux F. (2006) and set out in full in annexes 1 to 4. The study is available on the following address: <http://www.nbb.be> > Publications and research > Economic/financial publications > Working papers > 2006 – No. 86.

¹¹ Eurostat has formulated the European System of National and Regional Accounts (ESA) to provide a systematically detailed description of the EU economies, their components and relations with the other economies. The ESA is therefore used as the central reference point for the economic and social statistics of the EU and its member states. The international systems of national accounts are revised from time to time to cater for new statistical requirements called for in response to changes in the contemporary economies and reflecting methodological developments.

¹² See <http://www.plan.be> > Publications > Themes > Input-output tables and <http://www.nbb.be> > Statistics > Statistical publications > National accounts > Supply and use tables.

For a number of years, the National Bank's port studies have been an important statistical source for the various stakeholders concerned with their economic analysis. Since most port authorities and various government bodies provide detailed accounts of maritime activities, the Bank sought scope for efficiency and synergy. For that reason, this publication will place more emphasis on the statistical section. The commentary will give the general outline via the contribution from the port authorities. For the more detailed, comprehensive account of developments, see the annual reports of the Belgian port authorities and specialised publications such as those issued by the Flemish Port Commission.

International environment

The International Monetary Fund¹³ estimates global output growth for 2016 at 3.1%, slightly down from 2015, as output has shrunk markedly in the advanced economies, which are still suffering from the aftermath of the financial crisis and are faced with sluggish productivity. Output in the United States rocketed in the third quarter after a poor first quarter. In Europe, on the other hand, the production tool still is not working at full capacity. Output growth in developing countries and emerging markets, however, has remained stable. China's economy, while remaining largely above 6%, continues to decelerate as a result of its rebalancing act. Commodity-exporting countries in the emerging markets have reduced their investments. The recession in Russia has lingered on in 2016, though it was less pronounced than in 2015.

The World Trade Organization¹⁴ estimates world trade volume growth for 2015 at 2.7%. 2015 marked the fourth consecutive year with trade volume growth below 3%. The WTO notes that the volume of exchanges decreased sharply in the first quarter of 2015, but this trend was reversed towards the end of the year. Factors explaining the weakness in trade in 2015 include the economic slowdown in China, the recession in Brazil, falling prices for oil and other commodities, and exchange rate volatility.

The world fleet grew by 3.5% in 2015¹⁵. While this percentage marks a sharp decline compared to the past years, it is still higher than the rise in demand and therefore does not reduce overcapacity. Such overcapacity, combined with weak demand, caused most shipping segments, except tankers, to suffer historic low levels of freight rates. Shipping companies are therefore maintaining their cost-saving measures such as slow steaming, consolidation and integration, and restructuring within new alliances.

The share of dry cargo shipments in world seaborne trade was 70.7% of total goods loaded during the year 2015. This type of transport, which had still increased by 5% in 2014, rose by a markedly lower 1.2%. Shipment for the five main dry bulk cargo categories (iron ore, coal, grain, bauxite and alumina and phosphate rock) dropped by 1.3%. In this list, grain trade increased by 4.9% and bauxite by 18.1%, but coal shipping decreased by 6.9%. Minor bulk commodities increased by 1.5%, thanks to the rise in manufactures and agribulk. Growth of manufactures was supported inter alia by increasing export of steel products from China. Over a year, growth in container shipping, which accounts for two thirds of other dry freight, slipped from 6.1% to 2.9%. One reason for this slowdown is the weakness in intra-Asian trade and exchanges between East Asia and Europe. The liquid bulk industry, on the other hand, had an excellent year. After two years of contraction, crude oil shipping rose by 3.8%. This turnaround can be explained by a recovery in demand, strong supply, low prices, the rise in processing capacity in refineries and improvement in their margin, and an increase in storage capacities. 2015 was also the year during which the United States Congress lifted the ban on US oil exports. In 2015, growth in shipping of oil products and gas accelerated, reaching 5.2%. Shipping of liquefied natural gas, which accounts for a third of global trade in natural gas, grew much more modestly partly due to contraction of imports of gas into Japan, the Republic of Korea and China.

¹³ IMF, *World Economic Outlook (16 January 2017)*, Washington DC,

¹⁴ WTO, *World Trade Statistical Review 2016*, Geneva.

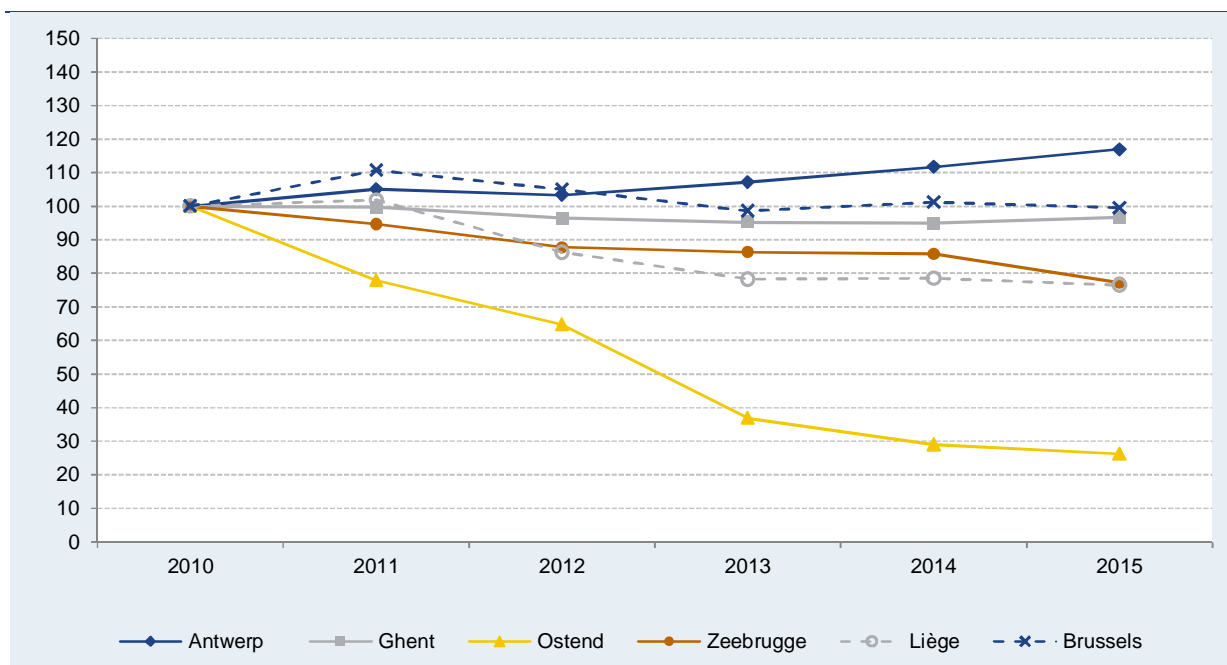
¹⁵ UNCTAD, *Review of Maritime Transport 2016*, UNCTAD New York and Geneva.

1 ECONOMIC IMPORTANCE OF THE BELGIAN PORTS

1.1 Traffic in the Belgian ports

CHART 1 CARGO TRAFFIC IN THE BELGIAN PORTS

(indices 2010 = 100)



Sources: Port Authorities.

Maritime shipping in the Flemish maritime ports increased by 2% in 2015, but not all ports experienced a rise in their volume of transhipped cargo: the ports of Antwerp and Ghent are enjoying higher volume, while the ports of Ostend and Zeebrugge are declining. The latter was affected by reorganisation and the withdrawal of major shipping lines. However, Zeebrugge to Scandinavia traffic volumes were up sharply. Facing a regional decline in activity in the public works sector, the port of Ostend recorded a reduction in dry bulk cargo. By contrast, the port of Antwerp saw an increase in traffic for all types of cargo. Developments in the port of Ghent are more heterogeneous, but have still led to growth in transshipment.

Inland waterway tonnages in the port of Brussels and in the Liège port complex¹⁶ decreased slightly.

Regarding Flemish maritime ports, transshipment of containers increased solely in the port of Antwerp. The ports of Ghent and Zeebrugge recorded a strong decline. One reason for such weakening was the withdrawal from the port of Zeebrugge of the 2M Alliance between shipping companies Maersk and MSC. In the port of Ghent, the suspension of the sole Ghent-Zeebrugge container ship line led to a drop in the volume of containers handled. In spite of a weaker fourth quarter, 2015 has been an excellent year as far as container loading and unloading in the port of Antwerp is concerned. Growth stood at 7.5% in TEU and at 4.6% in tonnes, which is remarkable, considering that overall, the year was rather grim for the industry. The number of ships over 13,000 TEU that called the port of Antwerp increased by 36%.

The port of Ghent is the only one to have experienced a decline in its roll-on/roll-off traffic, though it must be added that it had reached a record high the year before. With almost 4%¹⁷, the port of Antwerp recorded the strongest growth between 2014 and 2015. The port of Zeebrugge remains above the 13

¹⁶ The traffic considered here is the total of the cargo handled on the public and the private quays. As from 2015 the traffic of the Liège Port Complex will only include the public quays. The private quays are gradually managed by the Autonomous Port of Liège

¹⁷ Roll-on roll-off containers excluded.

million ton mark. In 2015, it strengthened its position as the world's largest maritime port in terms of new cars with over 2.4 million units transhipped in one year.

Conventional, i.e. non-containerised general cargo, was up 3.3% in 2015. The port of Antwerp recorded a moderate growth of 1.3%. The port of Ghent, for its part, rose by more than 12%, thus setting a new record. In 2015, the volume of conventional cargo loaded and unloaded in the port of Zeebrugge contracted slightly, among others because part of the paper pulp loadings are now transported in containers.

Liquid bulk increased in the ports of Antwerp, Ghent and Zeebrugge. The most remarkable rise was recorded in Ghent, where it reached 9.1%. After a three-year decline, the port thus managed to reverse the trend, as did the port of Zeebrugge, which succeeded in curbing the bearish tendency observed over the previous three years. By contrast, the port of Antwerp sustained its momentum and recorded a rise for the third year in a row. Overall, transshipment of liquid bulk in Flemish ports increased by 5.9% in one year.

With a 0.8% rise, dry bulk increased in a more moderate way in the Flemish ports. In 2015, after a sharp decline in 2013 and a milder one in 2014, the port of Antwerp recorded a 2.1% rise in loaded and unloaded dry bulk. The volume of dry bulk transhipped in the port of Ghent did not vary much between 2014 and 2015. Nevertheless, Ghent remains the first Flemish port in this field. Thanks to the loading and unloading of sand and gravel as well as agribulk, the Port of Zeebrugge reported a strong growth. The port of Ostend is the only Flemish port which saw a decrease in its dry bulk traffic; the main cause is the regional drop in activity in the public works sector.

TABLE 1 MARITIME TRAFFIC IN THE FLEMISH PORTS IN 2015
(in thousands of tonnes, unless otherwise stated)

	Antwerp	Ghent	Ostend	Zeebrugge	Total	Change from 2014 to 2015 (in p.c.)	Share in 2015 (in p.c.)
Containers	113,295	258	0	15,625	129,177	- 0.1	47.1
Change 2014 - 2015 (p.c.)	+ 4.6	- 37.7	n.	- 23.8			
Roll-on/roll-off ¹⁸	4,654	2,079	0	13,451	20,183	+ 2.6	7.4
Conventional general cargo ¹⁹	10,005	3,564	43	1,174	14,786	+ 3.3	5.4
Liquid bulk	66,685	3,721	29	6,754	77,189	+ 5.9	28.1
Dry bulk	13,786	16,740	1,223	1,315	33,064	+ 0.8	12.0
TOTAL 2015	208,425	26,362	1,295	38,318	274,400	+ 2.1	100.0
Change 2014 - 2015 (p.c.)	+ 4.7	+ 1.8	- 9.5	- 9.9	+ 2.1		
TOTAL 2016 (p.m.)	214,170	29,087	1,464	37,813	282,535		
Change 2015 - 2016 (p.c.)	+ 2.8	+ 10.3	+ 13.1	- 1.3	+ 3.0		

Source: Port authorities and Flemish Port Commission.

In 2015, waterway traffic in the Liège port complex was down by 2.6%²⁰. The rise in transhipped volumes of coke and petroleum products, quarry products, secondary raw materials and waste did not manage to fully compensate for the drop in volumes of agricultural products, coal and lignite, and chemicals. Another highlight in the port's activity is a 27% rise in its container traffic in TEU.

In 2015, waterway traffic in the port of Brussels showed a 1.7% decline. This decrease comes mainly from the drop in tonnages of construction sites land removal, as no dredging work has been carried out in Brussels in 2015. However, the Port of Brussels remarks that diversification of traffic types is sending out positive signals, with very strong growth in container and pallet transportation.

¹⁸ Abbreviated as RoRo. Horizontal handling of goods using wheeled equipment inside and outside the ship, unlike LoLo (lift on/ lift-off), which entails vertical handling. The RoRo data presented in this report do not take into account containerised cargo, this category of goods being included in the line entitled "containers".

¹⁹ The term "general cargo" comprises the following categories: containerised goods, RoRo and conventional general cargo.

²⁰ The traffic considered here is the total of the cargo handled on the public and the private quays. As from 2015 the traffic of the Liège Port Complex will only include the public quays. The private quays are gradually managed by the Autonomous Port of Liège

1.2 Competitive position of the Belgian ports

In order to refine the analysis of the competitive position of the Flemish maritime ports, all cargo traffic is compared with that of the other ports in the Hamburg - Le Havre range²¹. The share of the four Flemish ports in that range increased slightly in 2015 from 23.0 to 23.3 %.

TABLE 2 TOTAL MARITIME TRAFFIC IN THE HAMBURG - LE HAVRE RANGE (INCLUDING OSTEND AND ZEELAND SEAPORTS)

(in millions of tonnes, unless otherwise stated²²)

Port	2010	2011	2012	2013	2014	2015	2016 (p.m.)	Annual average change from 2010 to 2015	Change from 2014 to 2015	Average share in the range from 2010 to 2015	Share in 2015
								(in p.c.)	(in p.c.)	(in p.c.)	(in p.c.)
Antwerp	178.2	187.2	184.1	191.0	199.0	208.4	214.2	+ 3.2	+ 4.7	16.7	17.7
Ghent	27.3	27.2	26.3	26.0	25.9	26.4	29.1	- 0.7	+ 1.8	2.3	2.2
Ostend	4.9	3.8	3.2	1.8	1.4	1.3	1.5	- 23.5	- 9.5	0.2	0.1
Zeebrugge	49.6	47.0	43.5	42.8	42.5	38.3	37.8	- 5.0	- 9.9	3.8	3.2
Total Flemish ports	260.0	265.2	257.2	261.6	268.9	274.4	282.5	+ 1.1	+ 2.1	23.1	23.3
Amsterdam ²³	72.7	74.9	77.1	78.5	79.8	78.5	78.8	+ 1.5	- 1.6	6.7	6.7
Bremen	68.9	80.6	84.0	78.7	78.3	73.4	74.2	+ 1.3	- 6.2	6.8	6.2
Dunkirk	42.7	47.5	47.6	43.6	47.1	46.6	46.7	+ 1.8	- 1.1	4.0	4.0
Hamburg	120.0	132.2	130.9	139.0	145.7	137.8	138.2	+ 2.8	- 5.4	11.7	11.7
Le Havre	70.2	67.6	63.5	67.2	67.6	68.9	66.0	- 0.4	+ 2.0	5.9	5.8
Rotterdam	430.2	434.6	441.5	440.5	444.7	466.4	461.2	+ 1.6	+ 4.9	38.7	39.6
Zeeland Seaports ²⁴	33.0	35.5	33.6	33.0	35.1	33.1	33.6	+ 0.1	- 5.8	3.0	2.8
<i>Total for the 11 ports</i>	<i>1,097.6</i>	<i>1,138.0</i>	<i>1,135.4</i>	<i>1,142.1</i>	<i>1,167.1</i>	<i>1,179.1</i>	<i>1,181.2</i>	<i>+ 1.4</i>	<i>+ 1.0</i>		
<i>Total world traffic</i>	<i>8,408.9</i>	<i>8,784.3</i>	<i>9,196.7</i>	<i>9,513.6</i>	<i>9,843.4</i>	<i>10,047.5</i>		<i>+ 3.6</i>			
<i>Share for the 11 ports in world traffic (in p.c.) ...</i>	<i>13.1</i>	<i>13.0</i>	<i>12.3</i>	<i>12.0</i>	<i>11.9</i>	<i>11.7</i>					

Sources: For the traffic in the range: port authorities; for world traffic (tonnes loaded): Unctad, *Review of Maritime Transport 2016*.

The port of **Rotterdam** recorded a 4.9% increase in transhipped volumes. This rise comes mainly from the loading and unloading of crude oil and petroleum products, which grew by 8.1% and 18% respectively. The total amount of liquid bulk increased by 10.9%, representing 48% of total traffic in the port in 2015. By contrast, dry bulk and container traffic decreased by around 1%. After a rise in 2014, the transhipped volume of conventional general cargo decreased by 5.5%. Roll-on/roll-off traffic, on the contrary, increased by 10.1%.

The port of **Hamburg** saw its traffic decrease by 5.4% in 2015. Imports declined slightly less than exports. Both agribulk and grab cargo has increased whereas liquid cargo was slightly down. Massive imports of coal boosted the grab cargo segment. The conventional general cargo handling decreased by 14.1%; the decline was mainly with export. Transhipment of containers decreased sharply in 2015 (-9.3%). The port of Hamburg was affected by the decline in trade with China and Russia. Moreover, transhipment of containers towards Poland contracted as well.

The port of **Amsterdam** experienced mixed fortunes depending on the type of cargo. Regarding liquid bulk, transhipment of petroleum products grew by 1.1% and that of other liquid bulk cargo by 11.9%. Regarding dry bulk cargo, however, transhipment of coal declined by 10.7%, that of fertilizer by 8.8%

²¹ For the purposes of this study, the range comprises the ports of Hamburg, Bremen, Amsterdam, Rotterdam, the Zeeland Seaports complex (ports of Terneuzen and Flessingue), Antwerp, Ghent, Zeebrugge, Ostend, Dunkirk and Le Havre.

²² In principle, maritime traffic excludes bunkering. However, some ports' traffic figures do include bunkering, which may lead to minor differences in mutual comparisons.

²³ The figures stated here refer to the port of Amsterdam only, and not the entire complex which also includes the ports of Beverwijk, Velsen/IJmuiden and Zaanstad.

²⁴ Zeeland Seaports = ports of Flessingue and Terneuzen

and that of agribulk by 5.4%. Other dry bulk cargo, on the contrary, increased by 12.8%. Loading and unloading of containers (in volume) contracted by 2.4%, and ro-ro, automobiles and other mixed cargo declined by 8.7%. Overall, traffic in the port of Amsterdam decreased by 1.6%.

The port of **Bremen** recorded a 6.2% drop in its traffic. This decline occurred in container transportation and general cargo. By contrast, bulk transportation increased slightly thanks to liquid bulk. In the general cargo category, transshipment of vehicles, steel products and fruits declined while that of wood products was on the rise. In the dry bulk category, food products, coal and coke are significantly decreasing. As far as the origin and destination of cargo in container traffic in TEU is concerned, the top 5 partner countries experienced mixed developments; trade with the United States of America, China and Poland is declining while trade with Russia and Finland is steady.

Overall, 2015 was a good year for the port of **Le Havre**: its traffic increased by 2%. Although container loading and unloading decreased by 2.3%, the port of Le Havre remains the leading French container port. Processed volumes of roll-on/roll-off and other cargo also declined. As regards liquid bulk, however, volumes increased by 5.7%; crude oil rose by 7.2%, petroleum products by 3.3% and other liquid bulk by 5.5%. The rise in saturated gaseous hydrocarbons was more limited (0.7%). As regards dry bulk, the sharp increase in transhipped volumes of coal, cement and others widely compensated the contraction in volumes of sand, gravel and stones, thus enabling a 6.5% rise.

In 2015, the port of **Dunkirk** saw a slight contraction in its traffic (-1.1%). Several cargo segments are decreasing: hydrocarbons, other liquid bulks, coal, ore and small solid bulks. The drop in these last two categories originates in the damage from the storm that hit the port in 2014 and the maintenance closure of a blast furnace by ArcelorMittal during the last five months of the year. In contrast, volumes of steel products are increasing, as is roll-on/roll-off and container traffic. Cereals set a new record with more than 3 million tonnes of transhipped cargo.

Zeeland Seaports saw a sharp decrease in its traffic in the first semester of 2015. This decline could not entirely be compensated for in the second semester, and the annual figures for transhipped volumes dropped by 5.8%. According to Zeeland Seaports, this decrease is the consequence of the sluggish economic environment, low oil and petroleum products prices and maintenance works in the port's firms that had been planned for a long time. The port also noted that supply by inland waterways is replacing maritime supply. Loading and unloading of dry bulk, liquid bulk and roll-on/roll-off strongly contracted, while general cargo, containers included, increased.

TABLE 3 CARGO TRAFFIC BY SHIP IN THE PORTS OF DUISBURG, PARIS, LIÈGE AND BRUSSELS
(in thousands of tonnes, unless otherwise stated)

Port	2010	2011	2012	2013	2014	2015	2016 (p.m.)	Annual average change from 2010 to 2015 (in p.c.)	Change from 2014 to 2015 (in p.c.)
Duisburg ²⁵	49,200	50,400	38,200	47,200	51,100	51,900	n.	+ 1.1	+ 1.6
Paris	20,865	22,338	22,600	21,200	20,100	20,017	20,206	- 0.8	- 0.4
Liège ²⁶	19,095	19,455	16,477	14,947	15,001	14,605	15,461	-5.2	- 2.6
Brussels	4,385	4,855	4,606	4,324	4,439	4,364	4,480	- 0.1	- 1.7

Sources: Port of Duisburg, Port of Paris, Liège Port Authority and Brussels Port Authority.

The public ports of the Port of **Liège** recorded a waterway traffic of 14.6 million tonnes for 2015. In public ports, transshipment of non-metallic mineral products, secondary raw materials and wastes, petroleum products and other cargo/containers increased significantly. By contrast, coal, products of agriculture and chemical products are declining. According to the Port of Liège, these developments

²⁵ The traffic considered here is the total of the cargo handled in all Duisburg Ports, thus, totalling the Duisport Group and the private company ports.

²⁶ The traffic considered here is the total of the cargo handled on the public and the private quays. As from 2015 the traffic of the Liège Port Complex will only include the public quays. The private quays are gradually managed by the Autonomous Port of Liège.

originate from the particularly mild 2014/2015 winter and Biowanze's more local cereal supply, leading to an increased use of the road. Considering the origin and destination of cargo, after Belgium, the Netherlands is the first partner region for waterway trade.

With a 1.7% drop, waterway traffic in the Port of **Brussels** is getting closer to the 2013 figures. The absence of dredging work in 2015 partly explains this decline. Similarly, tonnages of construction sites land removal also contracted. However, 2015 is a record year for containerised traffic, with a 67% and a 56% rise respectively in transhipped volume and container traffic in TEU. Nevertheless, the leading category of cargo transported by waterway remains building materials. The 17% rise in petroleum products imports is also noteworthy.

In 2015, the ports of **Duisburg** recorded a 1.6% increase in its waterway traffic. The Port notes that the main drivers in 2015 were segments mineral oils, chemical products and combined transportation/container handling. Container handling via ship, train or lorry in the Duisport Group expanded by 6%. In light of the current economic situation and commercial trade between Europe and Asia, Duisport does not expect to see a significant rise in its traffic in 2016.

Ports de **Paris** saw its waterway traffic increase slightly in 2015, thus staying above the 20 million transhipped tonnes mark. The agri-food sector and the environment and steel products branch contributed to this positive development. The 19.6% increase in the volume of agri-food products can be explained partly by problems of road congestion, significant volumes of export and the opening of a new grain terminal. In the environment and recycling branch, landfill disposal grew by 15%. The building and public works category, however, declined by 3.9% due to the drop in public procurements for roadworks and in Île-de-France production of ready-mixed concrete. Finally, the number of containers handled in Île-de-France contracted in 2015.

1.3 Direct and indirect value added in the Belgian ports

The direct value added produced in the Belgian ports increased strongly in 2015. Except for the Liège port complex, all the ports took part in that growth, with the ports of Antwerp and Brussels recording the sharpest increases.

In the port of Antwerp, both the maritime cluster and the non-maritime cluster recorded growth of direct value added. The segments contributing the most to that growth were shipping companies, fuel production and chemicals.

The port of Ghent's increase in value added came from the non-maritime cluster, and more particularly the metalworking industry and chemicals segments.

In contrast, direct value added in the ports of Ostend and Zeebrugge increased in the maritime cluster and declined in the non-maritime cluster. In the port of Ostend, value added in the non-maritime cluster declined in the trade, industry and other logistic services segments. The maritime cluster benefited in particular from the increased value added in the port construction and dredging segment. In the port of Zeebrugge, value added declined in the land transport and industry segments, notably in the energy segment, whereas a number of maritime activities recorded an increase in value added.

In the Liège port complex, direct value added showed a marked fall in the non-maritime cluster; the segments with the biggest loss of value added were the energy, chemicals and construction segments. Conversely, the maritime cluster recorded a rise.

In the port of Brussels, direct value added increased in both the maritime cluster and the non-maritime cluster. The maritime cluster owes its growth to the port authority segment. In the non-maritime cluster, the segments trade, industry, land transport and other logistic services all expanded. However, the biggest rise in value added occurred in the other logistic services segment.

Analysis of direct value added per segment taking all the ports together reveals that the segments shipping companies, port construction and dredging, fuel production, chemicals and metalworking industry recorded the largest increases in value added (in absolute terms) while the energy segment saw the sharpest fall. The maritime and non-maritime clusters both expanded, but the land transport segment declined.

Indirect value added was 7.8% up, at € 15.1 billion. However, that figure needs to be taken as just a guide, because indirect value added is calculated on the basis of various estimates. The reader must

keep in mind that indirect effects must be cautiously handled, more as an indicator of the importance of the ports for the national and local economy than as an absolute value.

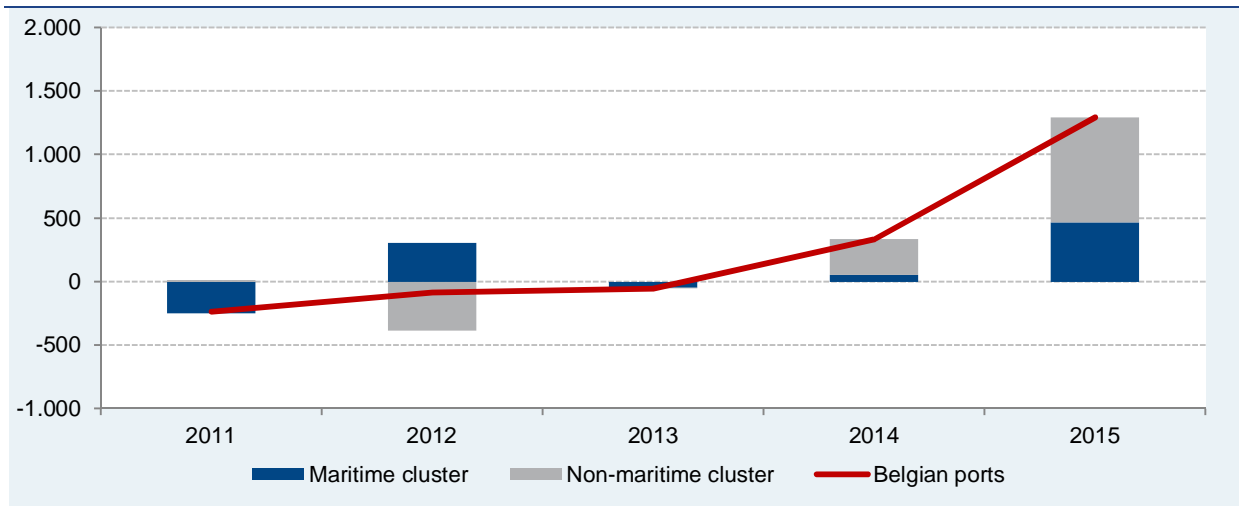
In 2015 direct value added of the Belgian ports accounted for 4.4% of Belgium's GDP (and 8.1% including indirect value added).

TABLE 4 VALUE ADDED IN THE BELGIAN PORTS
(in € million - current prices)

	2010	2011	2012	2013	2014	2015	Relative share in 2015 (in p.c.)	Change from 2014 to 2015 (in p.c.)	Annual average change from 2010 to 2015 (in p.c.)
1. DIRECT EFFECTS	16,742.6	16,505.8	16,422.2	16,367.8	16,701.5	18,019.5	100.0	+ 7.9	+ 1.5
Antwerp	10,068.7	9,758.6	10,053.6	9,801.4	10,007.7	10,946.0	60.7	+ 9.4	+ 1.7
Ghent	3,369.0	3,356.6	3,198.4	3,402.2	3,623.6	3,795.7	21.1	+ 4.8	+ 2.4
Ostend	498.0	472.0	488.6	489.4	500.4	508.3	2.8	+ 1.6	+ 0.4
Zeebrugge	959.5	979.1	947.6	982.8	949.5	975.7	5.4	+ 2.8	+ 0.3
Liège	1,310.5	1,413.4	1,185.6	1,201.5	1,132.4	1,021.0	5.7	- 9.8	- 4.9
Brussels	536.8	526.1	548.3	490.4	487.9	772.8	4.3	+ 58.4	+ 7.6
<i>Outside the ports (p.m.)</i> ²⁷ ...	114.4	135.3	130.8	125.9	134.2	135.7	-	+ 1.2	+ 3.5
2. INDIRECT EFFECTS	14,374.3	13,839.8	13,717.6	13,486.9	14,057.9	15,148.8	-	+ 7.8	+ 1.1
TOTAL VALUE ADDED	31,116.9	30,345.6	30,139.8	29,854.8	30,759.4	33,168.3	-	+ 7.8	+ 1.3

Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office, and the Belgian IOTs).
The data necessary to estimate the indirect effects are published by the NAI with a low frequency and after a certain time lag. The indirect effects for the period 2010-2015 are based on IOT 2010 and SUT 2010, 2011, 2012 and 2013. The calculated indirect effects are approximations and should be interpreted with caution.

