ECONOMIC IMPORTANCE OF THE BELGIAN PORTS :

Flemish maritime ports, Liège port complex and the port of Brussels – Report 2013

Working Paper Document

by Frank Van Nieuwenhove

June 2015 No 283

National Bank OF BELGIUM
Eurosystem

Editorial Director
Jan Smets, Governor of the National Bank of Belgium

Statement of purpose:

The purpose of these working papers is to promote the circulation of research results (Research Series) and analytical studies (Documents Series) made within the National Bank of Belgium or presented by external economists in seminars, conferences and conventions organised by the Bank. The aim is therefore to provide a platform for discussion. The opinions expressed are strictly those of the authors and do not necessarily reflect the views of the National Bank of Belgium.

Orders

For orders and information on subscriptions and reductions: National Bank of Belgium,
Documentation - Publications service, boulevard de Berlaimont 14, 1000 Brussels

Tel +32 2 221 20 33 - Fax +32 2 21 30 42

The Working Papers are available on the website of the Bank: https://www.nbb.be

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 centres facilitating the commodity flow.

This update paper[1] 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 2008 - 2013, with an emphasis on 2013. 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 2012 - 2013 are summarised in the table on the next page.

The overall decline in maritime traffic seen in the Flemish maritime ports in general in 2012, and in each individual port, was reversed in 2013, but only thanks to growth in Antwerp; the other three ports (Ghent, Ostend and Zeebrugge) experienced a further decrease. In terms of value added, the opposite occurred: a general increase, except in Antwerp, resulting in a slight rise for these ports as a whole. The employment picture was variable, but there was expansion overall, matching the growth of value added, namely 0.3 %. Finally, investment in the Flemish ports declined overall, totalling 3.2 % less in 2013 than in the previous year.

In the ports of Liège and Brussels, cargo traffic and employment both declined in 2013. After the sharp fall in 2012, value added at the port of Liège edged upwards again, but in Brussels it recorded a significant decline[2]. Conversely, investment in Liège was down again, following the surge in 2012, whereas the port of Brussels saw a substantial increase.

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 2013.

This report is available for download at the following address https://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 Mathys C. (June 2014), Economic importance of the Belgian ports: Flemish maritime ports, Liège port complex and the port of Brussels - Report 2012, NBB, Working Paper No. 260 (Document series). All figures have been updated. This paper is available at the following address: https://www.nbb.be > Publications > Working papers > 2014 – No. 260.

[2] The decline in Brussels was due mainly to some specific circumstances (see 7.2).

Ports		Value added (current prices)		Employment		Investment (current prices)		Cargo traffic	
		€ million	Change 2012-2013 (in p.c.)	FTE	Change 2012-2013 (in p.c.)	€ million	Change 2012-2013 (in p.c.)	x 1,000 tonnes	Change 2012-2013 (in p.c.)
ANTWERP	Direct	9,844.5	- 2.1	61,496	+ 0.3	2,314.3	- 0.7		
	Indirect	9,129.8	+ 0.7	88,218	+ 1.8				
	TOTAL	**18,974.2**	**- 0.8**	**149,714**	**+ 1.2**	**2,314.3**	**- 0.7**	**190,972**	**+ 3.7**
GHENT	Direct	3,417.9	+ 6.7	27,368	+ 1.3	424.7	- 7.4		
	Indirect	3,285.9	+ 6.0	33,353	+ 3.3				
	TOTAL	**6,703.7**	**+ 6.4**	**60,720**	**+ 2.4**	**424.7**	**- 7.4**	**25,956**	**- 1.3**
OSTEND	Direct	492.1	+ 1.0	5,156	- 0.7	75.9	- 22.0		
	Indirect	470.7	- 2.7	5,375	- 2.3				
	TOTAL	**962.8**	**- 0.8**	**10,532**	**- 1.5**	**75.9**	**- 22.0**	**1,819**	**- 43.1**
ZEEBRUGGE	Direct	988.1	+ 3.8	9,720	- 1.9	212.3	- 11.9		
	Indirect	871.7	+ 10.4	10,495	+ 0.1				
	TOTAL	**1,859.9**	**+ 6.8**	**20,215**	**- 0.9**	**212.3**	**- 11.9**	**42,832**	**- 1.6**
FLEMISH	Direct	14,742.6	+ 0.3	103,739	+ 0.3	3,027	- 3.2		
MARITIME	Indirect	12,774.9	+ 2.2	129,261	+ 1.8				
PORTS	**TOTAL .....**	**27,517.5**	**+ 1.2**	**233,000**	**+ 1.1**	**3,027.1**	**- 3.2**	**261,578**	**+ 1.7**
LIÈGE	Direct	1221.8	+ 0.4	8,905	- 7.3	211.0	- 13.2		
	Indirect	1312.6	+ 2.8	13,214	- 4.4				
	TOTAL	**2534.4**	**+ 1.6**	**22,119**	**- 5.6**	**211.0**	**- 13.2**	**14,947**	**- 9.3**
BRUSSELS	Direct	481.9	- 10.7	4,079	- 9.6	67.6	+ 34.5		
	Indirect	412.0	- 12.0	4,238	- 13.9				
	TOTAL	**894.0**	**- 11.3**	**8,317**	**- 11.8**	**67.6**	**+ 34.5**	**4,324**	**- 6.1**
BELGIAN	**Direct .....**	**16,446.3**	**- 0.1**	**116,724**	**- 0.7**	**3,305.7**	**- 3.3**		
PORTS	**Indirect .....**	**13,962.2**	**+ 1.6**	**142,444**	**+ 0.8**				
	TOTAL	**30,408.5**	**+ 0.7**	**259,168**	**+ 0.1**	**3,305.7**	**- 3.3**	**280,849**	**+ 0.9**

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.