CHART 2 CHANGE IN DIRECT VALUE ADDED
(in € million, current prices)



Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office).

²⁷ The firms in certain maritime branches may be selected from anywhere in the country, since their definition is sufficient in itself to link them to the port activity. These are branches directly connected with the activity of the sea ports. Their results are therefore allocated among the Flemish ports, using the formula for the allocation of value added per branch. For each year and for each branch, this formula is calculated on the basis of the ratio between the direct value added generated in a given Flemish port and the direct value added generated in all the Flemish maritime ports. The line "Outside the ports (p.m.)" included in the tables 4, 5 and 6 collates these data, which are also allocated respectively in the tables showing value added, employment and investment in chapters 2 to 5 on the line entitled "Allocation (p.m.)".

1.4 Direct and indirect employment in the Belgian ports

In contrast to direct value added, direct employment in the Belgian ports has declined. Unusually, all the ports are affected by that contraction; the Liège port complex felt the biggest impact with a 4% fall.

Direct employment in the maritime cluster and in the non-maritime cluster declined in the port of Antwerp. In the maritime cluster, there was an increase in full-time equivalents in the cargo handling segment and port construction and dredging and a reduction in the shipbuilding and repair and in the public sector segments. In the non-maritime cluster, the most noticeable job losses were in the land transport, chemicals and trade segments.

The port of Ghent recorded a sharp fall in direct employment in the maritime cluster and recruitment in the non-maritime cluster. The most dramatic job losses were in the cargo handling segment, although that concerned the transfer of staff to a car manufacturer based in the port. That also explains the strong growth in the car manufacturing segment. The trade segment also lost a large number of full-time equivalents whereas the shipbuilding and repair segment recorded strong growth.

Direct employment in the maritime and non-maritime clusters in the ports of Ostend and Zeebrugge has declined. The port of Ostend recorded substantial job losses in the metalworking industry segment, while the port of Zeebrugge saw the main job losses in the road transport and in the public sector segments. In contrast, the cargo handling segment recorded the highest level of recruitment in the port of Zeebrugge.

Direct employment in the Liège port complex was down slightly in the maritime cluster but fell sharply in the non-maritime cluster; the biggest job losses in terms of full-time equivalents occurred in the metalworking industry segment.

Direct employment in the port of Brussels declined in the maritime cluster but remained stable in the non-maritime cluster, thanks to recruitment in the trade and road transport segments, which offset the job losses in the industry and other logistic services segments.

Taking all the ports together and excluding the large-scale transfer of workers between two segments in the port of Ghent, the highest job losses occurred in the public sector, trade, chemicals, the metalworking industry and road transport segments. Few segments are expanding: port construction and dredging, fishing, fuel production, electronics, food industry and other logistic services.

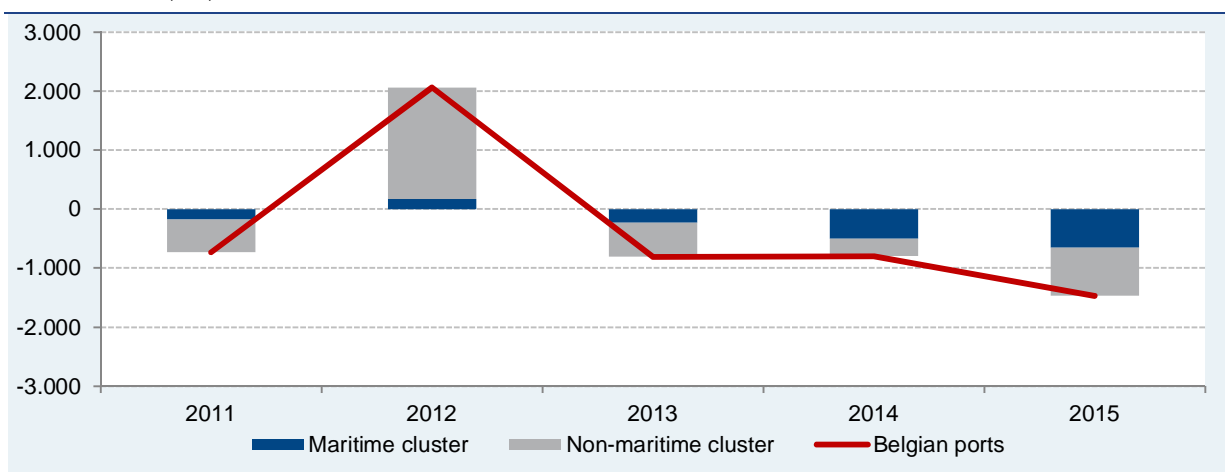
TABLE 5 EMPLOYMENT IN THE BELGIAN PORTS
(FTE)

	2010	2011	2012	2013	2014	2015	Relative share in 2015 (in p.c.)	Change from 2014 to 2015 (in p.c.)	Annual average change from 2010 to 2015 (in p.c.)
1. DIRECT EFFECTS	116,404	115,671	117,729	116,917	116,116	114,647	100.0	- 1.3	- 0.3
Antwerp	61,506	60,292	61,392	61,664	61,234	60,656	52.9	- 0.9	- 0.3
Ghent	25,822	26,510	27,120	27,415	28,111	27,809	24.3	- 1.1	+ 1.5
Ostend	4,906	4,735	5,118	5,059	5,063	4,993	4.4	- 1.4	+ 0.4
Zeebrugge	10,249	10,076	9,967	9,735	9,443	9,268	8.1	- 1.9	- 2.0
Liège	9,670	9,746	9,551	8,864	8,082	7,761	6.8	- 4.0	- 4.3
Brussels	4,250	4,313	4,580	4,181	4,182	4,159	3.6	- 0.5	- 0.4
<i>Outside the ports (p.m.)²⁸ ..</i>	2,230	2,173	2,135	2,063	2,003	2,005	-	+ 0.1	- 2.1
2. INDIRECT EFFECTS	136,445	139,229	141,796	138,181	137,972	137,747	-	- 0.2	+ 0.2
TOTAL EMPLOYMENT	252,849	254,900	259,524	255,098	254,087	252,394	-	- 0.7	- 0.0

Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office, and the Belgian IOTs).
The data necessary to estimate the indirect effects are published by the NAI with a low frequency and after a certain time lag. The indirect effects for the period 2010-2015 are based on IOT 2010 and SUT 2010, 2011, 2012 and 2013. Indirect employment includes employees and self-employed persons, while direct employment mainly relates to employees. The calculated indirect effects are approximations and should be interpreted with caution.

²⁸ These figures stand for the activity of the maritime enterprises located outside the port limits and are divided among the Flemish ports according to the breakdown of value added.

CHART 3 CHANGE IN DIRECT EMPLOYMENT (FTE)



Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office).

Indirect employment was slightly down. However, the reader must keep in mind that indirect effects must be cautiously handled, more as an indicator of the importance of the ports for the national and local economy than as an absolute value.

The share of port jobs in total Belgium employment came to 2.8% for direct employment and 6.2% for total employment in 2015.

1.5 Investment in the Belgian ports

Direct investment in the Belgian maritime ports declined by 8.1%. Three ports recorded a fall in their investment: Antwerp, Ghent and Ostend. For the port of Ostend, 2014 had been a rather exceptional year, but the drop in 2015 took investment in the port to its lowest level in six years. The port of Antwerp had also scored a record in 2014, but as the decline in 2015 was not as steep as in the port of Ostend, the amount invested in 2015 was still very high. The port of Ghent recorded its third consecutive year of reduction. In the other three ports - Zeebrugge, Liège and Brussels – investment increased. The port of Brussels had seen a sharp fall in investment in 2014; in 2015, investment showed a slight increase. After two years of decline, the Liège port complex reversed the trend with 6% growth. Conversely, the port of Zeebrugge recorded a second year's increase despite a difficult context in terms of traffic.

TABLE 6 INVESTMENT IN THE BELGIAN PORTS²⁹
(in € million - current prices)

	2010	2011	2012	2013	2014	2015	Relative share in 2015	Change from 2014 to 2015	Annual average change from 2010 to 2015
							(in p.c.)	(in p.c.)	(in p.c.)
Antwerp	2,523.8	2,405.1	2,324.0	2,362.6	3,300.6	3,005.1	76.0	- 9.0	+ 3.6
Ghent	501.8	444.9	459.5	420.9	406.8	365.3	9.2	- 10.2	- 6.2
Ostend	107.4	91.7	97.2	77.9	121.6	61.5	1.6	- 49.4	- 10.5
Zeebrugge	343.1	296.5	258.6	221.4	228.0	260.9	6.6	+ 14.4	- 5.3
Liège	186.5	199.1	241.1	213.7	196.3	208.0	5.3	+ 6.0	+ 2.2
Brussels	66.0	52.1	52.0	68.5	53.0	55.0	1.4	+ 3.8	- 3.6
Outside the ports (p.m.) ³⁰ ...	454.0	307.1	215.6	207.9	284.0	213.4	-	- 24.9	- 14.0
DIRECT INVESTMENT	3,728.6	3,489.3	3,432.4	3,365.1	4,306.2	3,955.7	-	- 8.1	+ 1.2

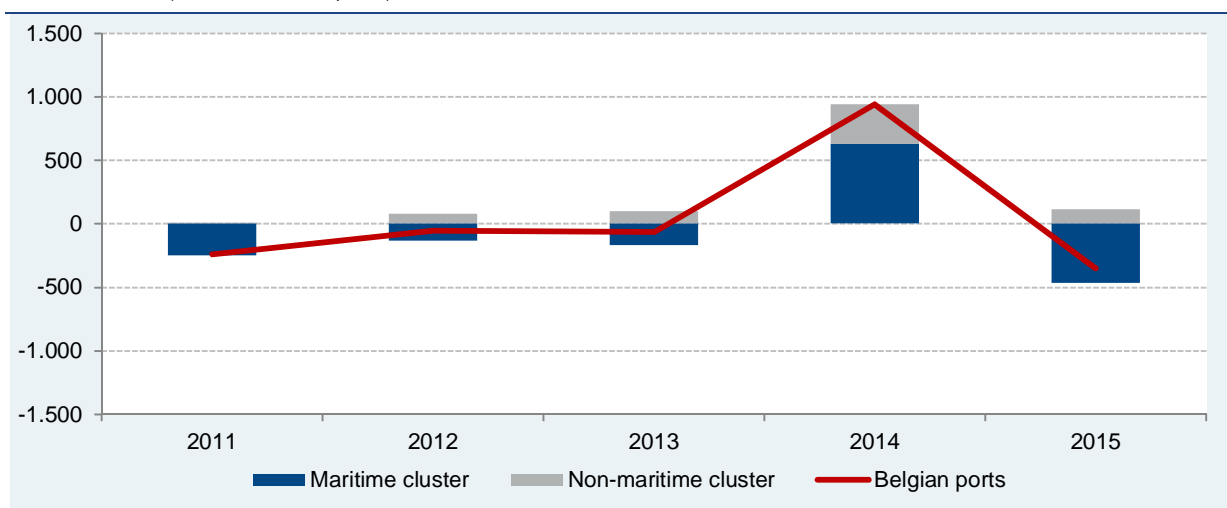
Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office and on surveys).

²⁹ Investment by the public authority Flemish Region is limited to the projects linked to a specific port.

³⁰ These figures stand for the activity of the maritime enterprises located outside the port limits and are divided among the Flemish ports according to the breakdown of value added.

CHART 4 CHANGE IN DIRECT INVESTMENT

(in €million, current prices)



Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office).

Looking at investment per segment, taking all ports together, the maritime cluster recorded a 22.3% fall; the biggest decline was in the shipping companies segment, but there was no significant increase in value in any of the other segments. In the non-maritime cluster, investment in the trade and land transport segments contracted. Conversely, it was steady in the other logistic services segment, and increased sharply in industry, thanks to the energy and fuel production segments. Overall, investment in the non-maritime cluster increased by 5.2%.

1.6 Demography of the Belgian ports

The table entitled 'Demography of the Belgian Ports' gives an overview of changes in the sample population used for the study for the period 2010-2015. The public sector is not taken into consideration in this table. As a reminder, besides Belgian commercial enterprises, the study also covers a limited number of legal entities such as non-profit organizations or branches of foreign firms. The two columns, entitled '2010' and '2015', with the heading "Population" indicate the number of legal persons (regardless of the legal form of the entity) included in the study for the years 2010 and 2015 respectively. The 'Migrate-out' column lists firms that left the population during the period 2011 - 2015. Obviously, it is the other way round for the 'Migrate-in' column. There are several explanations justifying the exclusion from the survey population from one year to the next: the company has moved, changed activity, merged with another firm already established in the port (in which case, only the surviving company continues to feature in the study). The three last columns of the table give the number of firms affected by corporate restructuring (absorption, merger, takeover or split), by a stoppage or failure. The firms included in the 'Migrate-in' column can either be newly established firms (after 2010) coming into the population studied or existing companies that have, for instance, started activities or taken over another enterprise in the port. The 'Missing account' column adds the number of firms that have not filed their annual accounts for the year 2015 and which, as far as we know, should not be excluded from the study³¹.

The number of companies in the study of the Belgian maritime ports increased over the period 2010 - 2015. However, that rise occurred in the non-maritime cluster, whereas in the maritime cluster the number of firms declined in almost all segments. Nevertheless, if missing accounts are excluded, the shipping agents and forwarders segment is the only one in maritime cluster which showed a very slight increase. While the population has declined in the maritime cluster, the number of firms in the trade segment increased by 41 units, and for the non-maritime cluster as a whole the figure was up by 259 units. Growth of the number of firms was highest in the other logistic services segment, with a figure of 170 units; head offices and business and other management consultancy activities accounted for most of the movements in firms.

³¹ See Coppens F., Verduyn F. (2009), *Analysis of business demography using markov chains: an application to Belgian data*, NBB, Working Paper No. 170 (Research series), Brussels.

TABLE 7 DEMOGRAPHY OF THE BELGIAN PORTS FOR THE PERIOD 2010 - 2015
(Number of firms)

Sectors	Population ³²					Death		
	2010	Migrate-In	Migrate-Out	Missing account	2015	Restructuring	Stoppage	Failure
MARITIME CLUSTER	1,760	444	513	23	1,668	48	198	132
Shipping agents and forwarders	696	209	207	9	689	24	66	48
Cargo handling	369	73	86	5	351	16	37	16
Shipping companies	351	99	115	5	330	3	56	33
Shipbuilding and repair	159	40	57	3	139	3	18	24
Port construction and dredging	15	0	1	0	14	0	1	0
Fishing and fish industry	128	15	34	0	109	2	17	10
Port trade	35	7	13	1	28	0	3	1
Port authority	7	1	0	0	8	0	0	0
Public sector	n,	n,	n,	n,	n,	n,	n,	n,
NON-MARITIME CLUSTER	2,008	1,157	874	24	2,267	117	213	186
TRADE	562	284	234	9	603	34	57	54
INDUSTRY	601	249	213	7	630	24	55	55
Energy	16	17	7	1	25	1	2	1
Fuel production	8	2	1	0	9	0	0	1
Chemicals	93	26	21	1	97	2	8	3
Car manufacturing	25	2	7	0	20	1	3	0
Electronics	15	4	6	0	13	0	1	2
Metalworking industry	122	42	33	3	128	2	10	10
Construction	183	105	88	1	199	8	18	28
Food industry	28	7	4	0	31	0	4	0
Other industries	111	44	46	1	108	10	9	10
LAND TRANSPORT	196	98	77	2	215	8	16	23
Road transport	194	93	76	2	209	8	16	23
Other land transport	2	5	1	0	6	0	0	0
OTHER LOGISTIC SERVICES..	649	526	350	6	819	51	85	54
TOTAL	3,768	1,601	1,387	47	3,935	165	411	318

Migrate-In = New in population after 2010.

Migrate-Out = Left the population in the period 2011-2015. This category includes the category 'Death', the enterprises which moved their activities outside the port area or whose NACE-BEL branch changed.

Death = legal situation at the closing date of this report

Restructuring = Absorption + Takeover + Merger + Split

Source: NBB (calculations based on the Crossroads Bank for Enterprises CBE).

Comparison of the “Death” table with that in the previous publication covering the period 2009 – 2014 shows no change in the number of restructurings but an increase in the number of terminations and bankruptcies. In some cases, the proportion of bankruptcies is high in relation to the number of firms at the start of the period plus the number of firms that joined the population during the period. In the shipbuilding and repairs segment, bankruptcies represent just under an eighth of the total number of firms. However, the segment recorded a slight decrease in the number of bankruptcies in 2015. The fishing segment recorded a substantial increase in the number of bankruptcies in 2015. In industry, the segments with the most bankruptcies in relation to the number of firms at the start of the period are construction, electronics and fuel production, though the firms in the first two segments are not numerous and may not be a representative sample of the population for these sectors of activity. In industry, there was little variation in the number of bankruptcies between 2014 and 2015. The total number of bankruptcies for firms in the study increased in the maritime cluster in 2015 and was down slightly in the non-maritime cluster. But if we look at the impact of these bankruptcies in terms of jobs, many of the firms that failed in 2015 employed few if any workers, so that job losses were limited.

³² The results of the public sector are not included in this table.

1.7 Breakdown of the variables by company size

Note that the distribution of the firms according to size depends on the format of the annual accounts filed by the firms. Thus, companies submitting their annual accounts to the Central Balance Sheet Office in the full format are considered to be large firms. The SME category covers companies submitting their annual accounts in an abbreviated format.

The proportion of large firms remained unchanged in 2015, making up 40.8% of all firms covered by the study. Value added produced grew more rapidly in large firms than in small ones. As a result, they generated more than 95% of the value added produced in all ports in 2015. Employment has contracted in large enterprises as well as in SMEs. All in all, 92.1% of all employees expressed in full-time equivalents work in a large enterprise. Between 2014 and 2015, investment dropped back in large firms but rose in SMEs. These developments should nevertheless be treated with caution as they are rather tenuous and consequently may change from one year to the next depending on the model of the annual accounts available for carrying out the analysis.

TABLE 8 BREAKDOWN OF FINDINGS IN THE BELGIAN PORTS IN 2015

Ports	Number of firms ³³		Direct value added (in € million)		Direct employment (FTE)		Direct investment (in € million)	
	Large firms	SMEs	Large firms	SMEs	Large firms	SMEs	Large firms	SMEs
Antwerp	887	1,038	10,330.5	379.3	54,198	3,338	2,710.0	106.4
Ghent	299	313	3,577.7	185.1	25,309	2,124	320.6	28.6
Ostend	68	134	406.0	35.8	3,703	416	35.2	8.9
Zeebrugge	174	231	765.4	90.9	6,468	966	200.1	16.7
Liège	94	93	989.2	31.8	7,242	519	200.3	7.7
Brussels	113	264	704.2	68.5	3,184	973	38.4	16.6
Outside the ports	23	332	74.9	60.8	1,583	422	183.1	30.3
TOTAL	1,658	2,405	16,848.0	852.3	101,687	8,758	3,687.6	215.2

Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office and on surveys).

1.8 Social balance sheet in the Belgian ports³⁴

The social balance sheet presents a coherent set of data on various aspects of employment in firms: composition of the workforce, staff rotation, type of employment contracts, level of education, working time, staff costs and training efforts. The results presented below concerning direct employment in the six Belgian ports are not exhaustive. The figures are based on a constant sample³⁵ relating to the period 2013 - 2015. The national data is calculated from a constant sample of filed annual accounts with the Central Balance Sheet Office. The findings per individual port are also based on a constant sample.

1.8.1 Working time and staff costs

For a detailed analysis of the social balance sheet data, see the article by P. Heuse in the December 2017 Economic Review of the National Bank of Belgium.

After a year of sharp decline, the contraction of the average number of employees in the constant sample of firms active in the Belgian ports slowed down in 2015. It was the Liège port complex that

³³ For each port, this is the number of firms located in the port zone. A firm may in fact be recorded in more than one port. The sample for the year 2015 comprises 1.554 large firms and 2.381 small and medium-sized firms, totalling 3.935 firms. The results of the public sector are not included in this table.

³⁴ The national data mentioned were taken from Heuse P., *The social balance sheet 2014*, NBB, Economic Review, June 2016. The comparisons are merely an indication, since only firms filing their social balance sheet for a period of 12 months ending on 31 December were taken into account in that study. Moreover, NACE-BEL 78 branches (employment-related activities), 84 (public administration and defence; compulsory social security) and 85 (education) are excluded in that study.

³⁵ The constant sample was determined on the basis of the firms which filed full-format accounts throughout the period 2013 - 2015, and the financial year must comprise a period of twelve months. The employer's organizations (e.g. Cepa), with NACE-BEL 78200, are included in the constant sample. The constant sample comprises 998 firms and 92,014 FTEs, or 25.3 % of the firms considered for this study in 2015 and 80.3 % of the direct employment calculated in this study.

registered the biggest drop. The number of hours effectively worked by each full-time equivalent also dropped back but two ports posted an increase: Antwerp and Zeebrugge. Staff costs were up slightly in 2015.

TABLE 9 HOURS WORKED AND ASSOCIATED COSTS OF INTERNAL HUMAN RESOURCES
(reduced population: constant population)
(percentage change compared with the previous year, unless otherwise stated)

	2013	2014	2015
Change in the average number of employees on the staff register (p.c.)		-3.7	-1.0
Change in the number of hours actually worked (p.c.)		-3.8	-0.4
Change in staff costs (p.c.)		-0.8	+0.2
Average number of hours worked per annum per full-time equivalent (<i>hours</i>)	1,509	1,506	1,514
Average annual staff costs per full-time equivalent (<i>euros</i>)	78,064	80,366	81,365
Average staff costs per hour worked (<i>euros</i>)	52	53	54

Source: NBB (full presentation accounts only).

1.8.2 Composition of the workforce

The proportion of blue-collar workers is still just as stable, as is the proportion of women working for companies based in the ports. The percentage of full-timers has hardly changed at all. The proportion of people with primary education qualifications working in enterprises in the ports continues to fall; by contrast, that for secondary education qualifications and university graduates is growing³⁶.

TABLE 10 INTERNAL WORKFORCE AT THE END OF THE FINANCIAL YEAR
(reduced population: constant population)
(share as a percentage of the total)

	2013	2014	2015
By professional category			
<i>White-collar</i>	44	44	44
<i>Blue-collar</i>	52	52	52
<i>Other staff</i>	4	4	4
By sex			
<i>Males</i>	83	83	83
<i>Females</i>	17	17	17
By working time			
<i>Full-time</i>	90.0	89.1	89.0
<i>Part-time</i>	10.0	10.9	11.0
By educational level			
<i>Males</i>			
<i>Primary education (p.c.)</i>	19.2	18.9	17.0
<i>Secondary education (p.c.)</i>	55.0	55.1	56.6
<i>Higher non-university education (p.c.)</i>	16.7	16.8	16.9
<i>University education (p.c.)</i>	9.0	9.2	9.5
<i>Females</i>			
<i>Primary education (p.c.)</i>	7.2	7.5	6.8
<i>Secondary education (p.c.)</i>	44.5	43.7	43.9
<i>Higher non-university education (p.c.)</i>	32.3	32.4	32.2
<i>University education (p.c.)</i>	16.0	16.4	17.1

Source: NBB (full presentation accounts only).

1.8.3 External staff

After having expanded in 2013 and 2014, the share of external staff in total employment in the companies analysed fell in 2015. Enterprises established in the port of Antwerp are largely behind the

³⁶ The breakdown by educational level depends on the accuracy and consistency of this part of the filed social balance sheets.

reversal of this trend. In fact, the proportion of hours worked by external staff is continuing to grow in the other ports. It should be noted that costs have fallen more rapidly than the reduction in the number of hours worked.

TABLE 11 HIRED TEMPORARY STAFF AND STAFF PLACED AT THE ENTERPRISE'S DISPOSAL
(reduced population: constant population)
(percentage change compared with the previous year, unless otherwise stated)

	2013	2014	2015
Share of external staff in total employment (on the basis of the number of hours actually worked) (share as a percentage of the total)	14.1	15.9	14.9
Change in the number of hours actually worked		+ 9.9	- 6.3
Change in costs		+ 8.6	- 8.2

Source: NBB (full presentation accounts only).

1.8.4 Staff turnover

After falling in 2014, the net number of workers hired during the year under review increased in 2015. But an increase was not recorded in all the ports, with only the ports of Ghent and Ostend registering a positive balance, and all the others posting a negative result. The recruitment deficit was highest in the ports of Antwerp and Liège – the same ports that have the highest proportion of retirements. After the peak recorded in 2014, the percentage of early retirements dropped in 2015 giving a result that is below the percentage for 2013.

TABLE 12 STAFF TURNOVER
(reduced population: constant population)
(share as a percentage of the total, unless otherwise stated)

	2013	2014	2015
Net number of staff hired during the year (FTE)	+ 613	- 978	+ 52
Staff leaving, by reason for termination of contract			
<i>Retirement</i>	8.7	7.5	8.1
<i>Unemployment with company allowance</i>	4.2	9.0	3.7
<i>Dismissal</i>	18.7	16.6	15.8
<i>Other reason</i> ³⁷	68.4	66.9	72.2

Source: NBB (full presentation accounts only).

1.8.5 Training³⁸

The training participation rate fell back slightly in 2015. Not all the ports have followed the same trend as this rate was actually up in the ports of Antwerp and Ostend. The number of hours of training followed per person is on the rise, as are hourly costs of training. These hourly costs vary substantially from one port to another. They are highest in the port of Brussels but several other ports have reported a significant increase in hourly costs for female staff. However, the percentage figure for the number of hours worked devoted to training has not changed and the cost of training as a share of total staff costs has only gone up very marginally.

³⁷ Spontaneous departures, death in service, expiry of the period of fixed-term contracts, provided that they are not immediately followed by a new contract, and the completion of the work for which the contract was concluded.

³⁸ Here, training is meant in the formal sense, i.e. courses in premises reserved for that purpose, within the firm or outside. For example, on-the-job training, mentoring and self-training study are outside the scope of this study.

TABLE 13 EFFORTS DEVOTED TO FORMAL TRAINING
(reduced population: constant population)
(share as a percentage of the total, unless otherwise stated)

	2013	2014	2015
P.c. of firms reporting training on the social balance sheet	62.8	62.9	62.1
Participation rate	56.8	58.4	57.9
<i>Males</i>	57.8	59.3	58.9
<i>Females</i>	51.9	54.4	53.5
Number of hours' training per person (<i>hours</i>)	33.4	29.2	30.2
<i>Males (hours)</i>	34.2	29.9	30.9
<i>Females (hours)</i>	29.2	25.8	26.5
Training costs per hour (euros)	70.6	70.9	72.7
<i>Males (euros)</i>	69.6	70.8	71.2
<i>Females (euros)</i>	77.3	71.5	81.8
P.c. of the number of hours worked devoted to training	1.3	1.2	1.2
Training costs as a percentage of total staff costs.....	1.8	1.5	1.6

Source: NBB (full presentation accounts only).

1.9 Financial ratios in the Belgian ports

The ratios presented below show the net return on equity after tax, liquidity in the broad sense (the current ratio), and solvency³⁹. The first ratio concerns the firms' ability to generate profits, and to give shareholders an idea of the firm's return after tax. The second ratio shows the firm's ability to mobilise in due time the cash resources that it needs in order to meet its short-term liabilities. Finally, the third ratio gives an idea of the firm's ability to honour all its financial commitments in the short and long term. This section gives information on the movement in the ratios for the six Belgian ports together⁴⁰.

The study of the financial ratios is based on a constant sample⁴¹ composed for the years 2013 to 2015. Consequently, the firms studied in the financial section of this report are not the same as those in the constant sample of the previous report, which may explain some discrepancies between the figures in the two publications. To permit comparison with the national data, i.e. all Belgian non-financial firms companies, the same calculation method – namely globalisation – was used.

In 2014, net return on equity after tax in companies operating in the Belgian ports had risen sharply and consequently overtaken the national average. Unfortunately, in 2015, the ratio dropped back to the average level for non-financial corporations in Belgium. The most spectacular fall was in Liège, which is the only port to have a negative ratio. All the other ports are above the average for the country, even Antwerp which still saw its ratio fall in 2015.

Despite higher liquidity in the broad sense in the Belgian ports, it is still running below the national average. The ports of Zeebrugge and Brussels are the only ones above the national corporate average. If liquidity is analysed by branch of activity, for all ports taken together, industry is the only branch to fall below the average and other logistic services is the only branch of activity to see a drop in its liquidity ratio in 2015. But as this sector's ratio was particularly high in 2014, it is still above average.

³⁹ See Annex 2 for the definition of the ratios.

⁴⁰ Note that readers wishing to compare the financial ratios of a firm with those in the sector where it operates can find that information in the company file published by the Central Balance Sheet Office.

⁴¹ The constant sample composed for the study of the ratios includes all firms which filed their annual accounts in 2013, 2014 and 2015 and whose annual accounts items meet the conditions for the calculation of these ratios. For example, for the purpose of calculating profitability, the financial year must comprise 12 months and the equity must be strictly positive. NACE-BEL branch 70100 (head office activities) is excluded as these companies may distort the results because of their often very high shareholders' equity figures. This constant sample covers 2,493 firms, € 15,713.0 million of value added and 94,476 FTEs, or 63.2 % of the firms considered for the Belgian ports in 2015, 87.2 % of the direct value added and 82.4 % of the direct employment examined here.

The solvency ratio of companies operating in the Belgian ports has fallen for the second year in a row while the ratio for non-financial corporations as a whole has risen. Nevertheless, most of the ports have a higher ratio than this average, with the exception of the port of Antwerp. This can of course be explained by the fact that this port has a strong industrial presence and the solvency ratio of this branch is quite low. The ratios for the other sectors of activity are fairly close between them and also well above the average for non-financial corporations.

TABLE 14 FINANCIAL RATIOS IN THE BELGIAN PORTS FROM 2013 TO 2015
(reduced population: constant population)

Ports	Return on equity after tax (in p.c.)			Liquidity in the broad sense			Solvency (in p.c.)		
	2013	2014	2015	2013	2014	2015	2013	2014	2015
Antwerp	4.1	9.5	6.5	1.04	0.89	1.05	38.5	36.4	34.5
Ghent	5.2	5.8	12.7	1.34	1.27	1.22	43.4	41.5	40.1
Ostend	8.9	1.8	7.4	1.00	0.95	1.00	50.9	45.6	47.8
Zeebrugge	6.7	5.0	8.0	1.03	1.05	1.47	52.7	54.3	51.5
Liège	-2.4	5.4	-2.5	0.82	0.70	0.71	42.2	42.7	41.9
Brussels	6.2	13.1	6.3	1.29	1.25	1.48	56.0	53.9	60.8
Belgian ports	3.5	8.2	5.9	1.07	0.94	1.06	40.7	39.1	37.3
Non-financial corporations ⁴²	5.3	5.5	5.9	1.25	1.24	1.27	43.1	43.4	43.9

Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office).

1.10 Financial health in the Belgian ports

The financial health indicator is designed as a weighted combination of variables, created by means of a model constructed in the same way as a failure prediction model. The model takes the form of a logistic regression discriminating between failing and non-failing companies. The definition of failure is based on a legal criterion, namely that a company is considered to have failed if it has faced bankruptcy or judicial administration in the past.

The indicator summarizes each company's situation in a single value which takes account simultaneously of the solvency, liquidity and profitability dimensions. Those dimensions are complementary in the establishment of a financial diagnosis, as a high debt level, for example, may be offset by a plentiful cash flow, and vice versa. The indicator also takes account of the companies' age and size, particularly through interaction variables.

The indicator constitutes a strictly financial assessment of the companies at a given moment. That assessment is based on data from the annual accounts, and therefore disregards any other fundamental elements, such as development prospects, competition, management calibre or shareholders' willingness to provide financial support. In that respect, it must be regarded as one of the factors enabling an overall appraisal of a firm's situation.

Classes 1, 2, 3 and 4 are associated with below-average failure rates, and therefore correspond to a favourable financial situation. However, the rates are not zero, which means that these classes are not totally risk free. Conversely, classes 6, 7, 8, 9 and 10 are associated with above-average failure rates, and therefore correspond to a situation of vulnerability. That is why belonging to one of these classes can be interpreted as a warning sign, which becomes stronger as we move from class 6 to class 10. Finally, class 5 corresponds to an average failure rate and is therefore neutral in terms of interpretation.

The financial health classes are used in the enterprise files compiled by the Central Balance Sheet Office⁴³. The sample of firms for which the financial health index was calculated is naturally much smaller than in the national study. Consequently, the results are more volatile. The result for a particular

⁴² For additional information see Rubbrecht I., Vivet D., *Results and financial situation of firms in 2015*, NBB, Economic review, December 2016, Brussels.

⁴³ See Vivet D. (2011), *Development of a financial health indicator based on companies' annual accounts*, NBB, Working Paper No. 213 (Document series), Brussels.

firm can therefore be obtained from the company file⁴⁴ and compared to the distribution of firms by financial health class in the ports, or in Belgium as a whole.

For several years, tables 15 and 16 have shown that a majority of firms established in the Belgian maritime ports fall within financial health classes 1 to 4, which means they have a below-average risk of bankruptcy. Disregarding a slight weakening in 2010 and 2012, this proportion of firms has remained relatively stable since 2011. It nevertheless recorded a growth of 3 percentage points in 2015. Over the same year, classes 6 to 10, which carry an above-average risk of bankruptcy, contracted by 2.1 percentage points. The progress among classes 1 to 4 is even more marked if one analyses the percentages calculated on the basis of staff employed by these firms. Although the table shows a slight year-on-year increase since 2012, this was in fact a lot higher in 2015 with an increase of 7.2 percentage points. These classes covered 88.6% of all workers in 2015.

TABLE 15 FINANCIAL HEALTH IN THE BELGIAN PORTS - IN % OF THE NUMBER OF COMPANIES
(reduced population)

	2010	2011	2012	2013	2014	2015
Class 1	8.3	7.9	8.4	8.4	8.5	10.3
Class 2	18.5	19.4	18.7	19.2	19.0	19.8
Class 3	18.5	18.8	18.6	19.5	18.3	20.3
Class 4	18.9	20.0	19.2	19.1	20.3	18.7
Class 5	18.0	17.6	18.3	17.3	17.9	17.0
Class 6	11.9	11.3	11.9	10.8	11.1	10.1
Class 7	3.4	2.6	2.7	3.3	2.8	2.3
Class 8	1.9	1.7	1.6	1.5	1.5	1.2
Class 9	0.4	0.5	0.4	0.5	0.4	0.2
Class 10	0.2	0.3	0.2	0.3	0.1	0.1
TOTAL.....	100.0	100.0	100.0	100.0	100.0	100.0
Firms above the average failure rate ...	17,7	16,3	16,9	16,4	15,9	13,8

Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office).

TABLE 16 FINANCIAL HEALTH IN THE BELGIAN PORTS - IN % OF WORKERS ENTERED IN THE STAFF REGISTER⁴⁵
(reduced population)

	2010	2011	2012	2013	2014	2015
Class 1	10.0	8.8	7.7	8.0	7.6	9.7
Class 2	23.0	18.7	15.2	22.5	21.6	19.7
Class 3	33.2	35.2	39.2	33.0	34.8	36.8
Class 4	20.9	18.5	16.6	16.7	17.4	22.4
Class 5	8.7	15.6	16.9	16.4	15.6	8.5
Class 6	3.3	2.5	3.7	2.6	2.1	2.0
Class 7	0.5	0.4	0.4	0.5	0.5	0.6
Class 8	0.3	0.2	0.3	0.3	0.2	0.3
Class 9	0.0	0.1	0.0	0.1	0.1	0.0
Class 10	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL.....	100.0	100.0	100.0	100.0	100.0	100.0
Modelled above-average failure rate ...	4,2	3,3	4,5	3,5	3,0	2,9

Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office).

1.11 Relative importance of the components of value added

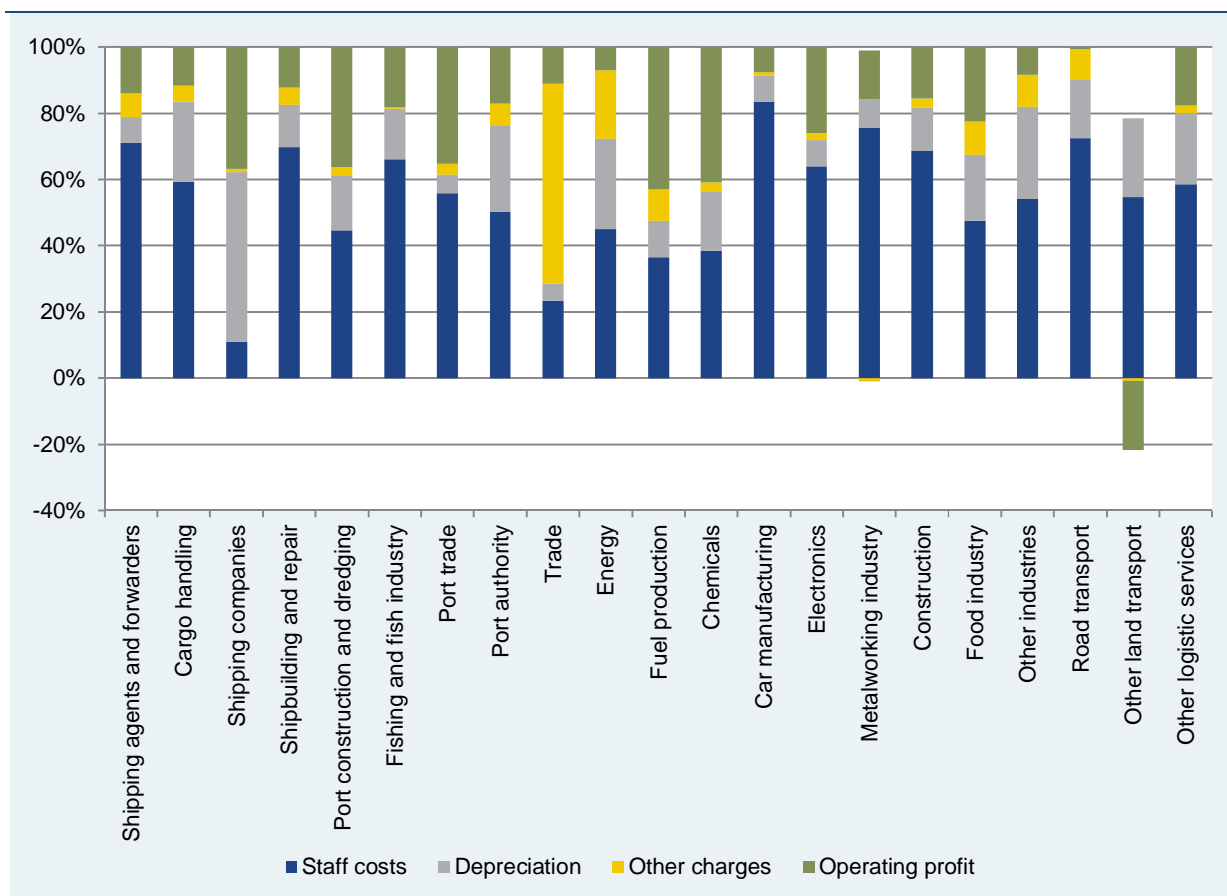
This table shows the breakdown of value added as calculated for this study among the main components: staff costs, depreciation, other charges and operating profit⁴⁶. These components are

⁴⁴ The company file compares the financial position of an enterprise with the financial position of the activity sector the enterprise belongs to. For more information, see introduction.

⁴⁵ Full-time equivalents (item 9087)

estimated on the basis of data extracted from annual accounts filed with the Central Balance Sheet Office. This table presents the results for the year 2015 of enterprises located in the port zones albeit with some exceptions; the proportions are liable to vary significantly from one year to the next, notably with regard to operating profit. The result is more of a one-year snapshot that cannot be considered representative of the composition of the segments in the long term.

CHART 5 RELATIVE IMPORTANCE OF THE COMPONENTS OF VALUE ADDED IN 2015
(reduced population)



Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office).
 Other charges = amounts written down + provisions + other operating charges minus restructuring costs.
 Operating profit = operating profit minus subsidies from public authorities.
 The results of the public sector are not included in this chart.

From the figures in the study on Belgium's ports, it can be seen that the shipping companies, fuel production and chemicals segments enjoyed a strong increase in value added in 2015 although only the fuel production segment posted higher employment numbers. The reason behind these increases should not be systematically sought in output growth. That is reflected in the relationship between the different components of value added. The growth of value added may also have come from an improvement in market conditions and therefore from operating margins or even from the development of operating equipment bringing productivity gains but extra depreciation costs too.

The authors of the article on Results and Financial Situation of Firms in 2015⁴⁷ point up a 3.9% increase in value added for all annual accounts analysed for the year 2015, with a 1.9% rise in staff costs and a 2.0% increase in operating charges in general. By contrast, the operating result was up by 13%. This tends to confirm that any growth in value added does not necessarily lead to a proportional increase in the different components of value added, including staff costs. Another point raised in the article is that the big raw-material-intensive manufacturing branches have benefited from the drop in commodity prices and posted the most significant profit rises. The branches of activity cited are chemicals,

⁴⁶ The costs of temporary staff are included in services and other goods and are therefore not part of value added but belong to intermediate consumption.

⁴⁷ *Results and Financial Situation of Firms in 2015*, Rubbrecht I., Vivet D., NBB, Economic Review, December 2016, Brussels.

metalworking, petrochemicals and refining. This observation is corroborated by the trend in value added of companies operating in the port zones. Moreover, chart 5 shows that the share of operating profits is high in fuel production and chemicals activities.

Observing the relative importance of staff costs and depreciation in value added figures, it comes as no surprise to find depreciation is highest in proportional terms in the shipping companies segment. But it is in car manufacturing that staff costs are the highest in proportional terms. The other charges are particularly evident in the trade sector, something that can be attributed to companies active in petroleum product trade and the excise duties levied on them. In the energy industry, the sharp increase in other operating charges at one of the sector's heavyweights explains the big share of this item in value added. Looking at the top 3 segments in terms of the number of jobs and studying the composition of value added, the relative weight of staff costs is quite variable: 59% for cargo handling, 38% for chemicals and 77% for the metalworking industry. There is therefore no direct link between the two.

2 PORT OF ANTWERP

2.1 Port developments⁴⁸

In 2015 the total volume handled by the port of Antwerp came to 208.4 million tonnes, setting a new record. Traffic was up by 4.7% compared to 2014. Since growth in the Hamburg-Le Havre range⁴⁹ averaged 1.0%, the port of Antwerp increased its market share (from 17.1 to 17.7%).

The port's overall growth in 2015 is due to the strong expansion of traffic in liquid bulk (+6.1%), containers (+4.6%), and dry bulk (+2.1%). In liquid bulk, there was growth in the transshipment of both petroleum products (+4.0%) - which account for the largest share of liquid bulk - and chemicals (+18.3%). Crude oil was down by 3.4%. Dry bulk was up slightly (+2.1%), after several years of decline. RoRo and conventional general cargo increased in 2015.

The port of Antwerp achieved a record volume of traffic for the fourth year running: 214.2 million tonnes in 2016 (+2.8%). As in 2015, the emphasis was on liquid bulk (+3.8%) and containers (+4.1%). In the case of liquid bulk, petroleum products recorded the strongest growth (+7.1%) followed by chemicals (with a more modest rise). Deliveries of crude oil were well down against 2015 (-17.4%). Dow Sadara and Vopak Eurotank together invested tens of millions of euros in new storage capacity. At the Vopak Eurotank terminal in Antwerp, 20 new storage tanks were installed with a total capacity of 40,500 m³ for storing 11 liquid chemicals. SEA-invest is planning to build a new tank terminal at the Delwaide dock, representing an investment of € 250 million. SEA-Tank Terminal, a SEA-invest group subsidiary, is to build additional tank capacity for Total at the Hansa dock, on the concession that it took over from the I.M.T. container terminal. The planned investment amounts to € 100 million. Zenith Energy of Houston is planning investments on the right bank of the port of Antwerp. The company handles the storage and distribution of petroleum, refinery products, liquefied natural gas and petrochemicals. Once the concession is granted, Zenith can build 500,000 m³ in the initial phase, perhaps expanding to 1,000,000 m³ subsequently.

Container traffic grew by 4.1% in 2016 to a total of 117.9 million tonnes (10.04 million TEU, a new record). Although the container sector is in a constant state of flux, the most notable development in 2016 was the systematic transfer of all MSC services from the Delwaide dock on the right bank of the Scheldt to the Deurganck dock on the left bank of the Scheldt. From 18 April, all transatlantic services were switched to the MSC PSA European Terminal on the Deurganck dock, followed by four other services from 16 May. The transfer was completed in December 2016.

Other forms of transshipment declined in 2016: dry bulk (-8.3%), RoRo (-1.8%) and conventional general cargo (-2.0%).

The traffic mix at the port of Antwerp has changed considerably over the past 10 years. In 2006 containers accounted for 48% of the total volume. By 2016 that share had risen to 55%. Over those 10 years, containerisation reduced the share of conventional general cargo from 11% to less than 5%. The share of dry bulk declined from 16% to 6%. In contrast, liquid bulk increased strongly from 22% to 32% of total traffic in 2016.

In 2016 the total number of maritime vessels entering the port increased to 14,473. In the preceding years the number of vessels had declined steadily owing to the expanding scale of the container business, but since 2015 the number of vessels entering the port has grown again as a result of the increase in total traffic. The largest container ship ever to enter the port of Antwerp is the MSC Zoë, with a capacity of 19,224 TEU. That was in July 2015.

Every year, the port of Antwerp sees a considerable number of investment projects, both large and small, aimed at maintaining, modernising or expanding the existing infrastructure. For 2016, the most notable investments are the Kieldrecht lock, officially inaugurated in June 2016, and the new Port House

⁴⁸ Source: *Jean-Pierre Merckx, Flemish Port Commission.*

⁴⁹ For the purposes of this study, the range comprises the ports of Hamburg, Bremen, Amsterdam, Rotterdam, the Zeeland Seaports complex (port of Terneuzen and Flessingue), Antwerp, Ghent, Zeebrugge, Ostend, Dunkirk and Le Havre.

which has accommodated the staff of the Antwerp Port Authority since September 2016. 2016 was also an important year for the further development of the Saeftinghe zone. The launch of the “complex projects” procedure will permit selection of the right project, from among a range of options, for further expanding the container capacity of the port of Antwerp.

2.2 Value added

Direct value added in the port of Antwerp enjoyed exceptional growth of 9.4% in 2015, with both the maritime cluster and the non-maritime cluster posting a rise in their value added. In the maritime cluster, only the shipbuilding and repair, fishing segments and the public sector have shown a decline. The shipping agents and forwarders segment was up by 6.3% on the value added front, while employment remained stable: firms from this segment showed quite divergent developments, so while some boosted their port activities, their turnover and returned to profit, others started recording losses. The cargo handling segment benefited from the growth of traffic in the port. Quite remarkably, this segment continued its uninterrupted growth. The shipping companies had mixed fortunes depending on different sectors of the shipping business: the value added generated in companies specialised in dry bulk declined, while that of firms operating in the tanker market, notably for crude oil transport, rose sharply. After a decline in 2014, the port construction and dredging segment was up again: one of the main stakeholders in the segment not only continued to implement previously signed contracts, but also started a new one at the beginning of the year.

In the non-maritime cluster, value added remained stable in trade but contracted by 2% in land transport. By contrast, value added in industry and other logistic services showed a big increase. A handful of chemicals industry companies went through a major reorganisation in 2015 but one of the biggest ones in the sector registered much higher value added largely due to better results owing to the falling cost of raw materials. In the fuel production segment, the higher results from one big refinery company also pushed value added up. The other industries segment benefited from the sound health of firms in the cleaning, waste processing and recycling sector. The increase in value added in other logistic services was also reflected in a rise in employment.

The strong rise in indirect value added is largely attributable to the dredging and shipping companies.

Direct value added represented 4.5% of the GDP of the Flemish region and 2.7% of the Belgian GDP. Total value added accounted for 5% of the Belgian GDP.

2.3 Employment

While value added enjoyed a big increase, direct employment was down in the port of Antwerp's maritime cluster and its non-maritime cluster. But the latter suffered a bigger contraction. Only a few of the segments saw an increase in employment, namely cargo handling, port construction and dredging, fuel production, other industries and other logistic services.

In the maritime cluster, employment in the shipbuilding and repair segment continues to fall; there has been absolutely no increase in the last five years. In 2015, there were more companies in this segment that cut back their staff than those that took on new staff and if they did, new hirings were often a lot lower than job losses. The public sector segment has also sharply trimmed back its staff in services related to the port of Antwerp. The stoppage of activities by a bulk carrier shipping company is the main reason behind the drop in employment in shipping companies.

In the trade sector, one of the main events of the year was the departure of Chiquita Fresh after having operated from this port for thirty three years. The energy segment once again posted a drop in employment. Nothing but job losses were observed over the entire period analysed. Several companies in the chemicals industry segment, including Lanxess, saw their staff numbers contract in 2015. The segment was also hit by the closure of an establishment specialised in petrochemicals. The results for the other industries segment are likely to be revised and therefore should be treated with caution. The construction segment has suffered mainly from the closure of a company in the port zone. The reduction in employment in road transport has been shared across several firms and is not linked to any particular event.

In contrast to the sharp rise in indirect value added, indirect employment slightly decreased, reflecting the downward trend in direct employment. The shipping companies and the petroleum products industry recorded a drop of indirect employment.

Direct employment represented 2.6% of the employment in the Flemish region and 1.5% of Belgian employment. Total employment accounted for 3.5% of Belgian employment.

2.4 Investment

Direct investment in the port of Antwerp was down by 22% in the maritime cluster in 2015. However, the 2014 investment figure had been particularly high for that cluster. The segments investing the most heavily in 2015 were still cargo handling and shipping companies. In cargo handling, companies specialising in the storage of chemicals and petroleum products invested in their installations. Firms active in the handling of containers also invested heavily. For example, the MSC PSA European Terminal fitted out its new terminal on the Deurganck dock. In order to facilitate its growth within the Antwerp port, the company has invested huge amounts in the expansion and the upgrading of the terminals. In the port authority segment, notable investment projects include the Deurganck dock lock, but also the new Port House and the container terminals. Although investment declined following an exceptional year, shipping companies were still very active. One company invested in the leasing of a post-panamax, and another in the construction of two bulk-carriers. Euronav bought and sold ships and ultimately enlarged its fleet during the year. Exmar Shipping invested in midsize LPG vessels. Another company in the same group launched the construction of a new floating storage and regasification unit and a second floating liquefied natural gas facility. In the port construction and dredging segment, the DEME group embarked on some new investment projects.

Investment was up by 6.9% in the non-maritime cluster in 2015. That rise was due mainly to industry. Except for chemicals, where investment had soared in 2014, and electronics, which is a very small segment for the port of Antwerp, all industrial segments increased their investment. In the energy segment, substantial investment went into the installation of wind turbines on the port site. A major electricity producer also invested in the maintenance and modernisation of its installations. In fuel production, two major groups invested large sums in their refinery located in the port. In the chemicals segment, the biggest player continued its investment policy. Total Olefins Antwerp once again stepped up the amounts invested, particularly in the renewal of the Apollo project, but also in the development of new projects. Investment in the food industry segment was well up, thanks to the installation of a new milk powder factory. In other logistic services, the increase was due partly to a trailer rental and leasing company, which increased its investment in 2015.

Overall, investment in the port of Antwerp, taking the maritime and non-maritime clusters together, was down by 9%.

CHART 6 CHANGE IN DIRECT VALUE ADDED

(in € million, current prices)

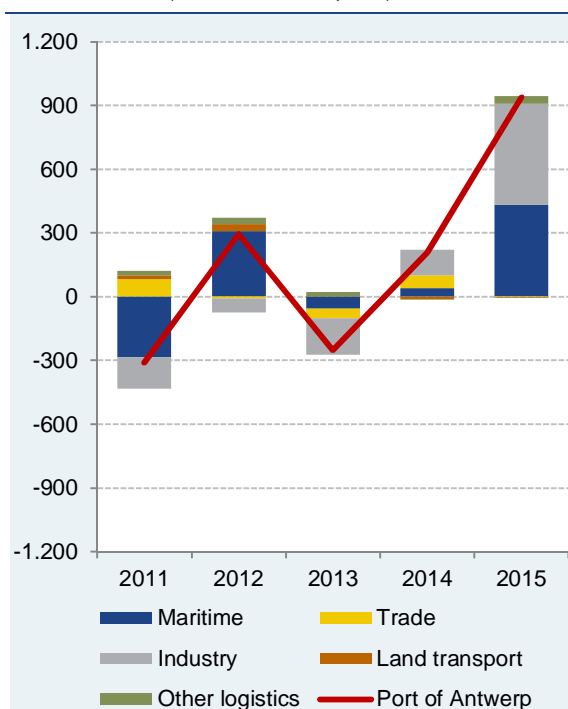
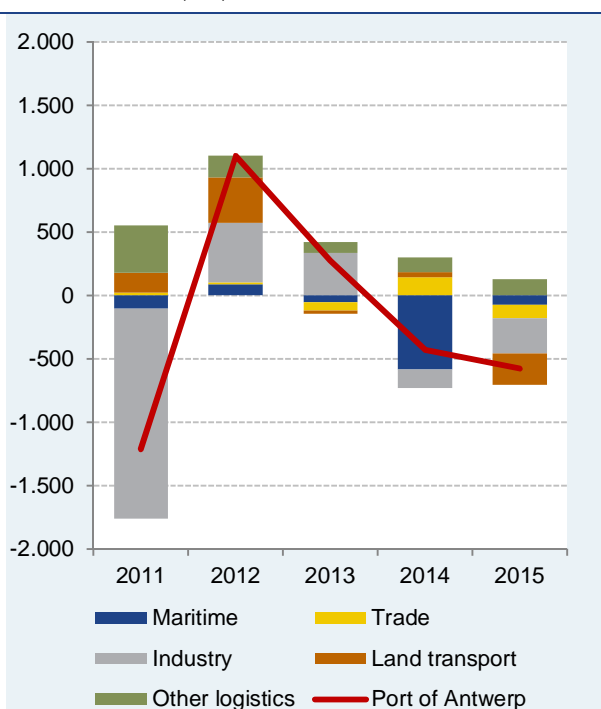


CHART 7 CHANGE IN DIRECT EMPLOYMENT

(FTE)



Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office).

TABLE 17 VALUE ADDED AT THE PORT OF ANTWERP FROM 2010 TO 2015
(in € million - current prices)

Sectors	2010	2011	2012	2013	2014	2015	Share in 2015 (in p.c.)	Change from 2014 to 2015 (in p.c.)	Annual average change from 2010 to 2015 (in p.c.)
DIRECT EFFECTS	10,068.7	9,758.6	10,053.6	9,801.4	10,007.7	10,946.0	100.0	+ 9.4	+ 1.7
MARITIME CLUSTER	3,313.2	3,029.0	3,337.0	3,281.8	3,321.6	3,755.3	34.3	+ 13.1	+ 2.5
Shipping agents and forwarders	569.4	597.3	591.3	631.6	593.1	630.6	5.8	+ 6.3	+ 2.1
Cargo handling	1,286.7	1,373.2	1,481.6	1,563.4	1,605.0	1,662.1	15.2	+ 3.6	+ 5.3
Shipping companies	857.4	487.3	555.0	366.9	435.2	717.3	6.6	+ 64.8	- 3.5
Shipbuilding and repair	49.5	45.2	37.3	33.1	37.1	27.0	0.2	- 27.2	- 11.4
Port construction and dredging	161.9	131.4	247.1	272.9	236.2	308.3	2.8	+ 30.5	+ 13.7
Fishing and fish industry	1.8	1.3	1.3	1.4	2.2	1.7	0.0	- 22.6	- 1.4
Port trade	17.1	18.3	18.7	17.7	11.0	12.2	0.1	+ 11.0	- 6.5
Port authority	228.8	233.6	256.0	243.5	251.0	252.4	2.3	+ 0.6	+ 2.0
Public sector	140.6	141.6	148.7	151.3	150.8	143.6	1.3	- 4.7	+ 0.4
Allocation (p.m.)	85.0	103.5	97.1	92.1	94.9	92.6	-	- 2.4	+ 1.7
NON-MARITIME CLUSTER	6,755.6	6,729.6	6,716.6	6,519.6	6,686.2	7,190.7	65.7	+ 7.5	+ 1.3
TRADE	829.5	910.8	903.6	855.1	917.0	916.8	8.4	- 0.0	+ 2.0
INDUSTRY	5,235.6	5,088.5	5,020.3	4,850.7	4,970.6	5,444.1	49.7	+ 9.5	+ 0.8
Energy	453.8	530.1	418.9	393.6	321.8	282.0	2.6	- 12.4	- 9.1
Fuel production	984.1	898.5	970.8	806.2	824.9	1,055.6	9.6	+ 28.0	+ 1.4
Chemicals	2,658.7	3,009.6	2,946.1	2,944.2	3,113.2	3,399.9	31.1	+ 9.2	+ 5.0
Car manufacturing	607.4	86.5	103.4	93.3	86.5	77.1	0.7	- 10.9	- 33.8
Electronics	9.5	8.6	10.6	8.3	10.1	10.1	0.1	+ 0.4	+ 1.3
Metalworking industry	214.8	227.6	252.4	248.7	250.3	247.7	2.3	- 1.0	+ 2.9
Construction	117.7	133.4	136.7	154.0	160.0	159.2	1.5	- 0.5	+ 6.2
Food industry	59.3	63.7	47.5	63.1	59.3	61.6	0.6	+ 3.7	+ 0.8
Other industries	130.3	130.6	133.7	139.4	144.5	151.0	1.4	+ 4.5	+ 3.0
LAND TRANSPORT	257.2	275.4	307.0	308.3	296.6	290.7	2.7	- 2.0	+ 2.5
Road transport	129.8	140.1	151.7	141.3	141.6	142.9	1.3	+ 0.9	+ 1.9
Other land transport	127.3	135.2	155.3	166.9	155.0	147.9	1.4	- 4.6	+ 3.0
OTHER LOGISTIC SERVICES	433.4	454.9	485.8	505.5	502.1	539.1	4.9	+ 7.4	+ 4.5
INDIRECT EFFECTS	9,722.8	9,098.8	9,182.9	8,436.6	8,823.0	9,746.5	-	+ 10.5	+ 0.0
MARITIME CLUSTER	3,762.3	2,901.4	3,246.7	2,773.1	2,923.1	3,529.8	-	+ 20.8	- 1.3
NON-MARITIME CLUSTER	5,960.5	6,197.3	5,936.2	5,663.5	5,899.9	6,216.7	-	+ 5.4	+ 0.8
TOTAL VALUE ADDED	19,791.5	18,857.3	19,236.5	18,238.1	18,830.8	20,692.6	-	+ 9.9	+ 0.9

Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office, and the Belgian IOTs).

The data necessary to estimate the indirect effects are published by the NAI with a low frequency and after a certain time lag. The indirect effects for the period 2010-2015 are based on IOT 2010 and SUT 2010, 2011, 2012 and 2013. The calculated indirect effects are approximations and should be interpreted with caution.