Corresponding author:

NBB, Microeconomic Information department, e-mail: microeconomic.analysis@nbb.be

This paper was produced 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, especially Mrs Claude Mathys, as well as the colleagues from the National and Regional Accounts service for their input. Special thanks go to Messrs Rudy Trogh, head of department at the NBB, and George van Gastel, head of service at the NBB, for their support and their comments on this paper.

Contents

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 cover the period 2008 - 2013, but only the main developments recorded in the period 2012 - 2013 are discussed in detail. The number of annexes is limited to:

- the detailed social balance sheet for 2013
- 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.

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.

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 2008 - 2013 concern the study of the following variables:

- value added at current prices[3]: 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 concerned, indirect employment also includes self-employed workers.
- investment at current prices[4]: this corresponds to the tangible fixed assets acquired during the year, including capitalised production costs[5].

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, labour 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 Bank[6]. 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 parts[7], 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.

---

[3] 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.

[4] Unless otherwise stated, investment is always indicated at current prices in the text. 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.

[5] Decommissioning of assets is not taken into account.

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

[7] 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 analyse 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 Office[8] and from the statistics produced by the National Accounts Institute (NAI[9]). The most recent annual accounts for the 2013 financial year included in this study were filed with the Central Balance Sheet Office in February 2015[10]. The data necessary to estimate the indirect effects up to 2013, 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 remained unchanged. For more information, see the 2004 report published in June 2006[11].

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. Nevertheless, some data needed for the implementation of this study are still in NACE-BEL 2003 as for instance the input-output table for 2005 and the supply and use table for 2007. The new National Accounts aggregates on the contrary exist only in NACE-BEL 2008.

In December 2013 the National Accounts Institute published a supply and use table and an input-output table for 2010[12]. The 2005 input-output table and the 2007 supply and use table were used to calculate the indirect effects for the year 2008, while the 2010 input-output table and the 2010 supply and use table were used to produce estimates for the years 2009 to 2013. This caused a break in some of the series between 2008 and 2009. In most cases, that break is due to changes in the structure of the intermediate consumption of the branches, or in the distribution of the branches between the various activities following the switch from NACE-BEL 2003 to NACE-BEL 2008. It therefore seems necessary to reiterate that more than ever, 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 2012 may differ slightly 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.

[8] A service of the National Bank's Microeconomic Information Department (See http://www.centralbalancesheetoffice.be).

[9] 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 – Directorate General of Statistics and Economic Information), 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 2010.

[10] 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 February 2015, that percentage was negligible and the impact on the figures is minimal.

[11] 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: https://www.nbb.be > Publications > Working papers > 2006 – No. 86.

[12] See http://www.plan.be > Publications > Themes > Input-output tables, and https://www.nbb.be > Publications > Statistical publications > National accounts > Supply and use tables (only in Dutch and French).

International environment

Although world economic growth in 2013 was somewhat higher than in 2012, it was still modest at +3.3 %. The pace of growth slowed in the emerging countries and accelerated slightly in the advanced economies. Overall, growth in most of the large economies was in line with the previous year's figure: in the United States it came to +2.2 %, in Japan +1.6 % and in the euro area it remained negative at -0.5 %. China's growth was still impressive at +7.8 %, although here too the figures did not equal those recorded at the start of the decade.

World trade in goods and services expanded by 3.4 % in 2013, slightly exceeding the 2012 figure and roughly equalling the growth of global GDP. World seaborne trade was up by a similar amount at +3.8 %, but this growth was almost one percentage point lower than in the previous year. It was generated mainly by dry cargo, and more particularly bulk commodities, up by 5.5 %. The growth of containerised transport came to +4.6 %, which was also above the general average. Asia still accounted for the lion's share of world seaborne trade in both loading and unloading of shipments.

As a result of the modest global economic growth, hesitant demand and persistent excess capacity in most maritime segments, freight rates – and more especially the rates for dry bulk and tanker markets – reached a ten-year low in 2013.