TABLE 18 VALUE ADDED TOP 10 AT THE PORT OF ANTWERP IN 2015

Ranking	Company name	Sector
1	B.A.S.F. ANTWERPEN	Chemicals
2	EXXONMOBIL PETROLEUM & CHEMICAL	Fuel production
3	KUWAIT PETROLEUM (BELGIUM)	Trade
4	EURONAV	Shipping companies
5	ANTWERP PORT AUTHORITY	Port authority
6	DREDGING INTERNATIONAL	Port construction and dredging
7	TOTAL RAFFINADERIJ ANTWERPEN	Fuel production
8	COVESTRO	Chemicals
9	EVONIK DEGUSSA ANTWERPEN	Chemicals
10	ELECTRABEL	Energy

Source: NBB. The estimates for the multi-regional firms are based on surveys, annual reports and allocation formulas based on regional statistics. The top ten tables are based on information from annual accounts, surveys, annual reports and allocation formulas based on regional statistics. No individual figures are published as accurate data could not be obtained for all companies.

TABLE 19 EMPLOYMENT AT THE PORT OF ANTWERP FROM 2010 TO 2015
(FTE)

Sectors	2010	2011	2012	2013	2014	2015	Share in 2015 (in p.c.)	Change from 2014 to 2015 (in p.c.)	Annual average change from 2010 to 2015 (in p.c.)
DIRECT EFFECTS	61,506	60,292	61,392	61,664	61,234	60,656	100.0	- 0.9	- 0.3
MARITIME CLUSTER	28,154	28,050	28,138	28,086	27,504	27,431	45.2	- 0.3	- 0.5
Shipping agents and forwarders	6,661	6,810	6,947	6,868	6,701	6,698	11.0	- 0.0	+ 0.1
Cargo handling	14,842	14,713	14,548	14,649	14,672	14,823	24.4	+ 1.0	- 0.0
Shipping companies	1,152	1,176	973	919	927	879	1.4	- 5.2	- 5.3
Shipbuilding and repair	756	627	542	433	397	303	0.5	- 23.5	- 16.7
Port construction and dredging	1,030	1,094	1,475	1,513	1,260	1,311	2.2	+ 4.1	+ 4.9
Fishing and fish industry	23	20	19	18	22	18	0.0	- 16.8	- 5.2
Port trade	155	111	115	115	92	89	0.1	- 3.3	- 10.4
Port authority	1,711	1,692	1,698	1,703	1,607	1,564	2.6	- 2.6	- 1.8
Public sector	1,824	1,808	1,822	1,867	1,828	1,745	2.9	- 4.5	- 0.9
Allocation (p.m.)	1,651	1,622	1,533	1,493	1,440	1,375	-	- 4.5	- 3.6
NON-MARITIME CLUSTER	33,353	32,242	33,253	33,578	33,731	33,225	54.8	- 1.5	- 0.1
TRADE	2,293	2,315	2,328	2,260	2,403	2,294	3.8	- 4.6	+ 0.0
INDUSTRY	23,563	21,903	22,368	22,702	22,554	22,279	36.7	- 1.2	- 1.1
Energy	1,075	1,042	1,030	993	946	920	1.5	- 2.7	- 3.1
Fuel production	2,652	2,687	2,678	2,607	2,626	2,684	4.4	+ 2.2	+ 0.2
Chemicals	10,671	10,792	10,889	10,982	10,936	10,737	17.7	- 1.8	+ 0.1
Car manufacturing	3,025	1,005	1,080	1,020	1,004	941	1.6	- 6.2	- 20.8
Electronics	158	157	133	127	133	133	0.2	+ 0.0	- 3.5
Metalworking industry	3,296	3,416	3,656	3,687	3,579	3,554	5.9	- 0.7	+ 1.5
Construction	1,198	1,260	1,354	1,703	1,723	1,663	2.7	- 3.5	+ 6.8
Food industry	381	393	416	403	407	405	0.7	- 0.4	+ 1.3
Other industries	1,106	1,151	1,133	1,179	1,200	1,240	2.0	+ 3.4	+ 2.3
LAND TRANSPORT	4,065	4,222	4,582	4,555	4,593	4,347	7.2	- 5.4	+ 1.4
Road transport	1,962	2,048	2,148	2,049	2,154	2,029	3.3	- 5.8	+ 0.7
Other land transport	2,103	2,174	2,435	2,506	2,439	2,317	3.8	- 5.0	+ 2.0
OTHER LOGISTIC SERVICES ...	3,432	3,803	3,974	4,061	4,180	4,306	7.1	+ 3.0	+ 4.6
INDIRECT EFFECTS	81,828	84,628	84,906	82,735	82,927	81,692	-	- 1.5	- 0.0
MARITIME CLUSTER	32,548	32,407	32,160	30,408	30,785	31,088	-	+ 1.0	- 0.9
NON-MARITIME CLUSTER	49,280	52,221	52,746	52,327	52,142	50,604	-	- 2.9	+ 0.5
TOTAL EMPLOYMENT	143,334	144,920	146,298	144,399	144,161	142,348	-	- 1.3	- 0.1

Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office, and the Belgian IOTs).

The data necessary to estimate the indirect effects are published by the NAI with a low frequency and after a certain time lag. The indirect effects for the period 2010-2015 are based on IOT 2010 and SUT 2010, 2011, 2012 and 2013. Indirect employment includes employees and self-employed persons, while direct employment mainly relates to employees. The calculated indirect effects are approximations and should be interpreted with caution.

TABLE 20 EMPLOYMENT TOP 10 AT THE PORT OF ANTWERP IN 2015

Ranking	Company name	Sector
1	B.A.S.F. ANTWERPEN	Chemicals
2	BNRC GROUP	Other land transport
3	PUBLIC SECTOR	Public sector
4	ANTWERP PORT AUTHORITY	Port authority
5	LOGISPORT	Cargo handling
6	TOTAL RAFFINADERIJ ANTWERPEN	Fuel production
7	EXXONMOBIL PETROLEUM & CHEMICAL	Fuel production
8	EVONIK DEGUSSA ANTWERPEN	Chemicals
9	CNH INDUSTRIAL BELGIUM	Car manufacturing
10	DREDGING INTERNATIONAL	Port construction and dredging

Source: NBB. The estimates for the multi-regional firms are based on surveys, annual reports and allocation formulas based on regional statistics. The top ten tables are based on information from annual accounts, surveys, annual reports and allocation formulas based on regional statistics. No individual figures are published as accurate data could not be obtained for all companies.

TABLE 21 INVESTMENT AT THE PORT OF ANTWERP FROM 2010 TO 2015
(in € million - current prices)

Sectors	2010	2011	2012	2013	2014	2015	Share in 2015 (in p.c.)	Change from 2014 to 2015 (in p.c.)	Annual average change from 2010 to 2015 (in p.c.)
MARITIME CLUSTER	1,629.6	1,496.2	1,374.3	1,221.1	1,811.9	1,413.9	47.0	- 22.0	- 2.8
Shipping agents and forwarders	49.9	60.9	48.2	29.5	32.7	33.9	1.1	+ 3.5	- 7.5
Cargo handling	594.7	677.0	606.2	488.3	565.9	574.4	19.1	+ 1.5	- 0.7
Shipping companies	633.0	327.0	382.1	427.0	1,002.3	581.8	19.4	- 41.9	- 1.7
Shipbuilding and repair	12.3	6.4	4.4	5.9	2.2	1.8	0.1	- 17.5	- 31.7
Port construction and dredging	268.4	342.7	93.2	14.8	27.4	70.6	2.3	+ 157.9	- 23.4
Fishing and fish industry	1.1	0.2	0.3	0.2	0.3	0.2	0.0	- 32.8	- 31.8
Port trade	0.5	0.6	0.6	0.5	0.4	0.3	0.0	- 35.7	- 9.8
Port authority	33.9	45.0	194.8	196.3	154.2	131.0	4.4	- 15.0	+ 31.0
Public sector	35.7	36.6	44.5	58.5	26.5	19.8	0.7	- 25.2	- 11.1
Allocation (p.m.).....	394.9	246.9	166.5	164.2	222.4	168.8	-	- 24.1	- 15.6
NON-MARITIME CLUSTER	894.3	908.9	949.7	1,141.5	1,488.7	1,591.2	53.0	+ 6.9	+ 12.2
TRADE	48.9	54.3	54.1	54.1	56.1	53.5	1.8	- 4.6	+ 1.8
INDUSTRY	744.9	750.4	772.7	970.7	1,316.6	1,423.4	47.4	+ 8.1	+ 13.8
Energy	93.6	74.6	76.0	74.5	108.4	160.0	5.3	+ 47.6	+ 11.3
Fuel production	161.8	90.3	127.3	239.0	417.8	525.3	17.5	+ 25.7	+ 26.6
Chemicals	374.0	471.8	489.9	576.9	737.3	660.2	22.0	- 10.5	+ 12.0
Car manufacturing	5.7	8.7	7.9	8.5	0.6	5.7	0.2	+ 811.7	- 0.0
Electronics	3.7	2.0	0.9	1.0	0.0	0.0	0.0	- 100.0	- 100.0
Metalworking industry	12.9	10.7	13.7	15.6	11.4	12.7	0.4	+ 11.2	- 0.3
Construction	8.3	12.4	13.1	11.4	8.7	15.1	0.5	+ 73.4	+ 12.7
Food industry	20.1	17.6	15.3	15.7	12.9	21.3	0.7	+ 65.6	+ 1.1
Other industries	64.8	62.1	28.5	28.1	19.6	23.1	0.8	+ 18.1	- 18.6
LAND TRANSPORT	38.7	28.4	41.7	38.1	46.1	29.3	1.0	- 36.5	- 5.5
Road transport	23.4	18.4	27.1	22.4	33.9	24.5	0.8	- 27.9	+ 0.9
Other land transport.....	15.4	10.0	14.6	15.7	12.2	4.8	0.2	- 60.5	- 20.7
OTHER LOGISTIC SERVICES	61.8	75.9	81.2	78.7	69.8	85.0	2.8	+ 21.7	+ 6.6
DIRECT INVESTMENT	2,523.8	2,405.1	2,324.0	2,362.6	3,300.6	3,005.1	100.0	- 9.0	+ 3.6

Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office and on surveys).

TABLE 22 INVESTMENT TOP 10 AT THE PORT OF ANTWERP IN 2015

Ranking	Company name	Sector
1	EURONAV	Shipping companies
2	TOTAL RAFFINADERIJ ANTWERPEN	Fuel production
3	EXXONMOBIL PETROLEUM & CHEMICAL	Fuel production
4	TOTAL OLEFINS ANTWERP	Chemicals
5	B.A.S.F. ANTWERPEN	Chemicals
6	MSC PSA EUROPEAN TERMINAL	Cargo handling
7	ELECTRABEL	Energy
8	EXMAR SHIPPING	Shipping companies
9	DEURGANCKDOKSLUIS	Port authority
10	SCHELDE CONTAINER TERMINAL NOORD	Cargo handling

Source: NBB. The estimates for the multi-regional firms are based on surveys, annual reports and allocation formulas based on regional statistics. The top ten tables are based on information from annual accounts, surveys, annual reports and allocation formulas based on regional statistics. No individual figures are published as accurate data could not be obtained for all companies.

3 PORT OF GHENT

3.1 Port developments⁵⁰

In 2015 the total maritime traffic handled by the port of Ghent was slightly higher than in 2014, at 26.4 million tonnes. The port of Ghent is the principal Flemish port for dry bulk, with 16.7 million tonnes. This mainly concerns deliveries of iron ore, coal, cereals, construction materials and crude minerals. In 2015 the volume of dry bulk transshipment equalled the 2014 figure. The volume of liquid bulk and conventional general cargo increased sharply (+ 9.1 and +12.3%), but RoRo and container traffic declined. The RoRo traffic includes Volvo cars transported between Ghent and Göteborg.

The total traffic handled by the port of Ghent increased strongly in 2016: from 26.4 million tonnes in 2015 to 29.1 million tonnes (+10.3%). Dry bulk, accounting for almost 61% of the total volume, was up by 5.8% at 17.7 million tonnes. Liquid bulk recorded strong growth (+45.9%), while RoRo and conventional general cargo also saw an increase (+1.7 and +3.8%). Container traffic declined again, but the volume is very small in any case.

In 2016, 2,891 maritime vessels entered the port of Ghent, slightly more than in 2015. The size of the average vessel was 11,716 GT.

In 2016 the principal infrastructure project for the port of Ghent was still the new lock in Terneuzen on Dutch territory. This new lock will enable the port of Ghent to receive larger vessels. The procedure leading up to construction of the lock has gathered pace since 2009. In 2016 another important milestone was reached when the Netherlands signed the planning decision. It is the final step in the planning procedure that the Netherlands must follow for the construction of the New Terneuzen Lock. The project is scheduled for completion in 2022.

3.2 Value added

The port of Ghent's value added rose by 4.8%. This rise came from the non-maritime cluster, as value added in the maritime cluster was down by 6.8%. In this cluster, the main declines were in the cargo handling and shipping companies segments. In the former, it was the takeover of part of DSV Solutions' business by Volvo Cars and thus the related transfer of value added to the car manufacturing segment that was behind the reduction. In the shipping companies segment, the decline in value added is essentially due to a company switching from the port of Ghent to another port and the losses posted by another firm.

In the non-maritime cluster, value added in trade, industry and land transport was up, but it contracted in other logistic services. The increase in the trade sector was notably due to a petroleum product trading firm posting higher excise duties⁵¹. The four biggest companies in the chemicals segment posted a rise in their value added, largely as a result of the expansion of their activities. The growth of the car manufacturing segment offsets the decline in cargo handling with the transfer of DSV Solutions' business. The spurt in value added recorded in the metalworking industry comes from the segment's main company returning to profit and expanding its business by taking over another company from the group. Value added in other industries was hit badly by the drop in turnover and profits recorded by the biggest company in the segment. The road transport segment benefited from better results posted by several of its heavyweight companies.

The rise in indirect value added, up by 3.9%, is due largely to developments in the metalworking industry and trade.

Direct value added represented 1.6% of the GDP of the Flemish region and 0.9% of the Belgian GDP. Total value added accounted for 1.9% of the Belgian GDP.

⁵⁰ Source: *Jean-Pierre Merckx, Flemish Port Commission*.

⁵¹ Excise duties are included in the turnover figures but are not deducted when value added is calculated. Excise duty rates thus affect the value added figures.

3.3 Employment

Direct employment in the port of Ghent has dropped sharply in the maritime cluster but has risen slightly in the non-maritime cluster to give a total decline of 1.1%. Despite a rise in employment in several companies active in cargo handling, the overall figure for this segment has dropped as a result of Volvo Cars' takeover of part of DSV Solutions' business. This goes a long way towards explaining the growth of employment in the motor vehicle manufacturing industry, although another big employer in the car manufacturing segment also expanded its workforce. The increase recorded in shipbuilding and repair is largely attributable to developments outside the port, with the impact shared across the different maritime segments. The sharp decline in the shipping companies segment is due to the departure of a company from the port of Ghent.

In the non-maritime cluster, trade suffered mainly on account of the reorganisation of a big metalworking group which resulted in the loss of a large firm in the trade sector. Like in the other ports, the share of rail transport in the other land transport segment fell back in the port of Ghent. The decline in employment in road transport concerns a good many firms, so it is pointless to isolate individual movements. In other logistic services, one firm's move and relocation outside the port prevented the segment from posting stronger growth of employment.

Indirect employment in the port of Ghent increased (+2.5%). Indirect employment has been expanding since 2009 at this port. The car manufacturing is the main branch generating extra jobs in the supplier sectors.

Direct employment represented 1.2% of the employment in the Flemish region and 0.7% of Belgian employment. Total employment accounted for 1.6% of Belgian employment.

3.4 Investment

In the port of Ghent, direct investment in the maritime cluster was up by 8.9%. Half of the number of segments contributed to that rise. Conversely, in the non-maritime cluster, every segment reduced its investment, although the reduction in the industry segment was limited.

Following a year of particularly significant investment, a leading Japanese logistic centre cut it down. The amounts invested by various other commercial firms of the segment didn't manage to offset this fall. That resulted in a 28.4% decline for the trade segment. Similarly, in the chemicals segment two companies had invested particularly heavily in 2014, and they reverted to more normal levels in 2015. In car manufacturing, companies continued to invest, notably in their respective plants and production tools such as robots, and in improving the logistics. Construction recorded higher investment thanks to a large number of companies. In the food industry, a company specialising in the production of vegetable fats renovated and expanded its storage tank farm. Overall, investment in industry recorded a slight fall of 0.9%. In road transport, 2013 and 2014 had seen heavy investment by two different companies; no company took their place in 2015. Overall, investment in the non-maritime cluster was down by 13.2%.

CHART 8 CHANGE IN DIRECT VALUE ADDED
(in € million, current prices)

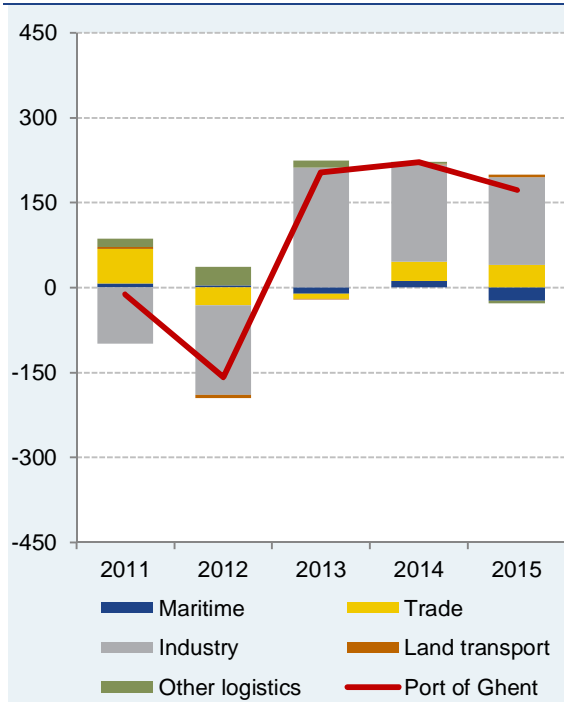
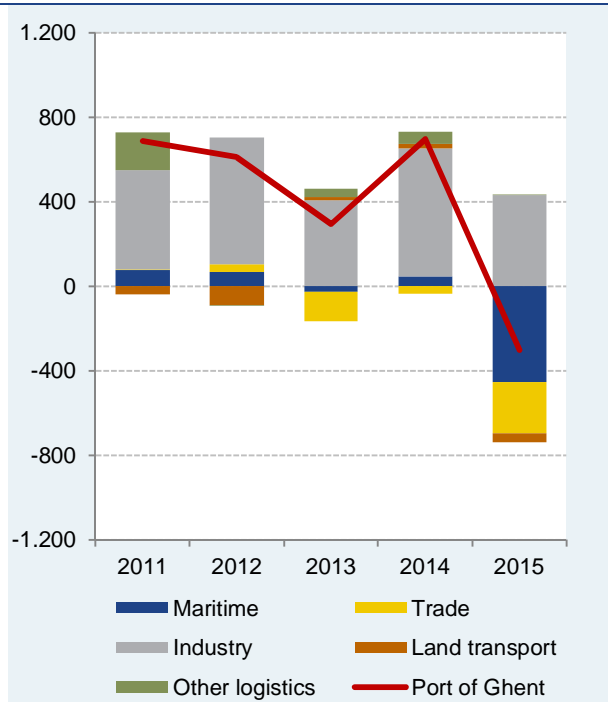


CHART 9 CHANGE IN DIRECT EMPLOYMENT
(FTE)



Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office).

TABLE 23 VALUE ADDED AT THE PORT OF GHENT FROM 2010 TO 2015
(in € million - current prices)

Sectors	2010	2011	2012	2013	2014	2015	Share in 2015 (in p.c.)	Change from 2014 to 2015 (in p.c.)	Annual average change from 2010 to 2015 (in p.c.)
DIRECT EFFECTS	3,369.0	3,356.6	3,198.4	3,402.2	3,623.6	3,795.7	100.0	+ 4.8	+ 2.4
MARITIME CLUSTER	332.4	339.4	343.3	332.5	344.2	320.7	8.5	- 6.8	- 0.7
Shipping agents and forwarders	33.6	28.6	30.1	31.0	33.0	34.8	0.9	+ 5.7	+ 0.7
Cargo handling	240.9	255.3	253.3	244.6	246.8	222.9	5.9	- 9.7	- 1.5
Shipping companies	8.5	7.2	9.1	7.5	12.3	6.7	0.2	- 45.4	- 4.6
Shipbuilding and repair	4.3	4.0	5.8	4.7	5.9	10.9	0.3	+ 84.5	+ 20.3
Port construction and dredging	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Fishing and fish industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Port trade	0.1	0.1	0.2	0.2	0.3	0.4	0.0	+ 13.7	+ 24.4
Port authority	25.5	24.7	23.6	23.4	24.8	23.9	0.6	- 3.6	- 1.3
Public sector	19.4	19.4	21.3	21.1	21.1	21.2	0.6	+ 0.4	+ 1.7
Allocation (p.m.)	5.5	4.7	7.9	6.5	9.6	11.7	-	+ 21.8	+ 16.3
NON-MARITIME CLUSTER	3,036.7	3,017.2	2,855.1	3,069.7	3,279.4	3,474.9	91.5	+ 6.0	+ 2.7
TRADE	751.2	812.1	780.9	771.6	805.9	845.9	22.3	+ 5.0	+ 2.4
INDUSTRY	2,129.5	2,030.5	1,872.6	2,084.2	2,255.2	2,410.5	63.5	+ 6.9	+ 2.5
Energy	68.3	75.0	66.5	53.8	36.2	38.1	1.0	+ 5.2	- 11.0
Fuel production	43.3	30.5	50.5	54.7	41.4	38.6	1.0	- 6.9	- 2.3
Chemicals	365.7	399.5	319.1	323.7	384.5	426.1	11.2	+ 10.8	+ 3.1
Car manufacturing	678.9	653.7	649.6	735.4	713.5	720.4	19.0	+ 1.0	+ 1.2
Electronics	31.6	31.2	27.4	28.5	34.1	35.5	0.9	+ 4.2	+ 2.4
Metalworking industry	636.3	500.4	406.3	529.3	641.0	773.8	20.4	+ 20.7	+ 4.0
Construction	102.1	98.1	107.3	104.3	122.0	118.1	3.1	- 3.2	+ 2.9
Food industry	88.5	82.6	74.3	91.9	104.4	112.4	3.0	+ 7.7	+ 4.9
Other industries	114.8	159.5	171.5	162.5	178.1	147.7	3.9	- 17.1	+ 5.2
LAND TRANSPORT	77.4	81.0	75.4	75.0	76.5	80.6	2.1	+ 5.3	+ 0.8
Road transport	59.6	66.6	62.6	63.4	66.4	70.9	1.9	+ 6.7	+ 3.5
Other land transport.....	17.9	14.4	12.7	11.6	10.1	9.7	0.3	- 4.1	- 11.5
OTHER LOGISTIC SERVICES	78.5	93.6	126.3	138.9	141.8	138.0	3.6	- 2.7	+ 11.9
INDIRECT EFFECTS	3,470.0	3,382.8	3,291.4	3,668.6	3,966.1	4,121.8	-	+ 3.9	+ 3.5
MARITIME CLUSTER	240.2	244.6	250.4	246.0	262.1	252.9	-	- 3.5	+ 1.0
NON-MARITIME CLUSTER	3,229.9	3,138.2	3,041.0	3,422.6	3,704.0	3,868.9	-	+ 4.5	+ 3.7
TOTAL VALUE ADDED	6,839.1	6,739.4	6,489.9	7,070.8	7,589.6	7,917.5	-	+ 4.3	+ 3.0

Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office, and the Belgian IOTs).
The data necessary to estimate the indirect effects are published by the NAI with a low frequency and after a certain time lag. The indirect effects for the period 2010-2015 are based on IOT 2010 and SUT 2010, 2011, 2012 and 2013. The calculated indirect effects are approximations and should be interpreted with caution.

TABLE 24 VALUE ADDED TOP 10 AT THE PORT OF GHENT IN 2015

Ranking	Company name	Sector
1	ARCELORMITTAL BELGIUM	Metalworking industry
2	TOTAL BELGIUM	Trade
3	VOLVO CAR BELGIUM	Car manufacturing
4	VOLVO GROUP BELGIUM	Car manufacturing
5	BELGIAN SHELL	Trade
6	TAMINCO	Chemicals
7	STORA ENSO LANGERBRUGGE	Other industries
8	CRI CATALYST COMPANY BELGIUM	Chemicals
9	HONDA MOTOR EUROPE LOGISTICS	Trade
10	OLEON	Chemicals

Source: NBB. The estimates for the multi-regional firms are based on surveys, annual reports and allocation formulas based on regional statistics. The top ten tables are based on information from annual accounts, surveys, annual reports and allocation formulas based on regional statistics. No individual figures are published as accurate data could not be obtained for all companies.

TABLE 25 EMPLOYMENT AT THE PORT OF GHENT FROM 2010 TO 2015
(FTE)

Sectors	2010	2011	2012	2013	2014	2015	Share in 2015 (in p.c.)	Change from 2014 to 2015 (in p.c.)	Annual average change from 2010 to 2015 (in p.c.)
DIRECT EFFECTS	25,822	26,510	27,120	27,415	28,111	27,809	100.0	- 1.1	+ 1.5
MARITIME CLUSTER	2,936	3,014	3,083	3,057	3,105	2,651	9.5	- 14.6	- 2.0
Shipping agents and forwarders	324	320	332	338	360	354	1.3	- 1.7	+ 1.7
Cargo handling	2,094	2,202	2,221	2,213	2,252	1,759	6.3	- 21.9	- 3.4
Shipping companies	46	31	39	33	36	15	0.1	- 58.7	- 20.3
Shipbuilding and repair	65	57	90	73	71	143	0.5	+ 101.0	+ 16.9
Port construction and dredging	0	0	0	0	0	0	0.0	n.	n.
Fishing and fish industry	0	0	0	0	0	0	0.0	n.	n.
Port trade	1	1	1	1	3	3	0.0	+ 4.4	+ 27.2
Port authority	160	156	156	156	148	148	0.5	- 0.2	- 1.5
Public sector	246	247	243	242	235	229	0.8	- 2.3	- 1.4
Allocation (p.m.)	78	65	105	81	81	146	-	+ 80.8	+ 13.3
NON-MARITIME CLUSTER	22,886	23,496	24,038	24,358	25,006	25,158	90.5	+ 0.6	+ 1.9
TRADE	2,208	2,211	2,246	2,106	2,072	1,829	6.6	- 11.7	- 3.7
INDUSTRY	18,754	19,223	19,821	20,228	20,832	21,263	76.5	+ 2.1	+ 2.5
Energy	167	160	166	170	180	185	0.7	+ 2.9	+ 2.1
Fuel production	33	35	36	39	42	42	0.1	+ 0.2	+ 4.7
Chemicals	2,085	2,132	2,130	2,109	2,102	2,122	7.6	+ 0.9	+ 0.4
Car manufacturing	7,787	8,324	8,762	9,033	9,088	9,548	34.3	+ 5.1	+ 4.2
Electronics	240	240	245	235	253	267	1.0	+ 5.4	+ 2.1
Metalworking industry	5,601	5,589	5,677	5,836	6,057	6,003	21.6	- 0.9	+ 1.4
Construction	1,318	1,230	1,252	1,240	1,460	1,452	5.2	- 0.5	+ 2.0
Food industry	605	587	590	601	632	650	2.3	+ 2.9	+ 1.4
Other industries	917	927	963	968	1,019	995	3.6	- 2.4	+ 1.6
LAND TRANSPORT	1,039	1,000	909	923	943	902	3.2	- 4.4	- 2.8
Road transport	744	767	709	749	783	749	2.7	- 4.4	+ 0.1
Other land transport	295	232	200	174	160	153	0.5	- 4.5	- 12.3
OTHER LOGISTIC SERVICES ...	886	1,063	1,061	1,101	1,159	1,164	4.2	+ 0.4	+ 5.6
INDIRECT EFFECTS	32,140	32,964	34,242	34,335	35,763	36,648	-	+ 2.5	+ 2.7
MARITIME CLUSTER	3,016	3,111	3,267	3,206	3,403	2,954	-	- 13.2	- 0.4
NON-MARITIME CLUSTER	29,124	29,853	30,975	31,130	32,360	33,695	-	+ 4.1	+ 3.0
TOTAL EMPLOYMENT	57,962	59,474	61,362	61,750	63,874	64,457	-	+ 0.9	+ 2.1

Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office, and the Belgian IOTs).

The data necessary to estimate the indirect effects are published by the NAI with a low frequency and after a certain time lag. The indirect effects for the period 2010-2015 are based on IOT 2010 and SUT 2010, 2011, 2012 and 2013. Indirect employment includes employees and self-employed persons, while direct employment mainly relates to employees. The calculated indirect effects are approximations and should be interpreted with caution.

TABLE 26 EMPLOYMENT TOP 10 AT THE PORT OF GHENT IN 2015

Ranking	Company name	Sector
1	VOLVO CAR BELGIUM	Car manufacturing
2	ARCELORMITTAL BELGIUM	Metalworking industry
3	VOLVO GROUP BELGIUM	Car manufacturing
4	DENYS	Construction
5	HONDA MOTOR EUROPE LOGISTICS	Trade
6	TAMINCO	Chemicals
7	STORA ENSO LANGERBRUGGE	Other industries
8	PLASTAL	Car manufacturing
9	KRONOS EUROPE	Chemicals
10	OLEON	Chemicals

Source: NBB. The estimates for the multi-regional firms are based on surveys, annual reports and allocation formulas based on regional statistics.

The top ten tables are based on information from annual accounts, surveys, annual reports and allocation formulas based on regional statistics.

No individual figures are published as accurate data could not be obtained for all companies.

TABLE 27 INVESTMENT AT THE PORT OF GHENT FROM 2010 TO 2015
(in € million - current prices)

Sectors	2010	2011	2012	2013	2014	2015	Share in 2015 (in p.c.)	Change from 2014 to 2015 (in p.c.)	Annual average change from 2010 to 2015 (in p.c.)
MARITIME CLUSTER	93.0	67.1	77.4	86.9	54.5	59.4	16.2	+ 8.9	- 8.6
Shipping agents and forwarders	9.5	4.2	2.3	1.8	1.9	1.7	0.5	- 9.5	- 28.8
Cargo handling	48.9	39.3	58.0	62.5	35.8	36.1	9.9	+ 0.9	- 5.9
Shipping companies	4.7	3.3	1.9	4.8	6.7	1.8	0.5	- 73.6	- 17.5
Shipbuilding and repair	3.5	0.8	0.6	0.4	0.5	1.0	0.3	+ 82.1	- 22.6
Port construction and dredging	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Fishing and fish industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Port trade	0.0	0.0	0.0	0.0	0.1	0.0	0.0	- 36.9	+ 11.9
Port authority	15.2	9.9	6.7	6.4	6.6	8.5	2.3	+ 28.7	- 11.1
Public sector	11.2	9.6	7.8	11.0	3.0	10.3	2.8	+ 248.1	- 1.8
Allocation (p.m.)	9.8	9.4	6.6	7.9	10.7	5.9	-	- 45.2	- 9.7
NON-MARITIME CLUSTER	408.9	377.8	382.1	334.0	352.3	306.0	83.8	- 13.2	- 5.6
TRADE	27.2	24.5	29.1	35.2	43.6	31.3	8.6	- 28.4	+ 2.9
INDUSTRY	350.0	307.3	304.3	243.7	251.1	248.9	68.1	- 0.9	- 6.6
Energy	110.5	35.4	35.6	27.2	5.9	4.4	1.2	- 24.5	- 47.5
Fuel production	1.3	2.8	3.0	3.0	2.2	1.7	0.5	- 19.6	+ 5.6
Chemicals	46.1	68.6	70.1	56.6	70.3	52.3	14.3	- 25.6	+ 2.5
Car manufacturing	53.9	87.5	71.3	34.1	50.6	53.0	14.5	+ 4.8	- 0.3
Electronics	1.8	1.2	1.1	0.9	1.8	2.2	0.6	+ 19.6	+ 3.1
Metalworking industry	54.3	53.2	68.1	67.9	75.2	77.0	21.1	+ 2.4	+ 7.2
Construction	15.2	28.3	18.6	12.3	10.7	14.2	3.9	+ 32.3	- 1.3
Food industry	12.1	15.2	16.2	17.3	15.1	22.7	6.2	+ 50.3	+ 13.4
Other industries	54.8	15.2	20.2	24.5	19.3	21.4	5.9	+ 11.0	- 17.1
LAND TRANSPORT	14.3	23.4	33.4	34.8	31.1	10.5	2.9	- 66.4	- 6.0
Road transport	8.5	12.0	9.5	17.5	14.6	9.6	2.6	- 34.1	+ 2.5
Other land transport.....	5.7	11.4	23.9	17.3	16.5	0.8	0.2	- 95.0	- 32.2
OTHER LOGISTIC SERVICES	17.5	22.6	15.3	20.3	26.5	15.3	4.2	- 42.1	- 2.6
DIRECT INVESTMENT	501.8	444.9	459.5	420.9	406.8	365.3	100.0	- 10.2	- 6.2

Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office and on surveys).

TABLE 28 INVESTMENT TOP 10 AT THE PORT OF GHENT IN 2015

Ranking	Company name	Sector
1	ARCELORMITTAL BELGIUM	Metalworking industry
2	VOLVO GROUP BELGIUM	Car manufacturing
3	VOLVO CAR BELGIUM	Car manufacturing
4	TAMINCO	Chemicals
5	TOTAL BELGIUM	Trade
6	PUBLIC SECTOR	Public sector
7	GHENT PORT AUTHORITY	Port authority
8	FUJI OIL EUROPE	Food industry
9	STORA ENSO LANGERBRUGGE	Other industries
10	OLEON	Chemicals

Source: NBB. The estimates for the multi-regional firms are based on surveys, annual reports and allocation formulas based on regional statistics. The top ten tables are based on information from annual accounts, surveys, annual reports and allocation formulas based on regional statistics. No individual figures are published as accurate data could not be obtained for all companies.

4 PORT OF OSTEND

4.1 Port developments⁵²

In 2015 the total traffic handled by the port of Ostend dropped to 1.3 million tonnes (-9.5%). The main reason was the decline in deliveries of sand and gravel (-8.9%). The number of passengers has been falling since 2013, owing to the loss of the RoRo business. In 2015, the number of cruise ship passengers embarking or disembarking came to 11,277.

In 2016, transshipment increased by 13.1%, to a total of 1.5 million tonnes. That is due mainly to the increase in the volume of dry bulk (deliveries of sand and gravel from the sea for the construction industry). Dry bulk accounts for 92% of the total. In 2016, 4,287 passengers passed through the port of Ostend.

In recent years the port of Ostend has presented itself as an “Energy Port”. The installation and maintenance of the 3 offshore wind parks in the North Sea (C-Power, Belwind & Northwind) is handled from Ostend. These activities generate additional shipping movements to and from the port, and also attract new companies to the port.

4.2 Value added

Direct value added in the port of Ostend rose by 1.6% thanks to the maritime cluster. Value added in the non-maritime cluster was down by 2.2% owing to declines in trade, industry and other logistic services that could not be offset by the growth registered in the road transport segment.

In the maritime cluster, the shipping agents and forwarders segment has benefited from one of its stakeholders expanding its activity in the port of Ostend. The port construction and dredging segment saw its value added increase on the back of higher operating profits and staff costs in one large company in this segment. The stagnation of value added in the fishing segment is mainly down to one single company whose own value added dropped sharply, thus offsetting the rises recorded among other firms.

In the non-maritime cluster, one single company is responsible for the decline in value added in trade following a contraction of its business activity. Likewise, the overall decline in the metalworking industry is attributable to the reduction in value added of the segment's largest company. Car manufacturing benefited from the return to profitability of one of segment's stakeholders. The food industry segment, for its part, benefited from the development of one of its companies' business activity. Finally, one firm from the other logistic services segment that had posted particularly high value added figures in 2014, returned to more normal results in 2015, which had a negative impact on the segment's overall value added.

The indirect value added was up by 6.4% and is attributable primarily to the construction and dredging and food industry segments.

Direct value added represented 0.2% of the GDP of the Flemish region and 0.1% of the Belgian GDP. Total value added accounted for 0.2% of the Belgian GDP.

4.3 Employment

Direct employment contracted by 1.4% in the port of Ostend in 2015. The maritime cluster fell back slightly with a decline of less than 1%, while the reduction in the non-maritime cluster was a bit more pronounced (-1.7%). It was industry that was largely responsible for job losses, while employment was up in trade, land transport and other logistic services.

In the maritime cluster, employment in the shipping agents and forwarders segment was up by eleven full-time equivalents largely thanks to the development of one firm's activity. Although wages, social security and pension costs were higher in the port construction and dredging segment, employment

⁵² Source: *Jean-Pierre Merckx, Flemish Port Commission.*

expressed as full-time equivalents actually contracted. After marking time in 2014, employment in the fishing segment started to rise again. But part of this increase comes from activities outside the ports⁵³. The growth in trade in the non-maritime cluster comes mainly from the segment's biggest stakeholder. The two main segments responsible for the decline with 3.6% in industry are the metalworking industry and other industry. Workforce cuts by the sector's main employer are behind the reduction in the former segment, while a bankruptcy largely explains the drop in the latter segment. The other logistic services segment benefited from the expansion of a newcomer in the port.

In 2015 there was little change in employment generated in the supplier sector.

Direct employment represented 0.2% of the employment in the Flemish region and 0.1% of Belgian employment. Total employment accounted for 0.2% of Belgian employment.

4.4 Investment

Direct investment in the port of Ostend was 49.4% down in 2015. In the maritime cluster, it fell by 62.2%, but that represents a return to normal, because in 2014 investment in the port construction and dredging segment had been particularly high, increasing by over € 46 million. There was no sign of any such investment in 2015. In the non-maritime cluster, investment in trade was halved. In industry, all segments were down except for energy and chemicals. Investment in road transport increased, whereas in other logistic services it declined. Overall, investment in the non-maritime cluster was down by 30.4%.

CHART 10 CHANGE IN DIRECT VALUE ADDED
(in € million, current prices)

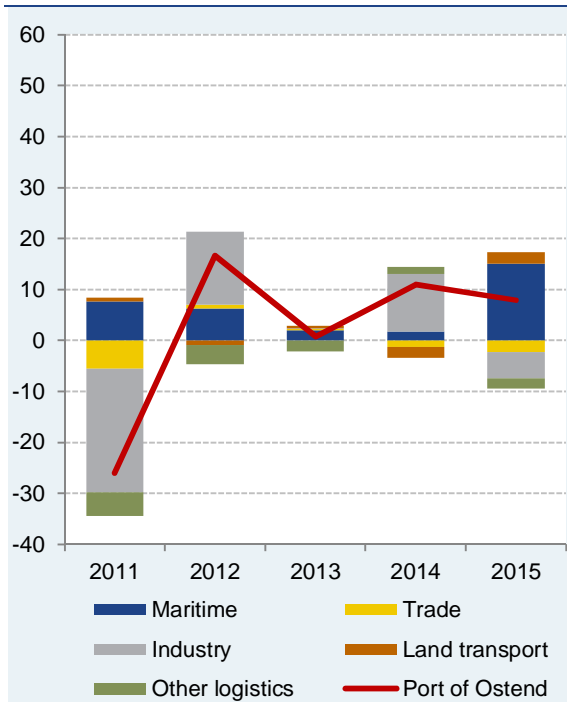
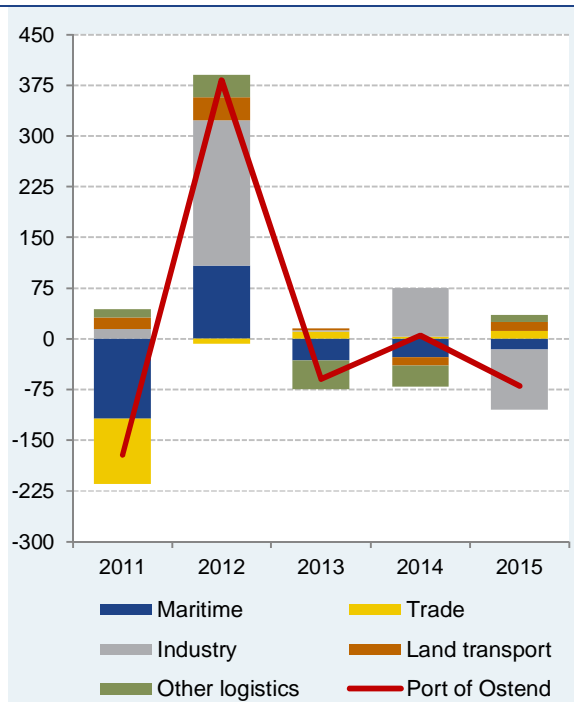


CHART 11 CHANGE IN DIRECT EMPLOYMENT
(FTE)



Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office).

⁵³ These figures stand for the activity of the maritime enterprises located outside the port limits and are divided among the Flemish ports according to the breakdown of value added.

TABLE 29 VALUE ADDED AT THE PORT OF OSTEND FROM 2010 TO 2015
(in € million - current prices)

Sectors	2010	2011	2012	2013	2014	2015	Share in 2015 (in p.c.)	Change from 2014 to 2015 (in p.c.)	Annual average change from 2010 to 2015 (in p.c.)
DIRECT EFFECTS	498.0	472.0	488.6	489.4	500.4	508.3	100.0	+ 1.6	+ 0.4
MARITIME CLUSTER	155.6	163.3	169.6	171.6	173.3	188.4	37.1	+ 8.7	+ 3.9
Shipping agents and forwarders	4.5	4.6	7.0	4.5	2.9	5.0	1.0	+ 71.6	+ 2.3
Cargo handling	2.2	2.2	3.3	2.2	3.1	2.7	0.5	- 14.4	+ 4.0
Shipping companies	0.6	0.6	0.2	0.8	1.1	1.0	0.2	- 7.7	+ 11.1
Shipbuilding and repair	12.6	12.2	12.4	12.9	12.2	12.5	2.5	+ 2.4	- 0.1
Port construction and dredging	42.5	55.4	57.0	59.4	57.6	70.5	13.9	+ 22.5	+ 10.6
Fishing and fish industry	41.8	37.1	36.1	39.6	42.2	42.6	8.4	+ 1.0	+ 0.4
Port trade	0.0	0.0	0.0	0.0	0.0	0.0	0.0	- 38.2	+ 6.2
Port authority	3.2	2.0	3.6	2.3	2.4	2.7	0.5	+ 11.9	- 3.1
Public sector	48.3	49.3	50.1	49.9	51.7	51.3	10.1	- 0.8	+ 1.2
Allocation (p.m.)	12.8	11.5	10.8	11.6	13.0	15.1	-	+ 16.4	+ 3.4
NON-MARITIME CLUSTER	342.4	308.7	319.0	317.8	327.1	319.9	62.9	- 2.2	- 1.4
TRADE	20.2	14.6	15.3	15.6	14.3	12.1	2.4	- 16.0	- 9.8
INDUSTRY.....	275.0	250.7	265.1	265.1	276.4	271.3	53.4	- 1.8	- 0.3
Energy	27.8	22.0	19.0	13.4	18.8	19.7	3.9	+ 4.8	- 6.7
Fuel production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Chemicals	36.5	34.3	36.0	38.3	36.7	34.2	6.7	- 6.7	- 1.3
Car manufacturing	2.2	2.4	2.1	2.2	0.8	2.7	0.5	+ 222.8	+ 4.4
Electronics	0.5	-0.1	0.0	0.0	0.0	0.0	0.0	n.	- 100.0
Metalworking industry	176.2	152.9	153.7	161.5	169.6	160.7	31.6	- 5.3	- 1.8
Construction	17.7	21.2	37.3	33.1	31.7	32.6	6.4	+ 2.5	+ 13.0
Food industry	8.7	11.2	12.2	12.3	11.6	14.5	2.8	+ 24.7	+ 10.7
Other industries	5.5	6.6	4.7	4.3	7.2	7.0	1.4	- 2.0	+ 5.0
LAND TRANSPORT	24.5	25.2	24.3	25.0	22.8	25.0	4.9	+ 9.7	+ 0.4
Road transport	24.5	25.2	23.7	25.0	22.8	25.0	4.9	+ 9.7	+ 0.4
Other land transport	0.0	0.0	0.6	0.0	0.0	0.0	0.0	n.	n.
OTHER LOGISTIC SERVICES ...	22.7	18.1	14.3	12.1	13.5	11.4	2.3	- 15.3	- 12.8
INDIRECT EFFECTS	346.6	342.2	370.0	369.5	373.0	396.8	-	+ 6.4	+ 2.7
MARITIME CLUSTER	119.9	130.8	134.4	137.5	137.0	153.8	-	+ 12.2	+ 5.1
NON-MARITIME CLUSTER.....	226.7	211.4	235.6	232.0	235.9	243.0	-	+ 3.0	+ 1.4
TOTAL VALUE ADDED	844.6	814.2	858.7	858.9	873.3	905.0	-	+ 3.6	+ 1.4

Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office, and the Belgian IOTs).

The data necessary to estimate the indirect effects are published by the NAI with a low frequency and after a certain time lag. The indirect effects for the period 2010-2015 are based on IOT 2010 and SUT 2010, 2011, 2012 and 2013. The calculated indirect effects are approximations and should be interpreted with caution.

TABLE 30 VALUE ADDED TOP 10 AT THE PORT OF OSTEND IN 2015

Ranking	Company name	Sector
1	DAIKIN EUROPE	Metalworking industry
2	BAGGERWERKEN DECLOEDT EN ZOON	Port construction and dredging
3	PUBLIC SECTOR	Public sector
4	PROVIRON FUNCTIONAL CHEMICALS	Chemicals
5	BIOSTOOM OOSTENDE	Energy
6	VERHELST AANNEMINGEN	Construction
7	ALGEMENE ONDERNEMINGEN SOETAERT	Construction
8	BELGIAN NAVY	Public sector
9	FIDES PETFOOD	Food industry
10	MHI VESTAS OFFSHORE WIND NORTHWIND	Metalworking industry

Source: NBB. The estimates for the multi-regional firms are based on surveys, annual reports and allocation formulas based on regional statistics. The top ten tables are based on information from annual accounts, surveys, annual reports and allocation formulas based on regional statistics. No individual figures are published as accurate data could not be obtained for all companies.

TABLE 31 EMPLOYMENT AT THE PORT OF OSTEND FROM 2010 TO 2015
(FTE)

Sectors	2010	2011	2012	2013	2014	2015	Share in 2015 (in p.c.)	Change from 2014 to 2015 (in p.c.)	Annual average change from 2010 to 2015 (in p.c.)
DIRECT EFFECTS	4,906	4,735	5,118	5,059	5,063	4,993	100.0	- 1.4	+ 0.4
MARITIME CLUSTER	1,948	1,830	1,939	1,907	1,880	1,864	37.3	- 0.8	- 0.9
Shipping agents and forwarders	60	59	53	12	20	31	0.6	+ 55.9	- 12.4
Cargo handling	89	55	58	55	66	51	1.0	- 22.5	- 10.5
Shipping companies	2	2	1	2	3	2	0.0	- 12.7	- 1.0
Shipbuilding and repair	229	209	193	198	192	184	3.7	- 4.3	- 4.3
Port construction and dredging	270	276	428	426	381	364	7.3	- 4.6	+ 6.2
Fishing and fish industry	512	431	438	447	440	462	9.3	+ 5.1	- 2.0
Port trade	0	0	0	0	0	0	0.0	n.	n.
Port authority	40	43	44	42	38	37	0.7	- 2.9	- 1.5
Public sector	746	756	723	726	740	733	14.7	- 1.0	- 0.3
Allocation (p.m.)	157	135	133	145	133	142	-	+ 6.6	- 2.0
NON-MARITIME CLUSTER	2,958	2,905	3,179	3,152	3,184	3,129	62.7	- 1.7	+ 1.1
TRADE	287	190	182	193	197	209	4.2	+ 6.1	- 6.1
INDUSTRY	2,182	2,197	2,411	2,412	2,484	2,395	48.0	- 3.6	+ 1.9
Energy	53	63	62	55	56	57	1.1	+ 2.1	+ 1.6
Fuel production	0	0	0	0	0	0	0.0	n.	n.
Chemicals	320	318	321	311	312	309	6.2	- 0.9	- 0.7
Car manufacturing	27	29	29	31	33	29	0.6	- 10.5	+ 1.9
Electronics	11	1	0	0	0	0	0.0	n.	- 100.0
Metalworking industry	1,336	1,337	1,338	1,391	1,450	1,384	27.7	- 4.6	+ 0.7
Construction	248	259	476	439	413	404	8.1	- 2.0	+ 10.3
Food industry	124	133	135	130	142	143	2.9	+ 0.8	+ 2.9
Other industries	63	57	50	56	79	68	1.4	- 13.8	+ 1.3
LAND TRANSPORT	364	381	416	418	406	419	8.4	+ 3.2	+ 2.9
Road transport	364	381	406	418	406	419	8.4	+ 3.2	+ 2.9
Other land transport.....	0	0	9	0	0	0	0.0	.,	n.
OTHER LOGISTIC SERVICES	125	137	170	127	96	106	2.1	+ 10.3	- 3.2
INDIRECT EFFECTS	4,126	3,915	4,524	4,413	4,469	4,463	-	- 0.1	+ 1.6
MARITIME CLUSTER	1,331	1,184	1,390	1,349	1,311	1,286	-	- 1.9	- 0.7
NON-MARITIME CLUSTER	2,795	2,731	3,134	3,064	3,158	3,177	-	+ 0.6	+ 2.6
TOTAL EMPLOYMENT	9,032	8,650	9,642	9,472	9,532	9,457	-	- 0.8	+ 0.9

Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office, and the Belgian IOTs).

The data necessary to estimate the indirect effects are published by the NAI with a low frequency and after a certain time lag. The indirect effects for the period 2010-2015 are based on IOT 2010 and SUT 2010, 2011, 2012 and 2013. Indirect employment includes employees and self-employed persons, while direct employment mainly relates to employees. The calculated indirect effects are approximations and should be interpreted with caution.

TABLE 32 EMPLOYMENT TOP 10 AT THE PORT OF OSTEND IN 2015

Ranking	Company name	Sector
1	DAIKIN EUROPE	Metalworking industry
2	PUBLIC SECTOR	Public sector
3	BAGGERWERKEN DECLOEDT EN ZOON	Port construction and dredging
4	VERHELST AANNEMINGEN	Construction
5	PROVIRON FUNCTIONAL CHEMICALS	Chemicals
6	BELGIAN NAVY	Public sector
7	WIM BOSMAN LOGISTIC SERVICES	Road transport
8	ALGEMENE ONDERNEMINGEN SOETAERT	Construction
9	CLEMACO CONTRACTING	Shipbuilding and repair
10	MORUBEL	Fishing and fish industry

Source: NBB. The estimates for the multi-regional firms are based on surveys, annual reports and allocation formulas based on regional statistics. The top ten tables are based on information from annual accounts, surveys, annual reports and allocation formulas based on regional statistics. No individual figures are published as accurate data could not be obtained for all companies.

TABLE 33 INVESTMENT AT THE PORT OF OSTEND FROM 2010 TO 2015
(in € million - current prices)

Sectors	2010	2011	2012	2013	2014	2015	Share in 2015 (in p.c.)	Change from 2014 to 2015 (in p.c.)	Annual average change from 2010 to 2015 (in p.c.)
MARITIME CLUSTER	49.6	22.5	27.5	26.4	72.6	27.4	44.6	- 62.2	- 11.2
Shipping agents and forwarders	0.1	0.2	0.4	1.9	0.6	2.5	4.1	+ 302.5	+ 78.5
Cargo handling	0.1	4.5	1.7	1.8	1.8	0.9	1.4	- 51.9	+ 53.7
Shipping companies	0.2	0.5	0.0	0.2	0.5	0.2	0.3	- 60.0	- 0.5
Shipbuilding and repair	1.6	2.3	1.1	1.9	1.3	2.3	3.7	+ 73.0	+ 7.3
Port construction and dredging	24.6	2.0	3.2	0.2	46.4	0.1	0.2	- 99.7	- 65.7
Fishing and fish industry	9.8	6.5	8.8	6.7	5.2	6.5	10.6	+ 25.3	- 7.8
Port trade	0.0	0.0	0.0	0.0	0.0	0.0	0.0	- 24.6	n.
Port authority	0.9	2.0	2.0	1.5	2.9	1.1	1.8	- 61.4	+ 4.8
Public sector	12.2	4.5	10.3	12.0	13.9	13.8	22.4	- 1.0	+ 2.4
Allocation (p.m.)	6.0	3.9	5.5	4.2	4.4	3.6	-	- 17.9	- 9.5
NON-MARITIME CLUSTER	57.8	69.2	69.8	51.5	48.9	34.0	55.4	- 30.4	- 10.0
TRADE	2.9	5.2	5.6	4.7	7.4	3.6	5.9	- 51.2	+ 4.4
INDUSTRY.....	45.0	45.9	40.8	34.6	35.9	25.4	41.3	- 29.2	- 10.8
Energy	21.4	13.2	2.1	0.2	0.2	0.3	0.6	+ 46.0	- 56.3
Fuel production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Chemicals	3.5	5.6	9.2	6.6	5.7	6.0	9.7	+ 4.8	+ 11.2
Car manufacturing	0.3	0.3	0.2	0.2	0.1	0.0	0.1	- 37.7	- 31.8
Electronics	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	- 100.0
Metalworking industry	6.0	14.4	16.4	15.6	11.2	8.4	13.7	- 24.4	+ 7.2
Construction	7.5	6.7	11.3	9.4	13.6	8.7	14.1	- 36.2	+ 2.9
Food industry	6.2	1.2	0.9	1.4	3.7	1.3	2.2	- 64.3	- 26.5
Other industries	0.1	4.6	0.6	1.2	1.4	0.6	1.0	- 58.0	+ 31.5
LAND TRANSPORT	4.1	7.0	6.6	5.8	1.9	2.4	3.9	+ 28.3	- 10.2
Road transport	2.9	6.6	6.6	5.6	1.8	2.4	3.9	+ 29.7	- 3.9
Other land transport	1.2	0.4	0.0	0.1	0.0	0.0	0.0	- 100.0	- 100.0
OTHER LOGISTIC SERVICES ...	5.8	11.1	16.8	6.4	3.8	2.7	4.3	- 30.3	- 14.4
DIRECT INVESTMENT	107.4	91.7	97.2	77.9	121.6	61.5	100.0	- 49.4	- 10.5

Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office and on surveys).

TABLE 34 INVESTMENT TOP 10 AT THE PORT OF OSTEND IN 2015

Ranking	Company name	Sector
1	PUBLIC SECTOR	Public sector
2	DAIKIN EUROPE	Metalworking industry
3	VERHELST AANNEMINGEN	Construction
4	PROVIRON FUNCTIONAL CHEMICALS	Chemicals
5	ALGEMENE ONDERNEMINGEN SOETAERT	Construction
6	VERHELST MACHINES	Metalworking industry
7	NOORDZEE KRANEN EN TRANSPORT	Shipbuilding and repair
8	DE BRUYCKER	Trade
9	TOPASFALT	Construction
10	2XL	Shipping agents and forwarders

Source: NBB. The estimates for the multi-regional firms are based on surveys, annual reports and allocation formulas based on regional statistics. The top ten tables are based on information from annual accounts, surveys, annual reports and allocation formulas based on regional statistics. No individual figures are published as accurate data could not be obtained for all companies.

5 PORT OF ZEEBRUGGE

5.1 Port developments⁵⁴

In 2015 the total transshipment at the port of Zeebrugge came to 38.3 million tonnes (-9.9% against 2014). The main reason for this fall is the decline in container traffic: down from 20.5 to 15.6 million tonnes (-23.8%). That is attributable entirely to changes in container alliances. With the formation of the O3-alliance (CMA CGM – CSCL - UASC), the main alliance services were added to Zeebrugge. However, formation of the M2 alliance caused the departure of Maersk and MSC. CMA CGM took the feeder network away, and in mid-2015 the FAL 3 service was terminated in order to remedy surplus capacity.

In 2016 the total traffic volume at Zeebrugge was down slightly (-1.3%). Liquid bulk and containers declined, whereas RoRo, dry bulk and conventional general cargo increased.

Roll-on roll-off traffic was up by 6.7% at 14.4 million tonnes in 2016. Within RoRo, the volume of new cars handled was another all-time record, confirming Zeebrugge's leading position as the world's largest port for motor vehicles. In total, Zeebrugge handled 2,776,113 cars in 2016 (+14.3% against 2015). RoRo traffic to and from Scandinavia increased by 11.7%. In 2016, CLdN started a new service between Zeebrugge and the Danish port of Hirtshals. Swedish Orient Lines increased the frequency of its Göteborg service to 7 departures per week. RoRo traffic to and from the United Kingdom increased by 1.2%, to 17.1 million tonnes. In November 2016, P&O Ferries opened the 'Westerhoofd' Terminal. That expansion doubled its capacity in Zeebrugge.

Container traffic was down by 7.6% in 2016. As in 2015, the reduction in deep-sea container services to and from Asia and changes in container alliances are having a negative impact on container traffic. In 2016 the Caribbean deep-sea container service "North Europe French West Indies (NEFWI) service" operated by CMA CGM made a weekly call at Zeebrugge. In addition, there were also regular inducement calls by Maersk Line at APM Terminals Zeebrugge. Zeebrugge is expecting a new deep-sea link to the Far East in 2017. 45% of the traffic of the port of Zeebrugge is connected to the United Kingdom. The Brexit could affect the port in the near future.

Dry bulk was up by 13.2% in 2016 at 1.5 million tonnes, as a result of increased deliveries of sand and gravel and larger volumes in the agro bulk sector.

Conventional general cargo increased strongly in 2016: +27.5%, to 1.5 million tonnes. Paper pulp (+22.9%) and paper and cardboard (+10,8%) recorded a substantial rise, as did kiwifruit at Belgian New Fruit Wharf. Finally, the transshipment of components for the construction of the gas installations for the Yamal LNG project (250,000 tonnes) is also a factor.

Liquid bulk declined in 2016 by 10.7% to 6.0 million tonnes, mainly as a result of the fall in the volume of liquid natural gas (LNG). From 2018, the volume of LNG is expected to increase considerably, thanks to the contract between Yamal trade and Fluxys LNG, for handling 8 million tonnes a year in Zeebrugge.

In 2016, 142 cruise ships entered the port of Zeebrugge with a total of 743,085 cruise passengers on board. In 2015 the figure was 111 cruise ships.

In 2016, a total of 8,467 ships called Zeebrugge. The average ship size was 23,372 GT (compared to 24,553 GT in 2015).

5.2 Value added

Direct value added in the port of Zeebrugge grew by 2.8% in 2015. The maritime cluster posted a rise of 7.1%, while the non-maritime cluster was down by 2.9%, triggered by industry and land transport.

In the maritime cluster, the shipping agents and forwarders, cargo handling and port construction and dredging segments all posted strong growth in value terms. The first of these segments benefited from

⁵⁴ Source: Jean-Pierre Merckx, *Flemish Port Commission*.

the increase in value added generated by several of its large stakeholders. The second saw lower value added among a few firms specialised in container handling but this fall was more than offset by the increase in value added posted by operators of terminals used for other types of cargo, like those specialised in loading/unloading of roll-on roll-off vessels, for instance. The last of these segments benefited from one big company's higher profits and investment.