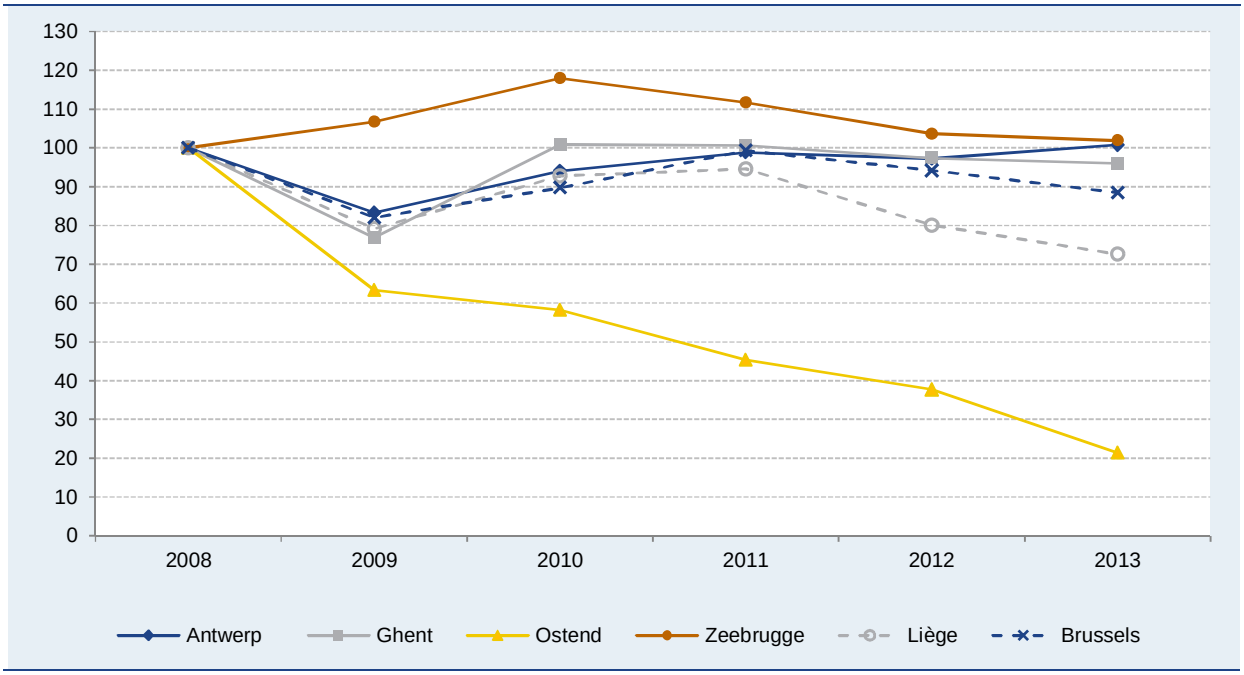
The pressure on freight rates and the generally difficult market conditions are leading to ever larger and more efficient container ships, such as the Maersk "Triple E" class ("Economy of Scale, Energy efficient and Environmentally improved"), which can carry up to 18,000 TEU, and to international cooperation. In 2013 the three largest container shipping companies, Maersk Line, MSC and CMA-CGM, announced a joint service on the route between Asia, Europe and North America. However, this alliance, named P3, was vetoed by the Chinese authorities, leaving a scaled-down version without CMA-CGM, under the name of 2M. From 2015 onwards, the rearrangement of services to Europe will have considerable implications for traffic in the Belgian maritime ports (see below).

1 ECONOMIC IMPORTANCE OF THE BELGIAN PORTS

1.1 Traffic in the Belgian ports

In 2012, all six Belgian ports without exception recorded a decline in traffic. The combined traffic of the four Flemish maritime ports was also down by 3.0 %. In 2013 that global figure was up again by 1.7 % to a total of 261.6 million tonnes, but this growth was attributable solely to the port of Antwerp which was the only Belgian maritime port to achieve a positive result in 2013, with a new historical record of 191.0 million tonnes (+3.7 %). In that year the other ports saw their traffic decline further in varying degrees, and it was almost halved in Ostend (-43.1 %). This port, where cargo traffic has been declining since 2009, had to contend with the closure of the ro-ro service to and from Ramsgate (United Kingdom) in April 2013, which meant the loss of 1.3 million tonnes.

CHART 1 **CARGO TRAFFIC IN THE BELGIAN PORTS**
(indices 2008 = 100)



Sources: *Port Authorities*.

In 2013, container traffic in the Flemish ports - the largest segment with a 47.1 % share - was steady in terms of volume (in TEU) but was down by 1.3 % against the previous year in terms of tonnage. Although as already mentioned, Antwerp was the only port to record growth overall in that year, container traffic was down by 1.7 % there, while Zeebrugge saw a small 0.5 % increase in that traffic category. The two ports together represented almost the whole of this cargo category. It should be noted that 2013 was the third consecutive year with an overall decline in the tonnage handled, down by 6 million tonnes against the peak year of 2010.

Conventional, i.e. non-containerised general cargo[13] , was also 3.4 % down against 2012. All Flemish ports recorded a small to moderate decline, except for Zeebrugge that saw 23.1 % growth. It is noteworthy that three of the four ports enjoyed growth in this category of cargo over the past ten years, except for Antwerp where traffic declined by 7 million tonnes.

Roll-on/roll-off traffic was down by 6.3 % in 2013, but that figure conceals considerable divergences. Ghent recorded growth of 16.0 %, traffic in Zeebrugge was more or less unchanged, and Antwerp saw a decline of 4.9 %, but at Ostend this traffic virtually disappeared (down by 1.3 million tonnes or -75.3 %), as a result of termination of the Ramsgate service.

[13] Mainly iron and steel, fruit, paper, wood and machinery.

Except for a slight fall in 2012, liquid bulk[14] has recorded an upward trend since 2005, and 2013 was no exception with growth of 23.6 %. Nonetheless, that growth is attributable entirely to the port of Antwerp, where new tank storage terminals came into service.

Finally, dry bulk[15] is the cargo category featuring the steepest decline: -14.2 % in the year under review, with each of the four Flemish sea ports recording a fall, the largest in Antwerp (-24.4 %). This downward trend had also begun more than three years ago, one factor being the sluggishness of the global economy.

For the Flemish ports as a whole, another point worth mentioning is the growing importance of short sea shipping[16] : in 2013 it reached a record of 136.7 million tonnes, or 52 % of total maritime traffic.

The ports of Liège and Brussels also suffered from the global decline in 2013: traffic there was down by 9.3 and 6.1 % respectively; in the latter case this mainly concerned building materials and containers. In Liège it was the container segment that bucked the general trend with growth of 11 %.

For 2014 the picture differs little from that in the previous year: overall, traffic through the four Flemish maritime ports increased again, this time by 2.8 % to a total of 268.9 million tonnes, outperforming the pre-crisis year of 2008 for the first time. However, that growth was again confined to the port of Antwerp, which achieved another record with 4.2 % growth (199.0 million tonnes). Ghent and Zeebrugge saw a slight decline, while Ostend suffered a further 21.3 % slump in traffic (owing to the loss of all its ro-ro traffic). Conversely, the ports of Liège and Brussels achieved growth of +0.3 % and +2.7 % respectively.

TABLE 1 **MARITIME TRAFFIC IN THE FLEMISH PORTS IN 2013**
(in thousands of tonnes, unless otherwise stated)

	Antwerp	Ghent	Ostend	Zeebrugge	Total	Change from 2012 to 2013 (in p.c.)	Share in 2013 (in p.c.)
Containers	102,326	587	0	20,413	123,326	- 1.3	47.1
Change 2012 - 2013 (p.c.)	*- 1.7*	*- 5.1*	*n.*	*+ 0.5*			
Roll-on/roll-off[17]	4,562	1,972	442	12,543	19,520	- 6.3	7.5
Conventional general cargo[18]	10,105	3,158	74	1,674	15,011	- 3.4	5.7
Liquid bulk	59,533	3,871	56	6,916	70,376	+ 23.6	26.9
Dry bulk	14,446	16,367	1,247	1,285	33,345	- 14.2	12.7
TOTAL 2013	190,972	25,956	1,819	42,832	261,578	+ 1.7	100.0
Change 2012 - 2013 (p.c.)	*+ 3.7*	*- 1.3*	*- 43.1*	*- 1.6*	*+ 1.7*		
TOTAL 2014 (p.m.)	199,014	25,889	1,431	42,548	268,883		
Change 2013 - 2014 (p.c.)	*+ 4.2*	*- 0.3*	*- 21.3*	*- 0.7*	*+ 2.8*		

Source: Port authorities.

In recent years further steps were also taken to strengthen cooperation between the Flemish ports. In April 2013 the Flemish Minister of Mobility and Public Works, the four Flemish sea ports and the Flemish port associations signed an agreement aimed at efficient cooperation in order to reinforce the international competitiveness of the Flemish ports. There are frequent calls for more specific cooperation arrangements in the Flanders Port Area.

[14] Crude oil, petroleum products, liquid gas, chemicals and fruit juice (this last item in Ghent and Zeebrugge)

[15] Ores, coal, gravel, sand and cereals.

[16] Short sea shipping encompasses the movement of cargo and passengers mainly by sea along a coast, without crossing an ocean.

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

[18] The term "general cargo" comprises the following categories: containerised goods, ro-ro and conventional general cargo.

1.2 Competitive position of the Belgian ports

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 range[19]. In 2013 the share of the four Flemish ports in this range crept up again from 22.6 to 22.9 %. For the four Flemish ports together, growth came to 1.7 % compared to only 0.6 % for the range, mainly as a result of Rotterdam's rather poor performance.

In 2013 **the port of Rotterdam**'s position was more or less the same as in 2012: traffic was down by 1 million tonnes, a 0.2 % decline. This was the result of strong growth in dry bulk (+14.2 %, mainly in coal) and a decline in liquid bulk (-3.5 %, mainly in crude oil) and containers (-3.3 %). In this last segment the port lost market share to Antwerp, but particularly to Hamburg, which recorded strong growth. In 2014 the overall expansion in traffic came to just 1.0 %, though this still led to a record of 444.7 million tonnes. Liquid bulk declined further, but container volume was up again by 5.2 %, although Rotterdam lagged a little behind its nearest competitors, Antwerp and Hamburg.

In contrast, the **port of Amsterdam** outpaced the average growth for the range, and handled a record volume of traffic in both 2013 and 2014. Bulk accounts for 95 % of the total traffic. In 2013, mineral oil products declined in favour of coal and agribulk; in 2014 there was a slight increase in both dry and liquid bulk. In that year, container traffic was down by 11 %, but this segment is of marginal importance in Amsterdam.

Zeeland Seaports, where container traffic is also negligible, recorded a decline of 1 million tonnes in 2013, applicable to all categories other than liquid bulk. The year 2014 brought a growth revival, and almost equalled the 2011 record, with bulk as the driving force, but for Vlissingen and Terneuzen their key segment - break bulk[20] - was down again slightly for the second successive year. At the beginning of 2015, Vlissingen took over Chiquita's banana traffic from Antwerp, representing around 170,000 tonnes per annum.

As already stated, the **port of Hamburg** has recorded strong growth in container traffic in recent years: +4.4 % in 2013, when all three of its direct competitors, Rotterdam, Antwerp and Bremen, saw a decline; Hamburg recorded further growth of +6.2 % in 2014, slightly outperforming the said competitors. In that year the port also handled a record volume of 145.7 million tonnes.