In the non-maritime cluster, newcomers to the port helped boost value added in trade. Industry, on the other hand, saw a decline in the value added produced in the biggest segment, i.e. energy. Considered as a whole, Fluxys group enterprises operating in the port of Zeebrugge registered a fall in value added, as did one heavyweight in the electricity generation sector. Most firms operating in the other industries segment saw their value added shrink. A significant drop in value added generated by one of the major enterprises active in other logistic services has prevented the segment from seeing better growth figures in value terms.

The rise in indirect value added, up by 2.8%, is due largely to developments in the cargo handling, the shipping agents and forwarders and the construction and dredging segments.

Direct value added represented 0.4% of the GDP of the Flemish region and 0.2% of the Belgian GDP. Total value added accounted for 0.5% of the Belgian GDP.

5.3 Employment

Direct employment in the port of Zeebrugge fell by 1.9%, with the decline evident in both the maritime and non-maritime clusters. In the former, only cargo handling recorded a rise in employment. Among the shipping companies, the segment's biggest stakeholder cut back its workforce and another company went bankrupt. The shipbuilding and repair segment also suffered from the stoppage of one of its companies. The port construction and dredging segment was down because its principal employer cut back staff numbers.

Conversely, one of the largest trade companies in the non-maritime cluster expanded its workforce, which helped boost employment in the segment. A sharp drop in business activity at a construction industry firm and a chemicals company led to a considerable reduction in employment in both segments. Job cuts in the other industries segment were a lot higher than new hirings. Employment in the road transport segment was hit by the failure of one enterprise and big staff cuts in another.

The decrease of indirect employment in the port of Zeebrugge is mainly due to the construction and dredging segment.

Direct employment represented 0.4% of the employment in the Flemish region and 0.2% of Belgian employment. Total employment accounted for 0.5% of Belgian employment.

5.4 Investment

Direct investment in the port of Zeebrugge increased by 14.4%. In the maritime cluster it was down by 21.9%. In 2014, the cargo handling segment had benefited from a substantial investment by a firm moving into the port. Investment on that scale was not repeated in 2015. The port authority invested in maritime access, the cruise vessel building, terminal equipment and preparation of the SHIP project.

In the non-maritime cluster, investment in trade, industry and land transport increased. In energy, Fluxys LNG invested in a second wharf and a new reservoir. In the same segment there was also investment in the development of a wind farm on the port site. The chemicals segment recorded a significant fall, even though Umicore Specialty Materials Brugge, one of the segment's largest firms, is continuing its investment programme relating in particular to the expansion of the administrative buildings, construction of a new staff facilities block, a steam generator, and installation of a Warehouse Management system. Investment in the food industry declined because a firm which had invested an exceptional amount in 2014 did not repeat the exercise in 2015. A number of road transport firms invested in leasing. The decline in investment in other logistic services is due to various reductions rather than a single cut.

CHART 12 CHANGE IN DIRECT VALUE ADDED
(in € million, current prices)

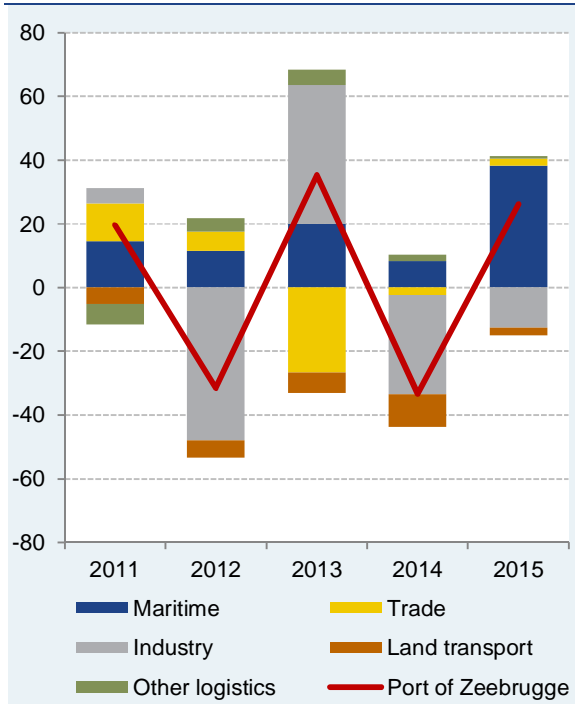
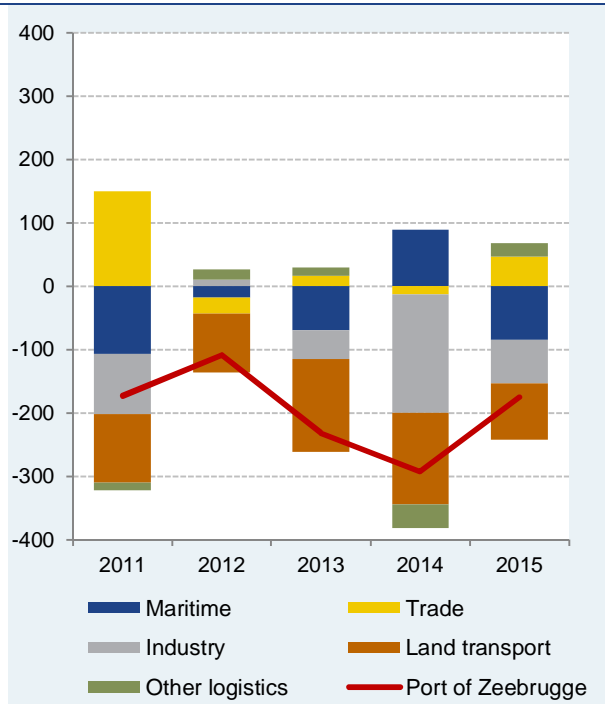


CHART 13 CHANGE IN DIRECT EMPLOYMENT
(FTE)



Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office).

TABLE 35 VALUE ADDED AT THE PORT OF ZEEBRUGGE FROM 2010 TO 2015
(in € million - current prices)

Sectors	2010	2011	2012	2013	2014	2015	Share in 2015 (in p.c.)	Change from 2014 to 2015 (in p.c.)	Annual average change from 2010 to 2015 (in p.c.)
DIRECT EFFECTS	959.5	979.1	947.6	982.8	949.5	975.7	100.0	+ 2.8	+ 0.3
MARITIME CLUSTER	481.9	496.3	507.8	527.8	536.1	574.4	58.9	+ 7.1	+ 3.6
Shipping agents and forwarders	47.9	49.7	58.5	69.8	68.9	84.4	8.7	+ 22.5	+ 12.0
Cargo handling	191.8	191.9	193.9	194.8	206.0	220.2	22.6	+ 6.9	+ 2.8
Shipping companies	31.2	43.3	43.4	48.2	48.5	49.0	5.0	+ 0.9	+ 9.5
Shipbuilding and repair	8.8	9.3	10.3	9.7	8.8	8.2	0.8	- 6.8	- 1.2
Port construction and dredging	17.6	15.3	20.0	24.6	18.6	30.4	3.1	+ 63.4	+ 11.5
Fishing and fish industry	41.7	42.1	39.2	37.6	40.3	42.4	4.3	+ 5.0	+ 0.3
Port trade	0.6	0.6	0.6	0.7	1.1	1.0	0.1	- 9.7	+ 9.0
Port authority	33.5	35.2	34.1	32.5	36.7	35.8	3.7	- 2.4	+ 1.3
Public sector	108.7	108.9	107.8	109.9	107.1	103.0	10.6	- 3.8	- 1.1
Allocation (p.m.)	11.1	15.6	15.0	15.8	16.8	16.4	-	- 2.3	+ 8.1
NON-MARITIME CLUSTER	477.6	482.8	439.7	455.0	413.4	401.3	41.1	- 2.9	- 3.4
TRADE	96.8	108.8	114.7	88.1	85.7	87.8	9.0	+ 2.4	- 1.9
INDUSTRY	277.6	282.4	234.3	277.8	246.7	234.0	24.0	- 5.1	- 3.4
Energy	97.8	107.3	95.0	92.5	98.4	91.4	9.4	- 7.1	- 1.3
Fuel production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Chemicals	27.8	28.0	25.4	30.7	36.1	34.0	3.5	- 5.6	+ 4.2
Car manufacturing	0.6	0.6	0.9	1.1	1.3	1.5	0.2	+ 14.3	+ 18.9
Electronics	52.4	54.8	23.6	54.5	3.0	3.3	0.3	+ 8.3	- 42.5
Metalworking industry	6.2	6.6	5.6	4.0	5.1	4.9	0.5	- 3.1	- 4.5
Construction	34.6	26.1	22.1	24.1	23.8	24.5	2.5	+ 2.5	- 6.7
Food industry	24.5	24.3	27.7	32.4	35.7	33.8	3.5	- 5.2	+ 6.7
Other industries	33.8	34.5	34.1	38.6	43.3	40.5	4.2	- 6.3	+ 3.7
LAND TRANSPORT	81.4	76.4	71.1	64.7	54.4	52.2	5.3	- 4.2	- 8.5
Road transport	67.8	65.4	61.6	57.5	47.7	46.0	4.7	- 3.6	- 7.5
Other land transport	13.6	11.0	9.5	7.2	6.7	6.2	0.6	- 8.6	- 14.7
OTHER LOGISTIC SERVICES ...	21.9	15.2	19.6	24.5	26.6	27.4	2.8	+ 3.1	+ 4.6
INDIRECT EFFECTS	746.0	764.9	775.9	825.8	858.0	881.9	-	+ 2.8	+ 3.4
MARITIME CLUSTER	378.5	423.2	429.4	438.8	450.3	480.9	-	+ 6.8	+ 4.9
NON-MARITIME CLUSTER	367.5	341.7	346.4	386.9	407.7	401.1	-	- 1.6	+ 1.8
TOTAL VALUE ADDED	1,705.5	1,744.0	1,723.4	1,808.6	1,807.5	1,857.7	-	+ 2.8	+ 1.7

Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office, and the Belgian IOTs).

The data necessary to estimate the indirect effects are published by the NAI with a low frequency and after a certain time lag. The indirect effects for the period 2010-2015 are based on IOT 2010 and SUT 2010, 2011, 2012 and 2013. The calculated indirect effects are approximations and should be interpreted with caution.

TABLE 36 VALUE ADDED TOP 10 AT THE PORT OF ZEEBRUGGE IN 2015

Ranking	Company name	Sector
1	BELGIAN NAVY	Public sector
2	FLUXYS LNG	Energy
3	C.RO PORTS ZEEBRUGGE	Cargo handling
4	ZEEBRUGGE PORT AUTHORITY	Port authority
5	COBELFRET FERRIES	Shipping companies
6	INTERNATIONAL CAR OPERATORS	Cargo handling
7	FLUXYS BELGIUM	Energy
8	ARTES DEPRET	Port construction and dredging
9	WALLENIOUS WILHELMSSEN LOGISTICS ZEEBRUGGE	Cargo handling
10	PUBLIC SECTOR	Public sector

Source: NBB. The estimates for the multi-regional firms are based on surveys, annual reports and allocation formulas based on regional statistics. The top ten tables are based on information from annual accounts, surveys, annual reports and allocation formulas based on regional statistics. No individual figures are published as accurate data could not be obtained for all companies.

TABLE 37 EMPLOYMENT AT THE PORT OF ZEEBRUGGE FROM 2010 TO 2015
(FTE)

Sectors	2010	2011	2012	2013	2014	2015	Share in 2015 (in p.c.)	Change from 2014 to 2015 (in p.c.)	Annual average change from 2010 to 2015 (in p.c.)
DIRECT EFFECTS	10,249	10,076	9,967	9,735	9,443	9,268	100.0	- 1.9	- 2.0
MARITIME CLUSTER	6,186	6,080	6,062	5,993	6,082	5,997	64.7	- 1.4	- 0.6
Shipping agents and forwarders	611	605	632	652	658	658	7.1	+ 0.0	+ 1.5
Cargo handling	2,633	2,593	2,664	2,641	2,692	2,756	29.7	+ 2.4	+ 0.9
Shipping companies	274	235	194	178	195	162	1.7	- 16.9	- 10.0
Shipbuilding and repair	139	138	142	135	120	106	1.1	- 11.3	- 5.2
Port construction and dredging	173	177	176	168	213	194	2.1	- 9.0	+ 2.3
Fishing and fish industry	528	525	518	477	494	483	5.2	- 2.3	- 1.7
Port trade	9	9	10	9	14	13	0.1	- 3.5	+ 8.6
Port authority	133	134	132	134	135	133	1.4	- 1.4	+ 0.0
Public sector	1,688	1,664	1,595	1,600	1,563	1,493	16.1	- 4.5	- 2.4
Allocation (p.m.)	344	351	363	344	349	342	-	- 1.9	- 0.1
NON-MARITIME CLUSTER	4,062	3,996	3,905	3,742	3,361	3,271	35.3	- 2.7	- 4.2
TRADE	675	825	799	816	803	849	9.2	+ 5.8	+ 4.7
INDUSTRY	1,939	1,843	1,853	1,807	1,620	1,552	16.7	- 4.2	- 4.3
Energy	127	127	129	125	134	126	1.4	- 5.9	- 0.1
Fuel production	0	0	0	0	0	0	0.0	n.	n.
Chemicals	224	231	237	246	263	234	2.5	- 11.0	+ 0.9
Car manufacturing	11	11	12	11	13	13	0.1	+ 0.8	+ 2.4
Electronics	321	354	351	306	43	46	0.5	+ 8.4	- 32.2
Metalworking industry	90	93	93	76	85	78	0.8	- 8.8	- 2.9
Construction	445	367	341	351	336	323	3.5	- 3.9	- 6.2
Food industry	285	260	273	293	300	310	3.3	+ 3.5	+ 1.7
Other industries	435	400	417	399	447	423	4.6	- 5.5	- 0.6
LAND TRANSPORT	1,259	1,152	1,060	914	769	679	7.3	- 11.6	- 11.6
Road transport	1,033	975	910	806	662	582	6.3	- 12.1	- 10.9
Other land transport.....	225	177	149	108	107	97	1.0	- 8.9	- 15.5
OTHER LOGISTIC SERVICES	190	177	193	206	169	190	2.1	+ 12.7	+ 0.1
INDIRECT EFFECTS	11,518	10,698	10,790	10,284	10,164	9,968	-	- 1.9	- 2.8
MARITIME CLUSTER	6,835	6,506	6,255	5,661	6,070	5,973	-	- 1.6	- 2.7
NON-MARITIME CLUSTER	4,683	4,192	4,534	4,623	4,094	3,995	-	- 2.4	- 3.1
TOTAL EMPLOYMENT	21,767	20,774	20,757	20,019	19,607	19,237	-	- 1.9	- 2.4

Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office, and the Belgian IOTs).

The data necessary to estimate the indirect effects are published by the NAI with a low frequency and after a certain time lag. The indirect effects for the period 2010-2015 are based on IOT 2010 and SUT 2010, 2011, 2012 and 2013. Indirect employment includes employees and self-employed persons, while direct employment mainly relates to employees. The calculated indirect effects are approximations and should be interpreted with caution.

TABLE 38 EMPLOYMENT TOP 10 AT THE PORT OF ZEEBRUGGE IN 2015

Ranking	Company name	Sector
1	BELGIAN NAVY	Public sector
2	C.RO PORTS ZEEBRUGGE	Cargo handling
3	WALLENUS WILHELMSSEN LOGISTICS ZEEBRUGGE	Cargo handling
4	INTERNATIONAL CAR OPERATORS	Cargo handling
5	PUBLIC SECTOR	Public sector
6	MARINE HARVEST PIETERS	Fishing and fish industry
7	P.B.I. FRUIT JUICE COMPANY	Food industry
8	I.V.B.O	Other industries
9	ARTES DEPRET	Port construction and dredging
10	ECS EUROPEAN CONTAINERS	Shipping agents and forwarders

Source: NBB. The estimates for the multi-regional firms are based on surveys, annual reports and allocation formulas based on regional statistics. The top ten tables are based on information from annual accounts, surveys, annual reports and allocation formulas based on regional statistics. No individual figures are published as accurate data could not be obtained for all companies.

TABLE 39 INVESTMENT AT THE PORT OF ZEEBRUGGE FROM 2010 TO 2015
(in € million - current prices)

Sectors	2010	2011	2012	2013	2014	2015	Share in 2015 (in p.c.)	Change from 2014 to 2015 (in p.c.)	Annual average change from 2010 to 2015 (in p.c.)
MARITIME CLUSTER	222.9	164.5	134.0	100.9	138.3	108.1	41.4	- 21.9	- 13.5
Shipping agents and forwarders	19.6	11.9	7.3	4.6	14.7	15.0	5.8	+ 2.3	- 5.1
Cargo handling	114.5	63.0	54.9	40.2	75.6	52.4	20.1	- 30.7	- 14.5
Shipping companies	9.3	1.7	2.0	2.1	2.3	1.6	0.6	- 27.9	- 29.5
Shipbuilding and repair	1.1	1.8	1.4	1.0	1.7	2.6	1.0	+ 53.4	+ 20.1
Port construction and dredging	1.7	1.1	1.1	1.6	1.3	3.0	1.1	+ 138.5	+ 11.6
Fishing and fish industry	9.6	9.2	13.2	6.6	7.4	11.0	4.2	+ 49.9	+ 2.9
Port trade	0.1	0.2	0.0	0.2	0.0	0.0	0.0	- 92.8	- 44.5
Port authority	34.2	33.6	34.0	28.3	22.0	13.4	5.1	- 39.3	- 17.2
Public sector	32.9	42.0	20.0	16.4	13.4	9.0	3.4	- 32.9	- 22.9
Allocation (p.m.)	43.4	46.8	36.9	31.6	46.5	35.1	-	- 24.6	- 4.2
NON-MARITIME CLUSTER	120.2	132.0	124.5	120.5	89.7	152.8	58.6	+ 70.3	+ 4.9
TRADE	12.1	13.5	14.1	12.6	10.6	11.6	4.5	+ 9.9	- 0.9
INDUSTRY.....	67.6	71.0	73.3	70.8	51.8	100.1	38.4	+ 93.5	+ 8.2
Energy	33.2	27.1	24.4	44.0	31.7	83.7	32.1	+ 163.6	+ 20.3
Fuel production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Chemicals	2.7	4.5	3.3	3.1	4.3	3.6	1.4	- 17.9	+ 5.7
Car manufacturing	0.0	0.0	0.1	0.3	0.0	0.1	0.1	+ 851.6	+ 57.1
Electronics	7.3	5.9	4.6	5.5	0.5	0.4	0.1	- 27.6	- 45.0
Metalworking industry	0.8	0.4	0.5	0.3	0.3	0.3	0.1	+ 3.9	- 17.1
Construction	6.9	6.4	5.3	3.3	2.6	2.2	0.9	- 14.2	- 20.1
Food industry	6.1	6.4	15.2	4.7	5.9	3.7	1.4	- 37.1	- 9.2
Other industries	10.6	20.3	19.8	9.6	6.3	6.1	2.3	- 3.3	- 10.4
LAND TRANSPORT	27.4	41.2	33.9	28.5	21.2	36.4	14.0	+ 72.3	+ 5.9
Road transport	17.0	16.2	8.7	12.0	10.8	16.6	6.4	+ 54.5	- 0.4
Other land transport	10.4	25.0	25.2	16.5	10.4	19.8	7.6	+ 90.6	+ 13.8
OTHER LOGISTIC SERVICES ...	13.2	6.3	3.3	8.6	6.2	4.6	1.8	- 26.3	- 19.0
DIRECT INVESTMENT	343.1	296.5	258.6	221.4	228.0	260.9	100.0	+ 14.4	- 5.3

Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office and on surveys).

TABLE 40 INVESTMENT TOP 10 AT THE PORT OF ZEEBRUGGE IN 2015

Ranking	Company name	Sector
1	FLUXYS LNG	Energy
2	BNRC GROUP	Other land transport
3	ZEEBRUGGE PORT AUTHORITY	Port authority
4	FLUXYS BELGIUM	Energy
5	2XL	Shipping agents and forwarders
6	PUBLIC SECTOR	Public sector
7	ZEEBRUGGE INTERNATIONAL PORT	Cargo handling
8	C.RO PORTS ZEEBRUGGE	Cargo handling
9	JEBO FOOD	Fishing and fish industry
10	LIBECCIO II	Energy

Source: NBB. The estimates for the multi-regional firms are based on surveys, annual reports and allocation formulas based on regional statistics. The top ten tables are based on information from annual accounts, surveys, annual reports and allocation formulas based on regional statistics. No individual figures are published as accurate data could not be obtained for all companies.

6 LIÈGE PORT COMPLEX

6.1 Port developments⁵⁵

In the public quays of the Port of Liège, the volumes loaded, unloaded and transported by waterway saw their increase, which began in 2014 after a two-year decline, accelerate in 2015 to reach 14.6 million tonnes⁵⁶. According to the Port of Liège, these developments come from the rise in extraction of mineral products, transport of slurries and other wastes used by local cement plants, new oil facilities in Wandre and the increased use of waterways for container transport. Yet, certain factors went against such developments: a particularly mild 2014/2015 winter and Biowanze's more local cereal supply, which resorts more intensively to road transport. With 4.5 million tonnes, Belgium is the main region of origin for imported cargo, followed by the Netherlands with 3.3 million tonnes. As regards exports, the Netherlands took the lead with 2.7 million tonnes, followed closely by Belgium with 2.6 million tonnes. As regards cargo, the main categories of transhipped cargo are other non-metallic mineral products with 6.5 million tonnes, followed by coke and refined petroleum products with 3.3 million tonnes. The following categories also exceeded one million tonnes of processed cargo: "coal and lignite", "metals" and "secondary raw materials and waste".

In 2015, the fourth lock at Lanaye and the multimodal hub of Liège Trilogiport were inaugurated. The fourth lock at Lanaye allows ships that weigh up to 9,000 tonnes to pass. Another major infrastructure development for the Liège port complex is the site of Liège Trilogiport which includes a container terminal and logistical warehouses. The landscaping plan of the multimodal platform entered its second phase during the second half of the year.

6.2 Value added

Direct value added generated in the Liège port complex fell by 9.8% in 2015. This reduction comes from the non-maritime cluster, as the maritime cluster posted growth of 6.8%. Several cargo-handling firms actually enjoyed a rise in their value added figures. None of the shipping companies recorded a drop in value added.

In the non-maritime cluster, value added in the trade segment dropped by 9.1%. A major firm specialising in the import and processing of coal saw its operating profits sink. Value added in industry dropped by as much as 11.1%, under pressure from poor figures from the energy segment, which posted its fourth decline in a row, the chemicals industry and construction. The biggest firm in the chemicals industry recorded a loss unlike being in profit a year earlier. In the construction segment, 2014 had been an exceptional year on account of the sale of a production unit by a major group and figures returned to more normal levels in 2015. The other logistic services segment profited from the expansion of the business activity of a newcomer settled in the port.

Indirect value added declined sharply in 2015 (-11.3%). The fall in the energy, chemicals and construction segments contributed to this drop.

Direct value added represented 1.1% of the GDP of the Walloon region and 0.2% of the Belgian GDP. Total value added accounted for 0.5% of the Belgian GDP.

6.3 Employment

Direct employment in the Liège port complex fell by 4% in 2015. Employment held up well in the maritime cluster, with the slight drop in the shipping agents and forwarders and port authority segments having been offset by rises among the cargo handling and shipping companies segments.

Direct employment in the non-maritime cluster was down by 4.1%. Employment was up by 1.5% in the trade sector and by 3.5% in other logistic services segment. Conversely, it fell by 4.6% in industry and by 18.7% in land transport. In industry, the energy sector kept its employment levels stable in 2015 after several years of expansion. Employment in the chemicals segment grew largely thanks to its principal

⁵⁵ Source: www.portdeliege.be, *Press release 16 February 2016* from the Liège Port Authority.

⁵⁶ The traffic considered here is the total of the cargo handled on the public quays. However, the growth figures need to be interpreted with caution because the private quays are gradually managed by the Autonomous Port of Liège. As from 2015 the traffic of the Liège Port Complex will only include the public quays.

employer expanding its workforce in 2015. By contrast, several metalworking industry enterprises, including the biggest employer, reduced their staff. In the same way, a good many firms reduced their staff in the construction sector. The other industries segment also continued to contract. The extra jobs in the food industry segment came from the principal employer restructuring. However, there is no certainty that this reorganisation will lead to higher employment on the port site in the longer term and a fall in job numbers here cannot be ruled out for 2016. The two biggest employers in the land transport segment cut back their workforces, which explains the decline in employment. The other logistic services segment benefited from one firm moving and setting up business in the port.

The decline in indirect employment in the port of Liège is due largely to the fall in the steel industry.

Direct employment represented 0.7% of the employment in the Walloon region and 0.2% of Belgian employment. Total employment accounted for 0.5% of Belgian employment.

6.4 Investment

Direct investment in the maritime cluster of the Liège port complex was down by € 0.6 million. That fall was due to the shipping agents and forwarders segment where one firm had driven up the figures in 2014 by buying tug-pushed barges, a move which it did not repeat in 2015.

In the non-maritime cluster, direct investment grew by 6.4%, with increases in trade, industry, land transport and other logistic services. In trade, a petroleum products storage company invested in items such as reservoirs, land and buildings, and equipment, helping the segment to surpass its good 2014 results. In the energy segment, a large electricity producer invested in the maintenance and modernisation of its installations. In the chemicals segment, several firms stepped up their investment; one firm in particular greatly increased its investment in order to develop a number of products for various markets. In construction and in the metalworking industry, several major players cut their investment. In other industries, two firms involved in recycling and waste management seriously reduced their investment, while a third increased it; overall, investment in the segment declined. In road transport, investment expanded, mainly thanks to one firm which effected acquisitions in the form of a leasing contract. Taken overall, direct investment in the Liège port complex increased by 6%.

CHART 14 CHANGE IN DIRECT VALUE ADDED
(in € million, current prices)

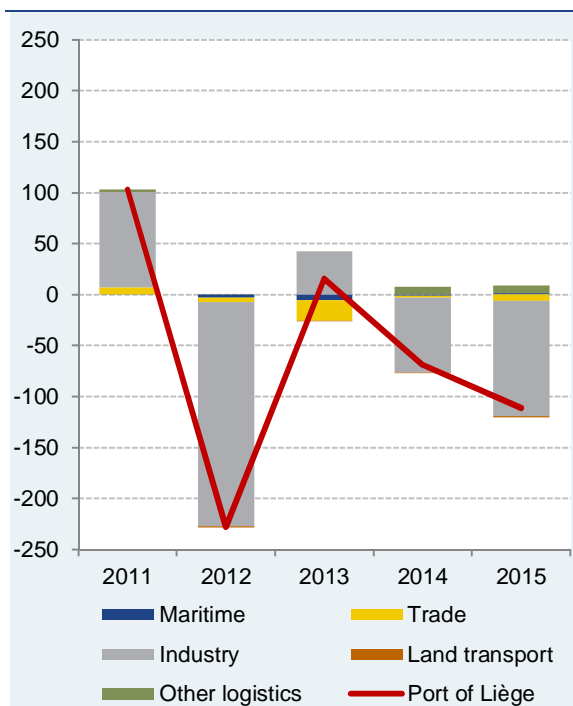
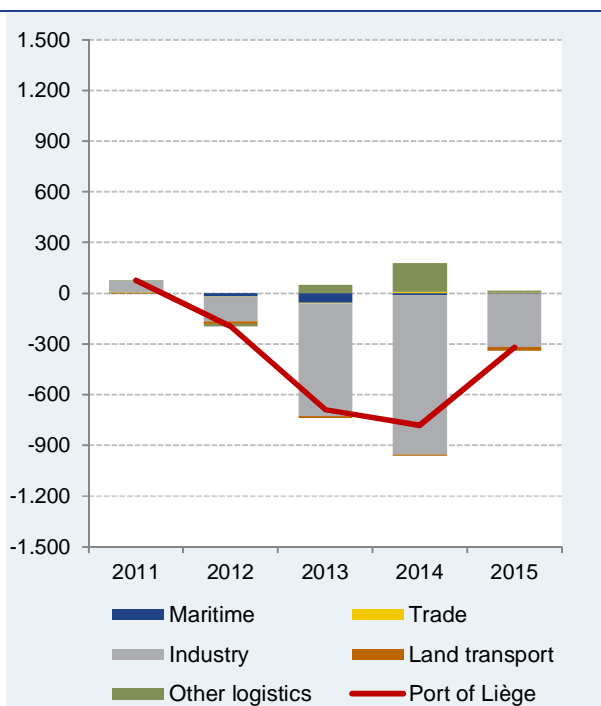


CHART 15 CHANGE IN DIRECT EMPLOYMENT
(FTE)



Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office).