Although the **port of Bremen** recorded a 6.3 % decline in traffic in 2013 (with a fall of 5-6 % in containers, conventional cargo and bulk), in that year it was still the largest European port for vehicles, handling 2.2 million cars, just short of the 2012 record. Provisional figures for 2014 indicate a further 2.9 % increase in vehicle traffic, but also a further decline overall to 78.3 million tonnes. September 2012 saw the opening of Jade Weser Port in Wilhelmshaven, a joint project by the federal Länder Bremen and Lower Saxony. This container terminal can take the largest categories of ships and has been developing slowly since 2014.

In 2013, the **port of Dunkirk** was down to its lowest level since 1999, with an 8.5 % decline. Owing to the closure of a British power station, coal traffic dropped by almost 4 million tonnes, causing an 11 % fall in dry bulk, but liquid bulk and ro-ro were also down by 11 % and 6 % respectively. The only bright spot was container traffic which was up by 13 % in volume thanks to new shortsea services and good performance on links with Africa. In 2014, 8 % growth almost restored the port to its 2012 level; all segments shared in this growth except for liquid bulk.

Finally, in 2013 the **port of Le Havre** recorded the strongest growth of all ports in the range except Hamburg: +5.8 % to 67.2 million tonnes, and this applied to all segments. After that it more or less marked time in 2014, though container traffic was up by a further 4.9 %.

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

[20] Break bulk is bulk goods packed and shipped as individual items.

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

(in millions of tonnes, unless otherwise stated[21])

Port	2008	2009	2010	2011	2012	2013	2014 (p.m.)	Annual average change from 2008 to 2013 (in p.c.)	Change from 2012 to 2013 (in p.c.)	Average share in the range from 2008 to 2013 (in p.c.)	Share in 2013 (in p.c.)
Antwerp	189.4	157.8	178.2	187.2	184.1	191.0	199.0	+ 0.2	+ 3.7	16.3	16.7
Ghent	27.0	20.8	27.3	27.2	26.3	26.0	25.9	- 0.8	- 1.3	2.3	2.3
Ostend	8.5	5.4	4.9	3.8	3.2	1.8	1.4	- 26.5	- 43.1	0.4	0.2
Zeebrugge	42.0	44.9	49.6	47.0	43.5	42.8	42.5	+ 0.4	- 1.6	4.0	3.8
Total Flemish ports	***267.0***	***228.8***	***260.0***	***265.2***	***257.2***	***261.6***	***268.9***	***- 0.4***	***+ 1.7***	***23.1***	***22.9***
Amsterdam[22]	75.8	73.4	72.7	74.9	77.1	78.5	79.7	+ 0.7	+ 1.9	6.8	6.9
Bremen	74.5	63.1	68.9	80.6	84.0	78.8	78.3	+ 1.1	- 6.3	6.7	6.9
Dunkirk	57.7	45.0	42.7	47.5	47.6	43.6	47.0	- 5.5	- 8.5	4.3	3.8
Hamburg	140.4	110.4	120.0	132.2	130.9	139.0	145.7	- 0.2	+ 6.2	11.6	12.2
Le Havre	80.5	73.8	70.2	67.6	63.5	67.2	67.6	- 3.6	+ 5.8	6.3	5.9
Rotterdam	421.1	387.0	430.2	434.6	441.5	440.5	444.7	+ 0.9	- 0.2	38.3	38.6
Zeeland Seaports[23]	33.3	28.8	33.0	35.5	34.0	33.0	35.1	- 0.2	- 2.8	3.0	2.9
Total for the 11 ports	*1,150.3*	*1,010.3*	*1,097.6*	*1,138.0*	*1,135.8*	*1,142.1*	*1,166.9*	*- 0.1*	*+ 0.6*		
Total world traffic	*8,229.5*	*7,858.0*	*8,408.9*	*8,784.3*	*9,196.7*	*9,548.2*		*+ 3.0*	*+ 3.8*		
Share for the 11 ports in world traffic (in p.c.)	14.0	12.9	13.1	13.0	12.4	12.0					

Sources: For the traffic in the range: port authorities; for world traffic (tonnes loaded): Unctad, *Review of Maritime Transport 2014*.

TABLE 3 **CARGO TRAFFIC BY SHIP IN THE PORTS OF DUISBURG, PARIS, LIÈGE AND BRUSSELS**

(in thousands of tonnes, unless otherwise stated)

Port	2008	2009	2010	2011	2012	2013	2014 (p.m.)	Annual average change from 2008 to 2013 (in p.c.)	Change from 2012 to 2013 (in p.c.)
Duisburg[24]	51,000	34,500	49,200	50,400	38,200	47,200	n.	- 1.5	+ 23.6
Paris	19,778	20,214	20,865	22,338	22,600	21,200	20,100	+ 1.4	- 6.2
Liège[25]	20,574	16,287	19,095	19,455	16,477	14,947	14,999	-6.2	- 9.3
Brussels	4,889	4,011	4,385	4,855	4,606	4,324	4,439	- 2.4	- 6.1

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

In 2012, cargo traffic at the leading West European inland ports was stable or down against the previous year. That trend continued in 2013, except for Duisburg, which almost regained its 2011 level with a notable revival. Container traffic recorded 16 % growth at the nine available terminals, further reinforcing Duisburg's position as the world's largest inland port. Traffic at the port of Liège was hit by the closure of warm-phase activities at ArcelorMittal, although container transhipment expanded strongly. Brussels faced a decline in both container and building materials traffic. At the port of Paris, faltering economic activity also led to a fall in the transportation of building materials which make up a large proportion of

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

[22] 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.

[23] Zeeland Seaports = Vlissingen and Terneuzen

[24] The traffic considered here is the total cargo handled in all Duisburg Ports, i.e. taking the Duisport Group and the private company ports together.

[25] The traffic considered here is the total of the cargo handled on the public and the private quays.

the overall traffic. In 2014, the ports of Liège and Brussels again achieved a small increase, but Paris saw a further decline.

1.3 Direct and indirect value added in the Belgian ports

The Belgian economy experienced two weak years in 2012 and 2013: GDP by volume was up by only 0.1 and 0.3 % respectively. Between the pre-crisis year - 2008 - and 2013 growth came to +1.8 %, or an average of 0.4 % per annum[26]. However, these results were still better than those of the Belgian ports as a whole. Following a decline in 2012, direct value added by volume was down by a further 1.5 % in 2013; since 2008, the loss of value added therefore amounted to 9.0 %, or an average of -1.9 % per annum.

If the value added created indirectly is also taken into account, then the decline in 2013 was a more moderate -0.8 % by volume (average -1.5 % over the period 2008-2013). However, these figures need to be taken solely as a guide, because indirect value added is calculated on the basis of various estimates or even approximations. Indeed, in the absence of detailed data, the last year has to be estimated on the basis of an approximation. Moreover, the use of two input-output tables (2005 and 2010) and two supply and use tables leads to a break in the series between years 2008 and 2009. More than ever, the reader must keep in mind that indirect effects must be treated with caution, as an indicator of the importance of the ports for the national and local economy rather than an absolute value.

The contrast between the picture for the Belgian economy as a whole and what is happening in the Belgian ports has also caused a steady erosion of the significance of those ports for the national economy. In 2008 they jointly accounted for 5.0 % of Belgium's GDP (and 9.1 % including indirect value added); five years later that share had fallen to 4.2 and 7.7 % respectively.

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

	2008	2009	2010	2011	2012	2013	Relative share in 2013 (in p.c.)	Change from 2012 to 2013 (in p.c.)	Annual average change from 2008 to 2013 (in p.c.)
1. DIRECT EFFECTS	**16,922.2**	**15,101.9**	**16,725.8**	**16,500.0**	**16,455.1**	**16,446.3**	**100.0**	**- 0.1**	**- 0.6**
Antwerp	10,210.1	8,789.4	9,996.8	9,702.0	10,055.0	9,844.5	59.9	- 2.1	- 0.7
Ghent	3,256.5	3,094.6	3,376.8	3,367.0	3,203.9	3,417.9	20.8	+ 6.7	+ 1.0
Ostend	470.0	454.3	498.3	472.4	487.3	492.1	3.0	+ 1.0	+ 0.9
Zeebrugge	1,027.0	927.9	962.5	980.7	951.8	988.1	6.0	+ 3.8	- 0.8
Liège	1,415.4	1,309.3	1,352.7	1,451.0	1,217.4	1,221.8	7.4	+ 0.4	- 2.9
Brussels	543.2	526.4	538.8	527.0	539.6	481.9	2.9	- 10.7	- 2.4
Outside the ports (p.m)[27]	*109.3*	*92.7*	*125.7*	*148.2*	*149.2*	*138.9*	**-**	*- 6.9*	*+ 4.9*
2. INDIRECT EFFECTS	**13,803.3**	**12,281.9**	**12,945.6**	**13,670.3**	**13,743.6**	**13,962.2**	**-**	**+ 1.6**	**+ 0.2**
TOTAL VALUE ADDED	**30,725.5**	**27,383.8**	**29,671.4**	**30,170.3**	**30,198.7**	**30,408.5**	**-**	**+ 0.7**	**- 0.2**

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 year 2008 are based on IOT 2005 and SUT 2007. The indirect effects for the period 2009-2013 are based on IOT 2010 and SUT 2010. The use of different sources causes a break in the time series. The calculated indirect effects are approximations and should be interpreted with caution.

[26] Source: National Accounts Institute (2015), *National accounts – Regional accounts 2013,* National Bank of Belgium, February 2015.