TABLE 41 VALUE ADDED IN THE LIÈGE PORT COMPLEX FROM 2010 TO 2015
(in € million - current prices)

Sectors	2010	2011	2012	2013	2014	2015	Share in 2015 (in p.c.)	Change from 2014 to 2015 (in p.c.)	Annual average change from 2010 to 2015 (in p.c.)
DIRECT EFFECTS	1,310.5	1,413.4	1,185.6	1,201.5	1,132.4	1,021.0	100.0	- 9.8	- 4.9
MARITIME CLUSTER	33.2	33.2	30.2	24.7	23.5	25.1	2.5	+ 6.8	- 5.4
Shipping agents and forwarders	11.4	11.5	8.7	4.0	3.6	3.7	0.4	+ 0.6	- 20.3
Cargo handling	15.1	14.9	14.4	14.5	13.1	14.2	1.4	+ 8.2	- 1.2
Shipping companies	3.9	3.7	4.0	3.0	3.6	4.2	0.4	+ 17.0	+ 1.4
Shipbuilding and repair	0.4	0.5	0.5	0.6	0.6	0.5	0.0	- 12.0	+ 6.0
Port construction and dredging	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Fishing and fish industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Port trade	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Port authority	2.4	2.5	2.6	2.7	2.6	2.6	0.3	- 1.4	+ 1.2
Public sector	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
<i>Allocation (p.m.)</i>									
NON-MARITIME CLUSTER	1,277.3	1,380.2	1,155.4	1,176.8	1,108.9	995.9	97.5	- 10.2	- 4.9
TRADE	84.9	92.0	87.5	67.4	66.0	60.0	5.9	- 9.1	- 6.7
INDUSTRY	1,174.8	1,268.4	1,048.9	1,091.0	1,017.2	903.9	88.5	- 11.1	- 5.1
Energy	409.3	496.7	388.0	382.6	324.7	252.1	24.7	- 22.4	- 9.2
Fuel production	-5.3	42.4	34.6	59.7	39.2	40.4	4.0	+ 2.9	- 250.3
Chemicals	126.4	121.1	99.4	118.7	143.1	132.4	13.0	- 7.5	+ 0.9
Car manufacturing	0.5	0.4	0.4	0.4	0.4	0.3	0.0	- 24.2	- 8.2
Electronics	3.4	5.5	4.6	3.3	4.2	6.1	0.6	+ 45.6	+ 12.2
Metalworking industry	412.3	383.8	338.5	333.5	274.6	275.0	26.9	+ 0.1	- 7.8
Construction	133.0	128.6	102.7	103.9	142.7	105.4	10.3	- 26.1	- 4.5
Food industry	22.8	20.5	23.1	29.4	26.9	28.4	2.8	+ 5.5	+ 4.5
Other industries	72.4	69.6	57.5	59.6	61.3	63.9	6.3	+ 4.2	- 2.5
LAND TRANSPORT	8.5	8.5	7.4	6.7	6.3	4.8	0.5	- 23.3	- 10.6
Road transport	7.5	7.5	6.5	5.7	5.3	4.2	0.4	- 19.1	- 10.6
Other land transport.....	1.0	1.0	0.9	1.0	1.1	0.6	0.1	- 44.1	- 10.5
OTHER LOGISTIC SERVICES	9.1	11.2	11.6	11.8	19.4	27.1	2.7	+ 39.9	+ 24.3
INDIRECT EFFECTS	1,184.7	1,328.3	1,153.4	1,302.3	1,206.8	1,070.2	-	- 11.3	- 2.0
MARITIME CLUSTER	24.8	23.9	22.1	18.2	17.7	19.4	-	+ 9.9	- 4.7
NON-MARITIME CLUSTER	1,159.9	1,304.4	1,131.3	1,284.1	1,189.1	1,050.8	-	- 11.6	- 2.0
TOTAL VALUE ADDED	2,495.2	2,741.7	2,339.0	2,503.8	2,339.2	2,091.2	-	- 10.6	- 3.5

Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office, and the Belgian IOTs).

The data necessary to estimate the indirect effects are published by the NAI with a low frequency and after a certain time lag. The indirect effects for the period 2010-2015 are based on IOT 2010 and SUT 2010, 2011, 2012 and 2013. The calculated indirect effects are approximations and should be interpreted with caution.

TABLE 42 VALUE ADDED TOP 10 AT THE LIÈGE PORT COMPLEX IN 2015

Ranking	Company name	Sector
1	ELECTRABEL	Energy
2	ARCELORMITTAL BELGIUM	Metalworking industry
3	PRAYON	Chemicals
4	COCKERILL MAINTENANCE & INGENIERIE	Metalworking industry
5	BIOWANZE	Fuel production
6	CIMENTERIES CBR CEMENTBEDRIJVEN	Construction
7	CARRIERES ET FOURS A CHAUX DUMONT-WAUTIER	Construction
8	EDF LUMINUS	Energy
9	IMERYS MINERAUX BELGIQUE	Chemicals
10	INTRADEL	Other industries

Source: NBB. The estimates for the multi-regional firms are based on surveys, annual reports and allocation formulas based on regional statistics. The top ten tables are based on information from annual accounts, surveys, annual reports and allocation formulas based on regional statistics. No individual figures are published as accurate data could not be obtained for all companies.

TABLE 43 EMPLOYMENT IN THE LIÈGE PORT COMPLEX FROM 2010 TO 2015
(FTE)

Sectors	2010	2011	2012	2013	2014	2015	Share in 2015 (in p.c.)	Change from 2014 to 2015 (in p.c.)	Annual average change from 2010 to 2015 (in p.c.)
DIRECT EFFECTS	9,670	9,746	9,551	8,864	8,082	7,761	100.0	- 4.0	- 4.3
MARITIME CLUSTER	374	378	361	305	296	295	3.8	- 0.4	- 4.6
Shipping agents and forwarders	103	94	94	56	47	43	0.6	- 8.2	- 16.1
Cargo handling	173	183	166	153	153	156	2.0	+ 1.8	- 2.1
Shipping companies	52	55	54	51	52	54	0.7	+ 2.2	+ 0.8
Shipbuilding and repair	10	10	9	9	9	9	0.1	- 6.3	- 3.2
Port construction and dredging	0	0	0	0	0	0	0.0	n.	n.
Fishing and fish industry	0	0	0	0	0	0	0.0	n.	n.
Port trade	0	0	0	0	0	0	0.0	n.	n.
Port authority	36	36	38	36	35	34	0.4	- 1.7	- 1.1
Public sector	0	0	0	0	0	0	0.0	n.	n.
<i>Allocation (p.m.)</i>									
NON-MARITIME CLUSTER	9,296	9,368	9,191	8,558	7,786	7,466	96.2	- 4.1	- 4.3
TRADE	382	387	387	386	395	401	5.2	+ 1.5	+ 1.0
INDUSTRY	8,620	8,686	8,536	7,867	6,923	6,608	85.1	- 4.6	- 5.2
Energy	1,174	1,192	1,215	1,246	1,293	1,293	16.7	+ 0.0	+ 2.0
Fuel production	128	124	122	122	125	125	1.6	- 0.3	- 0.5
Chemicals	1,078	1,102	1,090	1,020	996	1,011	13.0	+ 1.5	- 1.3
Car manufacturing	12	11	10	9	9	7	0.1	- 25.8	- 9.9
Electronics	56	69	73	68	71	74	0.9	+ 4.1	+ 5.7
Metalworking industry	4,457	4,462	4,327	3,718	2,783	2,440	31.4	- 12.3	- 11.4
Construction	917	896	863	846	807	789	10.2	- 2.2	- 3.0
Food industry	83	94	98	99	111	154	2.0	+ 39.5	+ 13.3
Other industries	716	737	739	737	729	716	9.2	- 1.7	+ 0.0
LAND TRANSPORT	158	156	144	130	122	99	1.3	- 18.7	- 8.9
Road transport	141	140	130	115	105	90	1.2	- 14.7	- 8.6
Other land transport	17	16	14	15	17	9	0.1	- 44.3	- 11.4
OTHER LOGISTIC SERVICES ...	136	138	123	175	345	357	4.6	+ 3.5	+ 21.3
INDIRECT EFFECTS	13,198	13,656	13,784	12,941	11,614	11,185	-	- 3.7	- 3.3
MARITIME CLUSTER	379	388	377	309	309	311	-	+ 0.5	- 3.9
NON-MARITIME CLUSTER	12,819	13,269	13,407	12,632	11,305	10,874	-	- 3.8	- 3.2
TOTAL EMPLOYMENT	22,868	23,402	23,336	21,805	19,696	18,946	-	- 3.8	- 3.7

Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office, and the Belgian IOTs).

The data necessary to estimate the indirect effects are published by the NAI with a low frequency and after a certain time lag. The indirect effects for the period 2010-2015 are based on IOT 2010 and SUT 2010, 2011, 2012 and 2013. Indirect employment includes employees and self-employed persons, while direct employment mainly relates to employees. The calculated indirect effects are approximations and should be interpreted with caution.

TABLE 44 EMPLOYMENT TOP 10 AT THE LIÈGE PORT COMPLEX IN 2015

Ranking	Company name	Sector
1	ARCELORMITTAL BELGIUM	Metalworking industry
2	ELECTRABEL	Energy
3	COCKERILL MAINTENANCE & INGENIERIE	Metalworking industry
4	PRAYON	Chemicals
5	INTRADEL	Other industries
6	CIMENTERIES CBR CEMENTBEDRIJVEN	Construction
7	CARRIERES ET FOURS A CHAUX DUMONT-WAUTIER	Construction
8	ARJEMO	Other logistic services
9	SEGAL	Metalworking industry
10	RAFFINERIE TIRLEMONTTOISE - TIENSE SUIKERRAFFINADERERIJ	Food industry

Source: NBB. The estimates for the multi-regional firms are based on surveys, annual reports and allocation formulas based on regional statistics. The top ten tables are based on information from annual accounts, surveys, annual reports and allocation formulas based on regional statistics. No individual figures are published as accurate data could not be obtained for all companies.

TABLE 45 INVESTMENT IN THE LIÈGE PORT COMPLEX FROM 2010 TO 2015
(in € million - current prices)

Sectors	2010	2011	2012	2013	2014	2015	Share in 2015 (in p.c.)	Change from 2014 to 2015 (in p.c.)	Annual average change from 2010 to 2015 (in p.c.)
MARITIME CLUSTER	3,6	5,0	7,0	4,0	5,2	4,6	2,2	- 10,5	+ 5,4
Shipping agents and forwarders	0,7	1,0	1,0	0,2	2,1	0,6	0,3	- 71,2	- 2,3
Cargo handling	2,2	3,0	2,4	3,4	2,6	3,0	1,4	+ 13,9	+ 6,0
Shipping companies	0,3	0,7	0,5	0,4	0,2	0,2	0,1	+ 24,7	- 8,8
Shipbuilding and repair	0,0	0,0	0,0	0,0	0,0	0,0	0,0	n.	n.
Port construction and dredging	0,0	0,0	0,0	0,0	0,0	0,0	0,0	n.	n.
Fishing and fish industry	0,0	0,0	0,0	0,0	0,0	0,0	0,0	n.	n.
Port trade	0,0	0,0	0,0	0,0	0,0	0,0	0,0	n.	n.
Port authority	0,3	0,2	3,0	0,0	0,3	0,8	0,4	+ 206,3	+ 21,3
Public sector	0,0	0,0	0,0	0,0	0,0	0,0	0,0	n.	n.
<i>Allocation (p.m.)</i>									
NON-MARITIME CLUSTER	182,9	194,1	234,1	209,7	191,1	203,3	97,8	+ 6,4	+ 2,1
TRADE	4,9	5,7	4,5	2,7	6,7	7,0	3,3	+ 4,4	+ 7,3
INDUSTRY	174,3	183,4	220,8	203,0	181,3	190,0	91,4	+ 4,8	+ 1,7
Energy	58,8	82,0	82,3	88,9	79,8	93,4	44,9	+ 16,9	+ 9,7
Fuel production	16,8	6,4	7,6	5,9	7,2	7,2	3,5	+ 1,1	- 15,5
Chemicals	36,4	21,4	26,6	21,6	18,4	31,2	15,0	+ 69,8	- 3,0
Car manufacturing	0,1	0,0	0,0	0,1	0,0	0,0	0,0	+ 111,3	- 16,6
Electronics	0,4	0,7	2,4	0,5	0,6	0,7	0,3	+ 4,5	+ 9,6
Metalworking industry	26,6	40,6	68,3	40,1	30,5	25,5	12,2	- 16,5	- 0,9
Construction	23,7	20,4	17,1	29,6	28,4	14,1	6,8	- 50,1	- 9,8
Food industry	1,1	1,6	1,7	1,9	1,9	4,2	2,0	+ 125,0	+ 29,5
Other industries	10,3	10,5	14,8	14,5	14,5	13,6	6,6	- 6,0	+ 5,8
LAND TRANSPORT	1,6	2,6	1,0	2,1	1,2	2,0	1,0	+ 68,6	+ 5,1
Road transport	1,0	1,8	0,5	1,2	0,5	1,7	0,8	+ 249,8	+ 11,3
Other land transport.....	0,6	0,8	0,5	0,9	0,7	0,3	0,1	- 57,3	- 11,8
OTHER LOGISTIC SERVICES	2,1	2,3	7,7	1,9	1,9	4,3	2,1	+ 124,8	+ 15,4
DIRECT INVESTMENT	186,5	199,1	241,1	213,7	196,3	208,0	100,0	+ 6,0	+ 2,2

Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office and on surveys).

TABLE 46 INVESTMENT TOP 10 AT THE LIÈGE PORT COMPLEX IN 2015

Ranking	Company name	Sector
1	ELECTRABEL	Energy
2	PRAYON	Chemicals
3	ARCELORMITTAL BELGIUM	Metalworking industry
4	EDF LUMINUS	Energy
5	BIOWANZE	Fuel production
6	CARRIERES ET FOURS A CHAUX DUMONT-WAUTIER	Construction
7	COCKERILL MAINTENANCE & INGENIERIE	Metalworking industry
8	RAFFINERIE TIRLEMONTAISE - TIENSE SUIKERRAFFINADERERIJ	Food industry
9	GILOPS GROUP	Trade
10	RECYCLAGE ET VALORISATION TECHNIQUE	Other industries

Source: NBB. The estimates for the multi-regional firms are based on surveys, annual reports and allocation formulas based on regional statistics. The top ten tables are based on information from annual accounts, surveys, annual reports and allocation formulas based on regional statistics. No individual figures are published as accurate data could not be obtained for all companies.

7 PORT OF BRUSSELS

7.1 Port developments⁵⁷

After a 1.7% decrease in 2015, Brussels' own traffic grew by 2.7% in 2016. Container traffic set a new absolute record. The two most important types of cargo for the Port of Brussels remain building materials and petroleum products, for which transhipped volumes both increased in 2016.

For the Port of Brussels, 2015 was characterised by the launch of the restoration works of the TIR Centre's viaducts. These viaducts enable heavy goods vehicles to access the higher levels of the storage centre. Besides these restoration works, planning permission for the building of a passenger terminal in the fore-port has been issued. The Port also purchased land where it intends to build a terminal to ship second-hand cars to Antwerp. Furthermore, the Port monitored several projects: the creation of the Construction Village, a multifunctional and modular complex which combines a storage site, a show-room and offices, and the installation of an urban transshipment centre made up of a pallet transshipment and urban distribution hub designed to ease lasting and urban logistic solutions.

7.2 Value added

Direct value added in the port of Brussels rose sharply in 2015. The maritime cluster enjoyed a growth rate of 19.6% thanks to the port authority segment which returned to positive value added figures. Indeed, value added by the port authority was dragged down in 2014 by dredging work. The trend has been negative for the vast majority of other segments in the maritime cluster, not least among the shipping companies where one firm specialised in transport of cars to Africa suffered heavy losses.

Value added in the port of Brussels' non-maritime cluster grew by an exceptional 60%. Value added generated by trade was lifted by the higher turnover figures recorded by several firms active in the chemicals trade and by the arrival of a new company at the port site. Value added in industry was up by 5.9%. All companies in the chemicals industry saw their figures rise in 2015. In construction, a good many firms saw their value added drop. The other industries segment benefited from higher turnover at its largest company. Value added generated by other logistic services more than doubled: the biggest firm in this segment returned to profitability, after heavy losses in 2014, notably by cutting purchasing costs.

The strong rise in indirect value added is attributable almost exclusively to developments in the other logistic services segment.

Direct value added represented 1.0% of the GDP of the Brussels Capital Region and 0.2% of the Belgian GDP. Total value added accounted for 0.3% of the Belgian GDP.

7.3 Employment

There was a slight drop (-0.5%) in direct employment in the port of Brussels. Employment in the non-maritime cluster remained stable but was down by 5.9% in the maritime cluster. Job losses are concentrated in the cargo handling and shipping agents and forwarders segments, with the former hit by the reduction in the number of dockers and the latter by stoppage of a company.

Turning to the non-maritime cluster, employment expanded in trade and land transport but fell back in industry and in other logistic services. The growth of one trade sector company's business activity following the absorption of another company helped lift employment in this segment. The increase in jobs in the chemicals industry was down to just one company. In construction, on the other hand, a good many firms reduced their staff numbers. One food industry concern, facing falling sales and financial losses, cut back its workforce for the second consecutive year. The other industries segment benefited in particular from the development of an enterprise specialised in waste management as well as the establishment of a new company in the port zone. Employment in road transport also profited from the arrival of a newcomer in the port. The largest enterprise in the other logistic services segment reduced its staff working in the port zone but was not the only company to do so.

Indirect employment in the port of Brussels was up by 1.3%.

⁵⁷ Sources: www.portdebruxelles.be, *Annual Report 2015* of the Brussels Port Authority and press release 27 January 2017.

Direct employment represented 0.7% of the employment in the Brussels Capital Region and 0.1% of Belgian employment. Total employment accounted for 0.2% of Belgian employment.

7.4 Investment

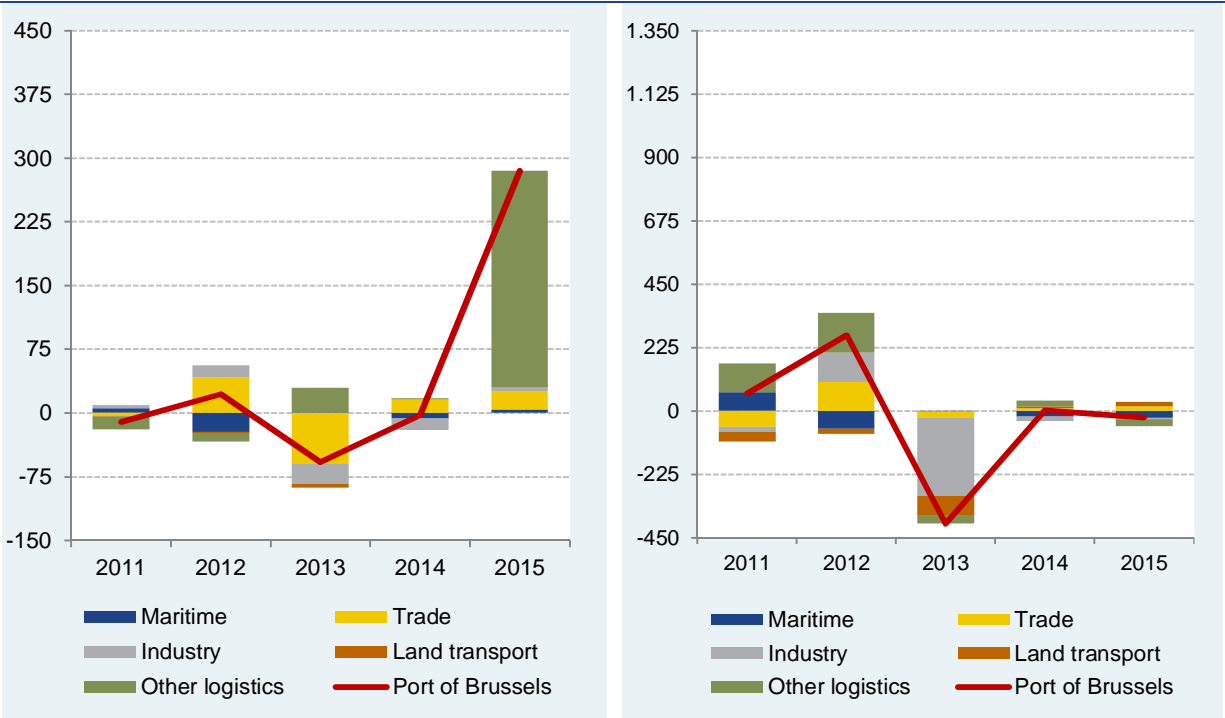
Direct investment in the maritime cluster of the port of Brussels was up by 50%. Investment in the shipping agents and forwarders segment was down, whereas the cargo handling and port authority segments recorded a rise. The cargo handling segment benefited from the strong growth of one company’s investment in its installations, machinery and tools. In the port authority segment, investments in the port of Brussels included a new, modern response boat, renovation of the viaducts of the TIR Logistics centre, and acquisition of a site for the development of a ro-ro terminal. In 2015, the creation of an urban transshipment centre was also completed.

In the non-maritime cluster, investment in industry, land transport and other logistic services declined, with only trade recording an increase. In trade, several firms invested in land and buildings. In construction, the fall reflects a trend in the port for this sector of activity, where several firms cut their investment. Firms in the food industry all increased their investment. In other industries, one firm’s major investment came to an end, bringing a return to normal for the segment. In other logistic services, the increase in investment in a number of firms was not enough to offset the reduction by the segment’s leading company.

Overall, investment in the port of Brussels, taking the maritime and non-maritime clusters together, increased by 3.8%.

CHART 16 CHANGE IN DIRECT VALUE ADDED
(in € million, current prices)

CHART 17 CHANGE IN DIRECT EMPLOYMENT
(FTE)



Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office).

TABLE 47 VALUE ADDED AT THE PORT OF BRUSSELS FROM 2010 TO 2015
(in € million - current prices)

Sectors	2010	2011	2012	2013	2014	2015	Share in 2015 (in p.c.)	Change from 2014 to 2015 (in p.c.)	Annual average change from 2010 to 2015 (in p.c.)
DIRECT EFFECTS	536.8	526.1	548.3	490.4	487.9	772.8	100.0	+ 58.4	+ 7.6
MARITIME CLUSTER	41.2	46.8	24.2	25.3	19.0	22.7	2.9	+ 19.6	- 11.2
Shipping agents and forwarders	32.0	35.4	16.6	14.6	13.2	12.9	1.7	- 2.1	- 16.6
Cargo handling	6.1	7.6	6.8	5.8	6.4	6.2	0.8	- 3.6	+ 0.2
Shipping companies	1.0	1.3	1.5	1.5	1.0	-2.5	-0.3	- 345.7	- 221.1
Shipbuilding and repair	0.0	0.0	0.0	0.0	0.1	0.0	0.0	- 100.0	n.
Port construction and dredging	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Fishing and fish industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Port trade	0.6	0.5	0.0	0.0	0.0	0.1	0.0	+ 707.0	- 36.1
Port authority	1.4	1.9	-0.9	3.1	-1.9	6.0	0.8	- 417.3	+ 34.0
Public sector	0.2	0.2	0.2	0.2	0.2	0.1	0.0	- 45.0	- 10.9
<i>Allocation (p.m.)</i>									
NON-MARITIME CLUSTER	495.6	479.3	524.1	465.1	468.9	750.1	97.1	+ 60.0	+ 8.6
TRADE	179.4	175.7	217.5	158.0	173.7	195.6	25.3	+ 12.6	+ 1.8
INDUSTRY.....	109.2	112.5	126.7	103.1	89.3	94.6	12.2	+ 5.9	- 2.8
Energy	1.5	1.3	1.5	1.1	0.7	1.6	0.2	+ 144.3	+ 1.1
Fuel production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Chemicals	7.1	5.6	9.8	8.5	4.9	9.2	1.2	+ 90.0	+ 5.3
Car manufacturing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Electronics	0.0	0.0	0.0	0.0	0.0	0.0	0.0	- 100.0	n.
Metalworking industry	4.7	5.8	6.3	7.3	8.1	7.8	1.0	- 4.3	+ 10.4
Construction	28.4	30.9	34.8	16.0	15.6	14.3	1.9	- 8.1	- 12.8
Food industry	15.2	16.9	14.8	13.8	14.8	12.9	1.7	- 12.6	- 3.2
Other industries	52.2	51.9	59.4	56.3	45.3	48.7	6.3	+ 7.5	- 1.4
LAND TRANSPORT	24.4	23.9	21.8	17.2	18.3	18.4	2.4	+ 0.4	- 5.5
Road transport	24.4	23.7	21.6	17.1	18.2	18.3	2.4	+ 0.4	- 5.6
Other land transport	0.1	0.2	0.2	0.1	0.1	0.1	0.0	+ 0.4	+ 0.9
OTHER LOGISTIC SERVICES ...	182.7	167.3	158.1	186.8	187.6	441.5	57.1	+ 135.4	+ 19.3
INDIRECT EFFECTS	385.2	379.6	404.5	348.8	341.6	471.8	-	+ 38.1	+ 4.1
MARITIME CLUSTER	32.7	36.7	23.8	23.1	19.1	21.1	-	+ 10.6	- 8.4
NON-MARITIME CLUSTER.....	352.6	342.9	380.7	325.7	322.5	450.7	-	+ 39.7	+ 5.0
TOTAL VALUE ADDED	922.1	905.8	952.8	839.2	829.5	1,244.6	-	+ 50.0	+ 6.2

Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office, and the Belgian IOTs).

The data necessary to estimate the indirect effects are published by the NAI with a low frequency and after a certain time lag. The indirect effects for the period 2010-2015 are based on IOT 2010 and SUT 2010, 2011, 2012 and 2013. The calculated indirect effects are approximations and should be interpreted with caution.

TABLE 48 VALUE ADDED TOP 10 AT THE PORT OF BRUSSELS IN 2015

Ranking	Company name	Sector
1	SOLVAY	Other logistic services
2	SOLVAY CHEMICALS INTERNATIONAL	Trade
3	INOVYN BELGIUM	Trade
4	PLASTIC OMNIUM ADVANCED INNOVATION AND RESEARCH	Other logistic services
5	INEOS SERVICES BELGIUM	Other logistic services
6	AQUIRIS	Other industries
7	SCANIA BELGIUM	Trade
8	CERES	Food industry
9	INOVYN TRADE SERVICES	Trade
10	BRUXELLES ENERGIE - BRUSSEL ENERGIE	Other industries

Source: NBB. The estimates for the multi-regional firms are based on surveys, annual reports and allocation formulas based on regional statistics. The top ten tables are based on information from annual accounts, surveys, annual reports and allocation formulas based on regional statistics. No individual figures are published as accurate data could not be obtained for all companies

TABLE 49 EMPLOYMENT AT THE PORT OF BRUSSELS FROM 2010 TO 2015
(FTE)

Sectors	2010	2011	2012	2013	2014	2015	Share in 2015 (in p.c.)	Change from 2014 to 2015 (in p.c.)	Annual average change from 2010 to 2015 (in p.c.)
DIRECT EFFECTS	4,250	4,313	4,580	4,181	4,182	4,159	100.0	- 0.5	- 0.4
MARITIME CLUSTER	424	492	429	426	405	381	9.2	- 5.9	- 2.1
Shipping agents and forwarders	198	253	187	192	167	152	3.6	- 9.3	- 5.2
Cargo handling	85	94	96	93	99	87	2.1	- 12.1	+ 0.5
Shipping companies	4	5	16	15	14	15	0.4	+ 2.1	+ 29.7
Shipbuilding and repair	0	0	0	0	0	0	0.0	n.	n.
Port construction and dredging	0	0	0	0	0	0	0.0	n.	n.
Fishing and fish industry	0	0	0	0	0	0	0.0	n.	n.
Port trade	5	6	0	0	0	1	0.0	n.	- 26.9
Port authority	130	132	127	123	122	125	3.0	+ 2.5	- 0.7
Public sector	3	3	3	3	3	2	0.0	- 33.3	- 7.8
<i>Allocation (p.m.)</i>									
NON-MARITIME CLUSTER	3,826	3,821	4,151	3,754	3,777	3,778	90.8	+ 0.0	- 0.3
TRADE	1,335	1,279	1,381	1,359	1,369	1,386	33.3	+ 1.2	+ 0.8
INDUSTRY	1,112	1,095	1,199	922	908	902	21.7	- 0.6	- 4.1
Energy	15	15	22	20	20	17	0.4	- 18.7	+ 1.5
Fuel production	0	0	0	0	0	0	0.0	n.	n.
Chemicals	41	40	70	74	69	79	1.9	+ 14.7	+ 14.2
Car manufacturing	0	0	0	0	0	0	0.0	n.	n.
Electronics	0	0	0	0	0	0	0.0	n.	n.
Metalworking industry	60	71	87	86	89	87	2.1	- 1.4	+ 7.7
Construction	497	507	549	263	247	238	5.7	- 3.9	- 13.7
Food industry	153	148	148	150	140	128	3.1	- 8.5	- 3.5
Other industries	346	314	324	328	343	354	8.5	+ 3.2	+ 0.5
LAND TRANSPORT	404	370	353	282	287	302	7.3	+ 5.1	- 5.7
Road transport	403	367	350	280	286	301	7.2	+ 5.2	- 5.7
Other land transport.....	1	3	3	2	1	1	0.0	+ 0.0	+ 0.0
OTHER LOGISTIC SERVICES	975	1,076	1,218	1,191	1,212	1,188	28.6	- 2.0	+ 4.0
INDIRECT EFFECTS	4,063	4,012	4,324	3,852	3,804	3,851	-	+ 1.3	- 1.1
MARITIME CLUSTER	476	552	606	549	543	521	-	- 4.0	+ 1.8
NON-MARITIME CLUSTER	3,587	3,460	3,718	3,303	3,261	3,331	-	+ 2.1	- 1.5
TOTAL EMPLOYMENT	8,314	8,325	8,905	8,032	7,986	8,011	-	+ 0.3	- 0.7

Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office, and the Belgian IOTs).

The data necessary to estimate the indirect effects are published by the NAI with a low frequency and after a certain time lag. The indirect effects for the period 2010-2015 are based on IOT 2010 and SUT 2010, 2011, 2012 and 2013. Indirect employment includes employees and self-employed persons, while direct employment mainly relates to employees. The calculated indirect effects are approximations and should be interpreted with caution.

TABLE 50 EMPLOYMENT TOP 10 AT THE PORT OF BRUSSELS IN 2015

Ranking	Company name	Sector
1	SOLVAY	Other logistic services
2	SCANIA BELGIUM	Trade
3	INOVYN BELGIUM	Trade
4	BRUSSELS PORT AUTHORITY	Port authority
5	CERES	Food industry
6	SUEZ R&R BE NORTH	Other industries
7	INEOS SERVICES BELGIUM	Other logistic services
8	PLASTIC OMNIUM ADVANCED INNOVATION AND RESEARCH	Other logistic services
9	BRUXELLES ENERGIE - BRUSSEL ENERGIE	Other industries
10	ZIEGLER	Road transport

Source: NBB. The estimates for the multi-regional firms are based on surveys, annual reports and allocation formulas based on regional statistics.

The top ten tables are based on information from annual accounts, surveys, annual reports and allocation formulas based on regional statistics. No individual figures are published as accurate data could not be obtained for all companies.