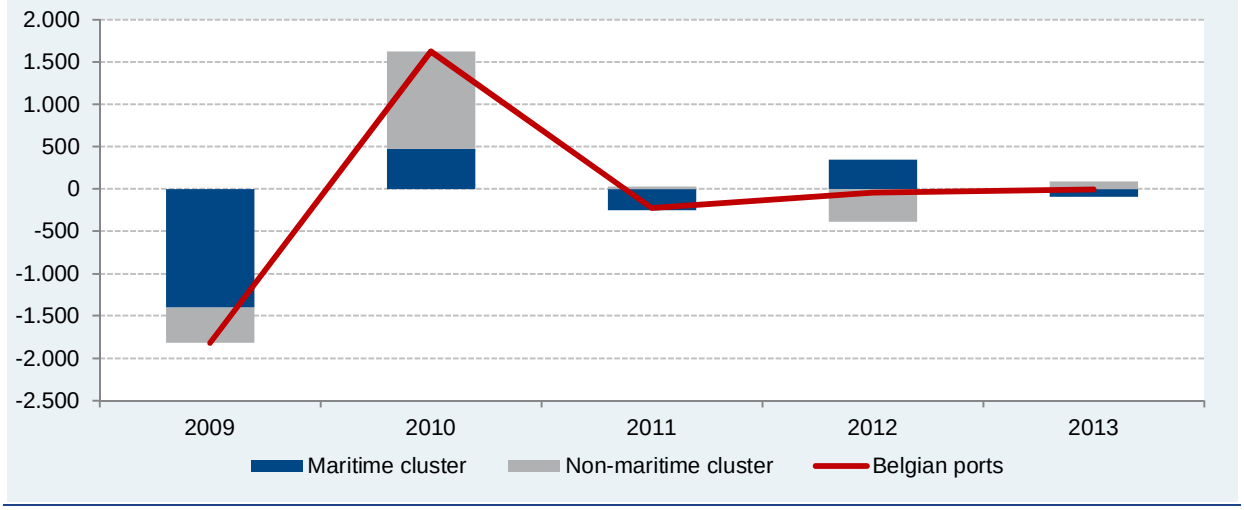
[27] The firms in certain maritime branches may be selected from anywhere in the country, since their definition is sufficient in itself to link them to the port activity. These are branches directly connected with the activity of the seaports. Their results are therefore allocated among the Flemish 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.)".

Over the period considered, there has been a marked divergence between the two clusters: while the maritime cluster declined by an annual average of 3.8 % between 2008 and 2013 (from here onwards always at current prices), the non-maritime cluster recorded positive growth (averaging +0.8 %). The maritime/non-maritime ratio of 31.1/68.9 % in 2008 had therefore already changed to 26.3/73.7 % in 2013. The 2013 results are in line with that trend: -2.2 % against 2012 for the maritime cluster, +0.7 % for the non-maritime segment and -0.1 % for the six ports as a whole. In relative terms, the biggest rise between 2012 and 2013 was in electronics (particularly in Zeebrugge), car manufacturing (in Ghent, because Antwerp's value added in this sector was down slightly) and the food industry (in all ports except Brussels). The sharpest decline concerned the shipping companies (most of them based in Antwerp), where the positive operating result for 2012 had almost entirely disappeared a year later.

In 2013, all Flemish sea ports saw an increase in their value added except for Antwerp. However, without the said decline in the operating profit of shipping companies, value added here would have been more or less stable. The strongest growth was recorded in the port of Ghent, thanks to excellent results in car manufacturing and the metalworking industry. An outlier was the port of Brussels, where value added was down sharply as a result of the specific situation concerning a few individual firms (see 7.2). In Antwerp and Ostend, the maritime cluster represented 32 to 37 % of the port's total value added, and in Zeebrugge the figure was actually 55 %. In contrast, Ghent and Liège are typical industrial ports with figures of only 10 and 2 % respectively; in Brussels, too, the maritime cluster represents only 6 %, but the remainder comprises predominantly trade and service activities.

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).

1.4 Direct and indirect employment in the Belgian ports

Employment in the Belgian ports displays a pattern very similar to that of value added. Belgian domestic employment (in FTEs) grew by 1.6 % over the period 2008-2013 (an average of +0.3 % per annum)[28], while direct employment in the Belgian ports as a whole contracted by 5.6 % over the same period (an average of -1.2 % per annum). Nevertheless, since the crisis year of 2009, indirect job creation has slowly but steadily increased so that the decline in total port employment came to only 4.2 % (average -0.9 % per annum). However, the reader should keep in mind that indirect effects must be treated with caution, as an indicator of the importance of the ports for the national and local economy rather than an absolute value. Both domestic employment and total direct employment in the six ports declined in 2013 compared to 2012 (by -0.2 and -0.7 % respectively), but the indirect effects offset that fall so that total employment in the ports still increased very slightly by 0.1 %. The share of port jobs in total Belgian employment came to 2.9 % for direct employment and 6.5 % for total employment in 2013 (3.1 and 6.9 % respectively in 2008).

[28] Source: National Accounts Institute (2015), *Regional accounts 2013.*

TABLE 5 **EMPLOYMENT IN THE BELGIAN PORTS**

(FTE)