TABLE 51 INVESTMENT AT THE PORT OF BRUSSELS FROM 2010 TO 2015
(in € million - current prices)

Sectors	2010	2011	2012	2013	2014	2015	Share in 2015 (in p.c.)	Change from 2014 to 2015 (in p.c.)	Annual average change from 2010 to 2015 (in p.c.)
MARITIME CLUSTER	19.1	13.9	13.4	24.4	7.6	11.4	20.8	+ 50.0	- 9.8
Shipping agents and forwarders	9.7	7.7	7.0	13.1	0.6	0.5	0.8	- 21.5	- 45.6
Cargo handling	0.5	0.9	1.1	0.5	1.6	3.3	6.1	+ 108.0	+ 46.9
Shipping companies	0.0	0.0	0.8	0.0	0.0	0.0	0.1	n.	+ 136.0
Shipbuilding and repair	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Port construction and dredging	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Fishing and fish industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Port trade	0.0	0.0	0.0	0.0	0.0	0.1	0.1	n.	n.
Port authority	8.9	5.3	4.6	10.7	5.4	7.5	13.7	+ 39.6	- 3.2
Public sector	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
<i>Allocation (p.m.)</i>									
NON-MARITIME CLUSTER	46.9	38.2	38.6	44.2	45.4	43.5	79.2	- 4.0	- 1.5
TRADE	16.6	9.7	10.1	14.6	13.5	15.6	28.3	+ 15.0	- 1.3
INDUSTRY	19.0	8.2	9.2	6.6	8.9	7.8	14.2	- 12.1	- 16.4
Energy	0.1	0.0	0.1	0.0	0.1	0.3	0.5	+ 153.0	+ 37.1
Fuel production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Chemicals	0.4	0.5	0.8	0.4	0.4	0.4	0.7	- 4.4	+ 1.5
Car manufacturing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Electronics	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Metalworking industry	1.0	1.1	1.9	0.7	1.4	1.4	2.6	- 0.2	+ 7.6
Construction	2.1	2.9	2.9	2.7	2.2	1.8	3.3	- 16.8	- 3.1
Food industry	10.8	2.4	1.2	1.8	1.3	2.3	4.1	+ 72.9	- 26.8
Other industries	4.7	1.2	2.3	1.0	3.4	1.6	2.9	- 52.5	- 19.1
LAND TRANSPORT	1.6	4.6	2.2	2.4	3.5	2.6	4.8	- 25.6	+ 10.9
Road transport	1.5	4.4	2.1	2.3	3.5	2.6	4.7	- 25.6	+ 11.1
Other land transport	0.0	0.1	0.1	0.1	0.0	0.0	0.1	- 23.3	- 0.5
OTHER LOGISTIC SERVICES ...	9.7	15.8	17.2	20.5	19.4	17.6	32.0	- 9.6	+ 12.7
DIRECT INVESTMENT	66.0	52.1	52.0	68.5	53.0	55.0	100.0	+ 3.8	- 3.6

Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office and on surveys).

TABLE 52 INVESTMENT TOP 10 AT THE PORT OF BRUSSELS IN 2015

Ranking	Company name	Sector
1	SOLVAY	Other logistic services
2	BRUSSELS PORT AUTHORITY	Port authority
3	INOVYN BELGIUM	Trade
4	AMADEUS	Other logistic services
5	FRI-AGRA	Cargo handling
6	SHAAN	Trade
7	HOLDING DM	Other logistic services
8	FENEKO	Metalworking industry
9	SEBAHAT	Food industry
10	THEO EN-ET JOSEPH VAN DER AA	Trade

Source: NBB. The estimates for the multi-regional firms are based on surveys, annual reports and allocation formulas based on regional statistics. The top ten tables are based on information from annual accounts, surveys, annual reports and allocation formulas based on regional statistics. No individual figures are published as accurate data could not be obtained for all companies

8 BRIEF SUMMARY

The traffic growth recorded in 2013 and 2014 continued in 2015 (+1.7%). This increase is due to developments in the ports of Antwerp and Ghent. In all other ports, traffic declined, with the sharpest falls in Ostend and Zeebrugge.

The direct value added produced in the Belgian ports increased strongly in 2015 (+7.9%). Except for the Liège port complex, all the ports took part in that growth, with the ports of Antwerp and Brussels recording the sharpest increases. In the port of Antwerp, both the maritime cluster and the non-maritime cluster recorded growth of direct value added. The port of Ghent's increase in value added came from the non-maritime cluster. In contrast, direct value added in the ports of Ostend and Zeebrugge increased in the maritime cluster and declined in the non-maritime cluster. In the Liège port complex, direct value added showed a marked fall in the non-maritime cluster. In the port of Brussels, direct value added increased in both the maritime cluster and the non-maritime cluster. However, the biggest rise in absolute terms occurred in the other logistic services segment.

In contrast to value added, direct employment in the Belgian maritime ports declined by 1.3%, maintaining the downward trend of recent years. Unusually, all the ports are affected by that contraction; the Liège port complex felt the biggest impact with a 4% fall. Direct employment in the maritime cluster and in the non-maritime cluster declined in the ports of Antwerp, Ostend and Zeebrugge. Direct employment in the port of Ghent has dropped sharply in the maritime cluster but has risen slightly in the non-maritime cluster, though this is partly due to a transfer of staff between companies in two different segments. Direct employment in the Liège port complex was down slightly in the maritime cluster but fell sharply in the non-maritime cluster; the biggest job losses in terms of full-time equivalents occurred in the metalworking industry segment. Direct employment in the port of Brussels declined in the maritime cluster but remained stable in the non-maritime cluster.

Taking all ports together, direct investment declined by 8.1%. Three ports recorded a fall in their investment: Antwerp, Ghent and Ostend. The port of Antwerp had achieved a record level of investment in 2014, but even though there was a decline, the amount invested in 2015 was still very high. In the other three ports - Zeebrugge, Liège and Brussels – investment increased. Owing to the highly volatile nature of investment expenditure, the figures need to be interpreted with caution.

CHART 18 CHANGE IN DIRECT VALUE ADDED
(in € million, by volume)

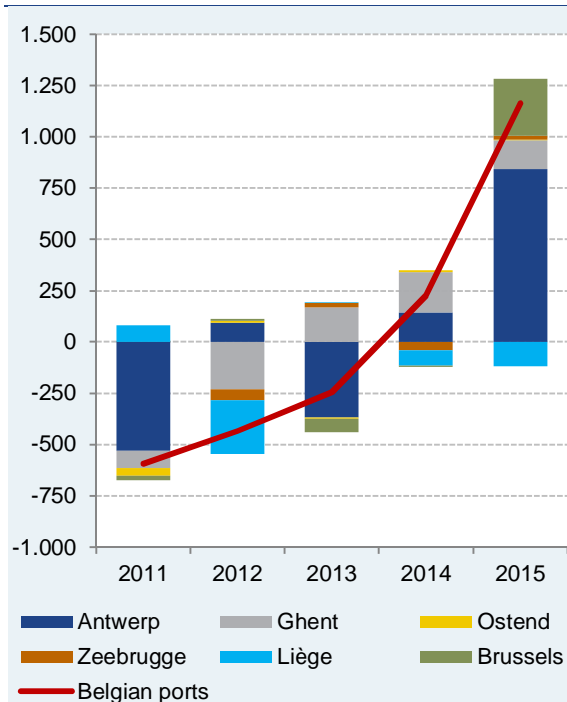
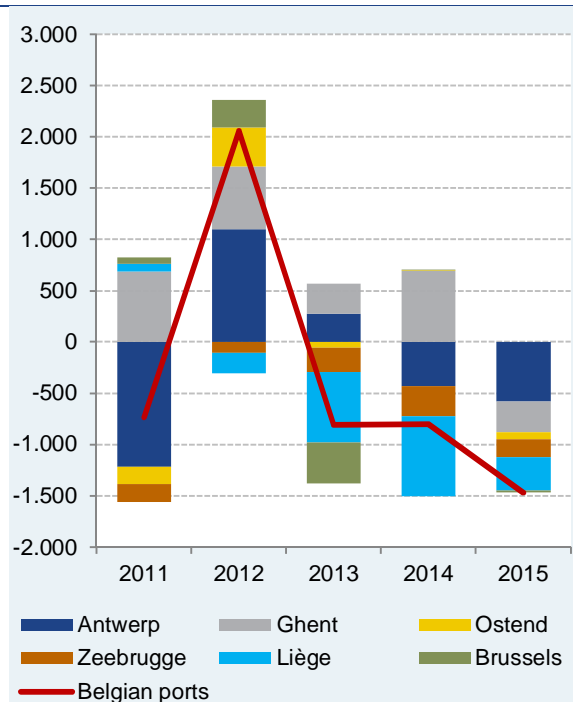


CHART 19 CHANGE IN DIRECT EMPLOYMENT
(FTE)



Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office).

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

CONVENTIONAL SIGNS

n.	the datum does not exist, is not available or is meaningless
p.c.	per cent
p.m.	pro memoria

ANNEX 1: LIST OF NACE-BEL BRANCHES ⁵⁸

TABLE 53 LIST OF NACE-BEL BRANCHES (NACE-BEL 2008)

SUT	NACE-BEL	Cluster	Sector	AN	GN	OO	ZB	LG	BR	Definition
03A	03110	MA	VI	*	*	*	*	*	*	Marine fishing
08A	08121	IN	AI	*		*	*			Quarrying of gravel
08A	08122	IN	AI	*	*					Quarrying of sand
08A	08910	IN	AI		*					Mining of chemical and fertiliser minerals
08A	08990	IN	AI						*	Other mining and quarrying n.e.c.
10A	10130	IN	VO		*					Production of meat and poultry meat products
10B	10200	MA	VI			*	*			Processing and preserving of fish, crustaceans and molluscs
10C	10320	IN	VO				*			Manufacture of fruit and vegetable juice
10D	10410	IN	VO	*	*					Manufacture of oils and fats
10E	10510	IN	VO	*	*	*	*	*	*	Operation of dairies and cheese making
10F	10610	IN	VO					*	*	Manufacture of grain mill products
10H	10810	IN	VO					*		Manufacture of sugar
10H	10820	IN	VO		*	*	*		*	Manufacture of cocoa, chocolate and sugar confectionery
10I	10890	IN	VO	*	*					Manufacture of other food products n.e.c.
10J	10910	IN	VO	*	*	*	*			Manufacture of prepared feeds for farm animals
11A	11010	IN	VO		*					Distilling, rectifying and blending of spirits
11A	11060	IN	VO	*						Manufacture of malt
13A	13100	IN	AI				*			Preparation and spinning of textile fibres
13B	13929	IN	AI	*		*				Manufacture of other textiles, except wearing apparel
16A	16100	IN	AI	*	*	*			*	Sawmilling and planing of wood
16A	16230	IN	AI	*	*			*	*	Manufacture of other builders' carpentry and joinery
16A	16240	IN	AI	*	*	*	*	*	*	Manufacture of wooden containers
17A	17120	IN	AI		*					Manufacture of paper and paperboard
17A	17210	IN	AI		*			*		Manufacture of corrugated paper and paperboard and of containers of paper and paperboard
17A	17290	IN	AI	*						Manufacture of other articles of paper and paperboard
18A	18120	IN	AI	*			*			Other printing
18A	18130	IN	AI	*						Pre-press and pre-media services
19A	19200	IN	PE	*	*	*	*	*	*	Manufacture of refined petroleum products
20A	20110	IN	CH	*	*				*	Manufacture of industrial gases
20A	20120	IN	CH	*	*					Manufacture of dyes and pigments
20B	20130	IN	CH	*	*	*		*	*	Manufacture of other inorganic basic chemicals
20A	20140	IN	CH	*	*	*	*	*	*	Manufacture of other organic basic chemicals
20A	20150	IN	CH	*	*		*	*		Manufacture of fertilisers and nitrogen compounds
20A	20160	IN	CH	*	*					Manufacture of plastics in primary forms
20A	20170	IN	CH	*						Manufacture of synthetic rubber in primary forms
20C	20200	IN	CH	*		*		*		Manufacture of pesticides and other agrochemical products
20D	20300	IN	CH	*	*		*	*		Manufacture of paints, varnishes and similar coatings, printing ink and mastics
20F	20520	IN	CH		*					Manufacture of glues
20F	20590	IN	CH	*	*			*		Manufacture of other chemical products n.e.c.
21A	21201	IN	CH			*				Manufacture of medicines
22A	22110	IN	CH	*						Manufacture of rubber tyres and tubes; retreating and rebuilding of rubber tyres
22A	22190	IN	CH		*		*			Manufacture of other rubber products
22B	22210	IN	CH	*	*			*	*	Manufacture of plastic plates, sheets, tubes and profiles
22B	22220	IN	CH	*	*			*		Manufacture of plastic packing goods
22B	22290	IN	CH	*	*	*		*		Manufacture of other plastic products
23A	23110	IN	CS				*			Manufacture of flat glass
23A	23120	IN	CS		*		*		*	Shaping and processing of flat glass
23B	23322	IN	CS					*		Manufacture of tiles and construction products, in baked clay
23C	23510	IN	CS	*	*	*	*	*	*	Manufacture of cement
23C	23520	IN	CS					*		Manufacture of lime and plaster
23D	23610	IN	CS		*		*	*		Manufacture of concrete products for construction purposes
23D	23620	IN	CS	*						Manufacture of plaster products for construction purposes
23D	23630	IN	CS	*	*	*	*	*	*	Manufacture of ready-mixed concrete

⁵⁸ The nomenclature in this list is in accordance with the NACE-BEL revision having taken place in 2008 (Rev.2).

TABLE 53 (continued) LIST OF NACE-BEL BRANCHES (NACE-BEL 2008)

SUT	NACE-BEL	Cluster	Sector	AN	GN	OO	ZB	LG	BR	Definition
23D	23640	IN	CS	*						Manufacture of mortars
23D	23700	IN	CS		*	*				Cutting, shaping and finishing of stone
23D	23990	IN	CS	*	*	*			*	Manufacture of other non-metallic mineral products n.e.c.
24A	24100	IN	ME	*	*	*	*	*	*	Manufacture of basic iron and steel and of ferro-alloys
24A	24200	IN	ME						*	Manufacture of tubes, pipes, hollow profiles and related fittings, of steel
24B	24310	IN	ME						*	Cold drawing of bars
24B	24510	IN	ME		*	*				Casting of iron
25A	25110	IN	ME	*	*		*	*		Manufacture of metal structures and parts of structure
25A	25120	IN	ME	*	*			*	*	Manufacture of doors and windows of metal
25A	25290	IN	ME	*	*	*		*		Manufacture of other tanks, reservoirs and containers of metal
25A	25300	IN	ME	*	*			*		Manufacture of steam generators, except central heating hot water boilers
25A	25501	IN	ME				*	*		Forging of metal
25B	25610	IN	ME	*	*		*	*	*	Treatment and coating of metals
25B	25620	IN	ME	*	*	*	*	*		Machining
25C	25930	IN	ME				*			Manufacture of wire products, chain and springs
25C	25940	IN	ME		*	*				Manufacture of fasteners and screw machine products
25C	25999	IN	ME	*	*		*	*	*	Manufacture of other fabricated metal articles
26A	26110	IN	MP	*				*		Manufacture of electronic valves and tubes and other electronic components
26B	26400	IN	MP	*	*		*			Manufacture of consumer electronics
26C	26510	IN	MP			*	*			Manufacture of instruments and appliances for measuring, testing and navigation
27A	27110	IN	MP	*	*	*	*	*	*	Manufacture of electric motors, generators and transformers
27A	27120	IN	MP		*		*			Manufacture of electricity distribution and control apparatus
27B	27900	IN	MP	*				*		Manufacture of other electrical equipment
28A	28110	IN	ME		*					Manufacture of engines and turbines, except aircraft, vehicle and cycle engines
28A	28120	IN	ME	*					*	Manufacture of fluid power equipment
28A	28220	IN	ME	*	*					Manufacture of lifting and handling equipment
28A	28250	IN	ME	*		*	*	*	*	Manufacture of non-domestic cooling and ventilation equipment
28A	28295	IN	ME		*					Manufacture of filter equipment
29A	29100	IN	AU	*	*	*	*	*	*	Manufacture of motor vehicles
29B	29201	IN	AU	*	*					Manufacture of bodies (coachwork) for motor vehicles
29B	29202	IN	AU	*			*			Manufacture of trailers and semi-trailers and caravans
29B	29320	IN	AU	*	*			*		Manufacture of other parts and accessories for motor vehicles
30A	30110	MA	SB	*	*				*	Building of ships and floating structures
30B	30200	IN	AI					*		Manufacture of railway locomotives and rolling stock
32B	32990	IN	AI				*			Other manufacturing n.e.c.
33A	33110	IN	ME	*	*		*			Repair of fabricated metal products
33A	33120	IN	ME	*	*	*	*		*	Repair of machinery
33A	33150	MA	SB	*	*	*	*	*	*	Repair and maintenance of ships and boats
33A	33170	IN	ME	*			*			Repair and maintenance of other transport equipment
35A	35110	IN	EN	*	*	*	*	*	*	Production of electricity
35B	35220	IN	EN				*			Distribution of gaseous fuels through mains
37A	37000	IN	AI	*	*		*	*	*	Sewerage
38A	38110	IN	AI	*	*		*	*	*	Collection of non-hazardous waste
38A	38219	IN	AI	*	*	*	*	*	*	Other processing and disposal of non-hazardous waste
38B	38310	IN	AI	*		*	*	*	*	Dismantling of wrecks
38B	38321	IN	AI	*	*			*		Sorting of non-hazardous waste for recycling
38B	38322	IN	AI	*	*	*	*	*	*	Recovery of waste metal
38B	38323	IN	AI	*		*	*	*	*	Recovery of inert waste
39A	39000	IN	AI	*	*					Remediation activities and other waste management services
41A	41102	IN	CS	*	*	*	*	*	*	Non-residential development projects
41A	41203	IN	CS	*	*	*	*	*	*	Construction of other non-residential buildings
42A	42110	IN	CS	*	*	*	*	*	*	Construction of roads and motorways
42A	42130	IN	CS			*				Construction of bridges and tunnels
42A	42211	IN	CS		*					Construction of water and gas supply networks
42A	42219	IN	CS	*						Civil engineering works relating to fluids n.e.c.
42A	42220	IN	CS	*	*					Construction of utility projects for electricity and telecommunications
42A	42911	MA	DR	*		*	*			Dredging

TABLE 53 (continued) LIST OF NACE-BEL BRANCHES (NACE-BEL 2008)

SUT	NACE-BEL	Cluster	Sector	AN	GN	OO	ZB	LG	BR	Definition
42A	42919	MA	DR	*	*	*	*	*	*	Construction of water projects, except dredging
43A	43110	IN	CS	*	*	*	*	*	*	Demolition
43A	43120	IN	CS	*	*	*	*	*	*	Site preparation
43B	43211	IN	CS	*	*	*	*	*	*	Electrical engineering installations in buildings
43B	43221	IN	CS	*	*	*	*	*	*	Plumbing
43B	43222	IN	CS	*	*	*	*	*	*	Heat and air conditioning installation
43B	43291	IN	CS	*	*					Insulation work activities
43C	43320	IN	CS	*	*	*	*		*	Joinery installation
43C	43341	IN	CS	*	*	*	*	*	*	Painting of buildings
43D	43910	IN	CS	*	*	*	*	*	*	Roofing activities
43D	43999	IN	CS	*	*	*	*	*	*	Other specialised construction activities
45A	45111	CO	CO	*	*	*	*	*	*	Wholesale of cars and light motor vehicles
45A	45191	CO	CO	*	*		*		*	Wholesale of other motor vehicles (> 3,5 ton)
45A	45193	CO	CO			*				Retail sale of other motor vehicles (> 3,5 ton)
45A	45202	CO	CO	*			*		*	Maintenance and general repair of motor vehicles
45A	45205	CO	CO	*			*	*	*	Tyre specialists
45A	45310	CO	CO	*	*	*	*	*	*	Wholesale trade and intermediary of motor vehicle parts and accessories
46A	46120	CO	CO	*	*				*	Agents involved in the sale of fuels, ores, metals and industrial chemicals
46A	46140	CO	CO	*				*	*	Agents involved in the sale of machinery, industrial equipment, ships and aircraft
46A	46170	CO	CO	*	*	*	*	*		Agents involved in the sale of food, beverages and tobacco
46A	46180	CO	CO	*	*				*	Agents specialised in the sale of other particular products
46A	46190	CO	CO	*	*		*	*	*	Agents involved in the sale of a variety of goods
46A	46216	CO	CO	*	*		*	*	*	Wholesale of animal feeds and agricultural raw materials
46A	46319	CO	CO	*			*		*	Wholesale of fruit and vegetables, except potatoes
46A	46332	CO	CO	*	*					Wholesale of edible oils and fats
46A	46349	CO	CO	*	*		*		*	Wholesale of alcoholic and other beverages, general assortment
46A	46381	CO	CO	*	*	*	*		*	Wholesale of fish, crustaceans and molluscs
46A	46389	CO	CO	*	*	*	*		*	Wholesale of other food n.e.c.
46A	46391	CO	CO	*			*		*	Non-specialised wholesale of frozen food
46A	46392	CO	CO	*	*	*	*		*	Non-specialised wholesale of non-frozen food, beverages and tobacco
46A	46412	CO	CO	*	*		*		*	Wholesale trade in household textiles and bedding
46A	46423	CO	CO	*	*		*	*	*	Wholesale trade in clothing other than work clothes and underwear
46A	46431	CO	CO	*	*		*	*	*	Wholesale trade in domestic electrical appliances and audio and video equipment
46A	46442	CO	CO	*	*	*	*	*	*	Wholesale of cleaning materials
46A	46460	CO	CO	*			*	*	*	Wholesale of pharmaceutical goods
46A	46499	CO	CO	*	*	*	*	*	*	Wholesale of other household goods n.e.c.
46A	46510	CO	CO	*	*		*		*	Wholesale of computers, computer peripheral equipment and software
46A	46620	CO	CO	*	*	*	*	*	*	Wholesale of machine tools
46A	46630	CO	CO	*	*	*	*	*	*	Wholesale of mining, construction and civil engineering machinery
46A	46693	CO	CO	*	*	*	*	*	*	Wholesale trade in electrical equipment, including installation materials
46A	46694	CO	CO	*					*	Wholesale trade in lifting and transport equipment
46A	46695	CO	CO	*			*		*	Wholesale trade in pumps and compressors
46A	46699	CO	CO	*	*	*	*	*	*	Wholesale of other machinery and equipment n.e.c.
46B	46710	CO	CO	*	*	*	*	*	*	Wholesale of solid, liquid and gaseous fuels and related products
46A	46720	CO	CO	*	*		*	*	*	Wholesale of metals and metal ores
46A	46731	CO	CO	*	*	*	*	*	*	Wholesale of construction materials, general assortment
46A	46732	CO	CO	*	*	*	*	*	*	Wholesale of wood
46A	46733	CO	CO	*	*		*		*	Wholesale trade in wallpapers, paints and household textiles
46A	46741	CO	CO	*	*		*		*	Wholesale of hardware
46A	46751	CO	CO	*	*	*	*	*	*	Wholesale of industrial chemical products
46A	46769	CO	CO	*	*	*	*		*	Wholesale trade in other intermediate products n.e.c.
46A	46772	CO	CO		*		*	*	*	Wholesale trade in iron and steel scrap and non-ferrous scrap metals
46A	46900	MA	CP	*	*	*	*	*	*	Non-specialised wholesale trade
47A	47230	CO	CO			*	*		*	Retail sale of fish, crustaceans and molluscs in specialised stores
47B	47300	CO	CO	*	*	*	*	*	*	Retail sale of automotive fuel in specialised stores

TABLE 53 (continued) LIST OF NACE-BEL BRANCHES (NACE-BEL 2008)

SUT	NACE-BEL	Cluster	Sector	AN	GN	OO	ZB	LG	BR	Definition
47A	47410	CO	CO	*	*	*	*			Retail sale of computers, peripheral units and software in specialised stores
47A	47521	CO	CO		*			*	*	Specialist retail trade in building materials and DIY supplies, general range
47A	47781	CO	CO		*	*	*		*	Specialist retail trade in fuels other than road fuel
49A	49200	TR	TP	*	*	*	*	*	*	Freight rail transport
49C	49410	TR	WE	*	*	*	*	*	*	Freight transport by road, except removal
49C	49420	TR	WE	*	*				*	Removal services
49C	49500	TR	WE	*				*		Transport via pipelines
50A	50200	MA	RE	*	*	*	*	*	*	Sea and coastal freight water transport
50B	50400	MA	RE	*	*	*	*	*	*	Inland freight water transport
52A	52100	MA	GO	*	*	*	*	*	*	Warehousing and storage, including refrigerating
52A	52210	LO	AD	*			*		*	Service activities incidental to land transportation
52A	52220	MA	GO	*	*	*	*	*	*	Service activities incidental to water transportation
52A	52241	MA	GO	*	*	*	*	*	*	Cargo handling in sea ports
52A	52249	MA	GO	*	*	*	*	*	*	Cargo handling except sea ports
52A	52290	MA	SE	*	*	*	*	*	*	Other transportation support activities
53A	53200	TR	WE	*	*				*	Other postal and courier activities
62A	62010	LO	AD	*	*	*	*	*	*	Computer programming activities
66A	66210	LO	AD	*	*		*		*	Risk and damage evaluation
66A	66220	LO	AD	*	*	*	*	*	*	Activities of insurance agents and brokers
66A	66290	LO	AD		*				*	Other activities auxiliary to insurance and pension funding
68B	68203	LO	AD	*	*	*	*	*	*	Renting and operating of own or leased non residential real estate, except lands
68A	68321	LO	AD	*	*	*	*		*	Management of residential real estate on a fee or contract basis
68A	68322	LO	AD	*	*	*		*	*	Management of non-residential real estate on a fee or contract basis
69A	69201	LO	AD	*			*		*	Accountants and fiscal advisors
70A	70100	LO	AD	*	*	*	*	*	*	Activities of head offices
70A	70220	LO	AD	*	*	*	*	*	*	Business and other management consultancy activities
71A	71121	LO	AD	*	*	*	*	*	*	Engineering activities and related technical consultancy, except surveyor
71A	71209	LO	AD	*	*		*		*	Other technical testing and analysis
72A	72190	LO	AD	*	*	*			*	Other research and experimental development on natural sciences and engineering
73A	73110	LO	AD	*	*		*		*	Advertising agencies
77A	77120	LO	AD	*	*	*	*		*	Renting and leasing of trucks
77C	77320	LO	AD	*	*			*	*	Renting and leasing of construction and civil engineering machinery and equipment
77C	77340	LO	AD	*					*	Renting and leasing of water transport equipment
77C	77399	LO	AD	*	*		*	*	*	Renting and leasing of other machinery, equipment and tangible goods
80A	80100	LO	AD	*	*	*	*		*	Private security activities
81A	81100	LO	AD	*	*				*	Combined facilities support activities
81B	81220	LO	AD	*	*	*	*	*	*	Other building and industrial cleaning activities
81B	81290	LO	AD	*	*		*		*	Other cleaning activities
82A	82110	LO	AD	*	*			*	*	Combined office administrative service activities
82A	82920	LO	AD	*	*		*	*	*	Packaging activities
82A	82990	LO	AD	*	*	*	*	*	*	Other business support service activities n.e.c.
84B	84220	MA	PU	*	*	*	*		*	Defence activities

Source:NBB.

The asterisks denote the presence of the activity branches in the ports for at least one year over the period 2010 - 2015. For instance the branch 52241 (Cargo handling in sea ports) is or was present in the six ports, at the same time or at least one year in each of these ports between 2010 and 2015, while the branch 30110 (Building of ships and floating structures) was only present in Antwerp, Ghent and Liège.

Legend:

<u>Port code</u>	<u>Port</u>	<u>Port code</u>	<u>Port</u>
AN	Port of Antwerp	ZB	Port of Zeebrugge
GN	Port of Ghent	LG	Liège port complex
OO	Port of Ostend	BR	Port of Brussels

<u>Cluster code</u>	<u>Cluster definition</u>	<u>Sector code</u>	<u>Sector definition</u>
MA	Maritime	SE	Shipping agents and forwarders
		GO	Cargo handling
		RE	Shipping companies
		SB	Shipbuilding and repair
		DR	Port construction and dredging
		VI	Fishing and fish industry
		CP	Port trade
		HB	Port authority
		PU	Public sector
CO	Trade	CO	Trade
IN	Industrie	EN	Energy
		PE	Fuel production
		CH	Chemicals
		AU	Car manufacturing
		MP	Electronics
		ME	Metalworking industry
		CS	Construction
		VO	Food industry
		AI	Other industries
TP	Land transport	WE	Road transport
		TP	Other land transport
LO	Other logistic services	AD	Other services

ANNEX 2: DEFINITION OF THE FINANCIAL RATIOS

RATIO	ITEMS USED IN THE ANNUAL ACCOUNTS
RETURN ON EQUITY AFTER TAX	
Numerator (N)	9904
Denominator (D).....	10/15
Ratio = $N / D * 100$	
Conditions for calculating the ratio :12-month financial year and item 10/15 > 0	
LIQUIDITY IN THE BROAD SENSE	
Numerator (N)	3+40/41+50/53+54/58+490/1
Denominator (D).....	42/48+492/3
Ratio = N / D	
Conditions for calculating the ratio: none	
SOLVENCY	
Numerator (N)	10/15
Denominator (D).....	10/49
Ratio = $N / D * 100$	
Conditions for calculating the ratio: none	

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National Bank of Belgium
Limited liability company
RLP Brussels – Company's number: 0203.201.340
Registered office: boulevard de Berlaimont 14 – BE-1000 Brussels
www.nbb.be

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Layout: Analysis and Research Group
Cover: NBB AG – Prepress & Image

Published in June 2017