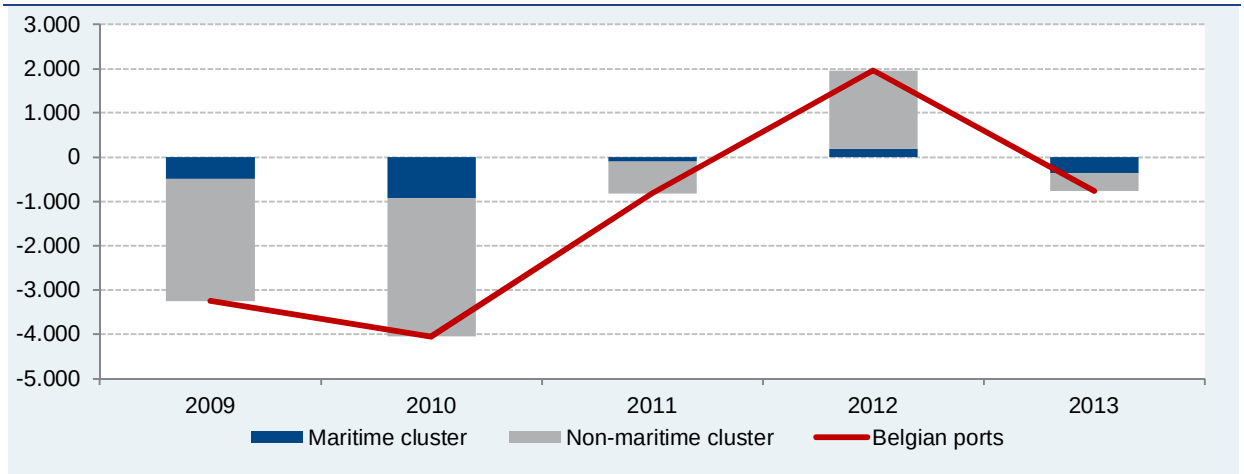
	2008	2009	2010	2011	2012	2013	Relative share in 2013 (in p.c.)	Change from 2012 to 2013 (in p.c.)	Annual average change from 2008 to 2013 (in p.c.)
1. DIRECT EFFECTS	**123,709**	**120,464**	**116,417**	**115,603**	**117,562**	**116,724**	**100.0**	**- 0.7**	**- 1.2**
Antwerp	64,463	63,278	61,462	60,129	61,322	61,496	52.7	+ 0.3	- 0.9
Ghent	27,498	26,618	25,796	26,521	27,021	27,368	23.4	+ 1.3	- 0.1
Ostend	4,888	5,004	4,947	4,803	5,191	5,156	4.4	- 0.7	+ 1.1
Zeebrugge	11,047	10,715	10,179	9,996	9,908	9,720	8.3	- 1.9	- 2.5
Liège	11,203	10,450	9,729	9,801	9,606	8,905	7.6	- 7.3	- 4.5
Brussels	4,609	4,398	4,303	4,353	4,513	4,079	3.5	- 9.6	- 2.4
Outside the ports (p.m.)[29]	*2,553*	*2,546*	*2,426*	*2,253*	*2,267*	*2,151*	-	*- 5.1*	*- 3.4*
2. INDIRECT EFFECTS	**146,926**	**133,774**	**137,446**	**138,799**	**141,333**	**142,444**	-	**+ 0.8**	**- 0.6**
TOTAL EMPLOYMENT	**270,635**	**254,237**	**253,864**	**254,402**	**258,895**	**259,168**	-	**+ 0.1**	**- 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 year 2008 are based on IOT 2005 and SUT 2007. The indirect effects for the period 2009-2013 are based on IOT 2010 and SUT 2010. The use of different sources causes a break in the time series. The calculated indirect effects are approximations and should be interpreted with caution.

Compared to value added, the employment growth figures for the clusters display less divergence. Both exhibit a downward trend: on average, -0.8 % per annum for the maritime cluster and -1.3 % per annum for the non-maritime cluster (and -1.2 % for the ports as a whole). Over the five years considered, there has therefore been little change in the ratio between the two: 33.6/66.4 % in 2008 and 34.1/65.9 % in 2013. Between 2012 and 2013 the trend was fairly uniform: maritime -0.9 %, non-maritime -0.6 % and -0.7 % for all activities together. In the sectors recording growth in 2013 (such as fuel production and port construction and dredging), the number of additional persons employed was usually small, though in car manufacturing the increase was 211 FTEs (all in Ghent). The biggest job losses occurred in shipbuilding (-112 FTEs, mainly because of a bankruptcy in Antwerp) and in road transport (-250 FTEs as a result of bankruptcies and restructurings in Antwerp, Zeebrugge and Brussels).

CHART 3 **CHANGE IN DIRECT EMPLOYMENT**

(FTE)



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

Employment declined in all ports except Ghent and Antwerp in 2013. In Ghent, this was mainly attributable to car manufacturing, while in Antwerp the small increase was due largely to the establishment of a large business in the port area. The port of Brussels saw a decline on a par with the

[29] 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 (see also footnote 27).

fall in value added; the reason for it was the same, though other factors were also involved (see 7.3). It is notable that in Liège, though value added was stable, employment recorded a substantial fall; that is due almost entirely to the metalworking industry. The importance of the maritime cluster in the various ports in regard to employment is comparable to its importance for value added: 62 % in Zeebrugge, 40 to 45 % in Antwerp and Ostend, around 11 % in Ghent and Brussels, and 3 % in Liège.

1.5 Investment in the Belgian ports

In the past five years, investment in the Belgian ports has never matched the level achieved in 2008 before the eruption of the economic crisis. On the contrary, throughout that period it has declined year-on-year: in 2013 the volume of investment was 43 % lower than in 2008. Moreover, this trend has been evident in all six ports to varying degrees: -62 % in Ostend, -55 % in Liège, -40 to 45 % in Antwerp and Ghent, -26 % in Zeebrugge and -18 % in Brussels. In 2013 it was down by 3.3 % (at current prices), but in the non-maritime cluster investment has been rising for the past two years, and in 2013 it increased by 6.0 %. Over the five-year period, investment in this cluster declined by an average of 4.7 % per annum, compared to -13.8 % per annum for the maritime segment. Its share in total investment in the ports therefore increased from 45.9 % in 2008 to 58.4 % in 2013.

TABLE 6 **INVESTMENT IN THE BELGIAN PORTS**[30]

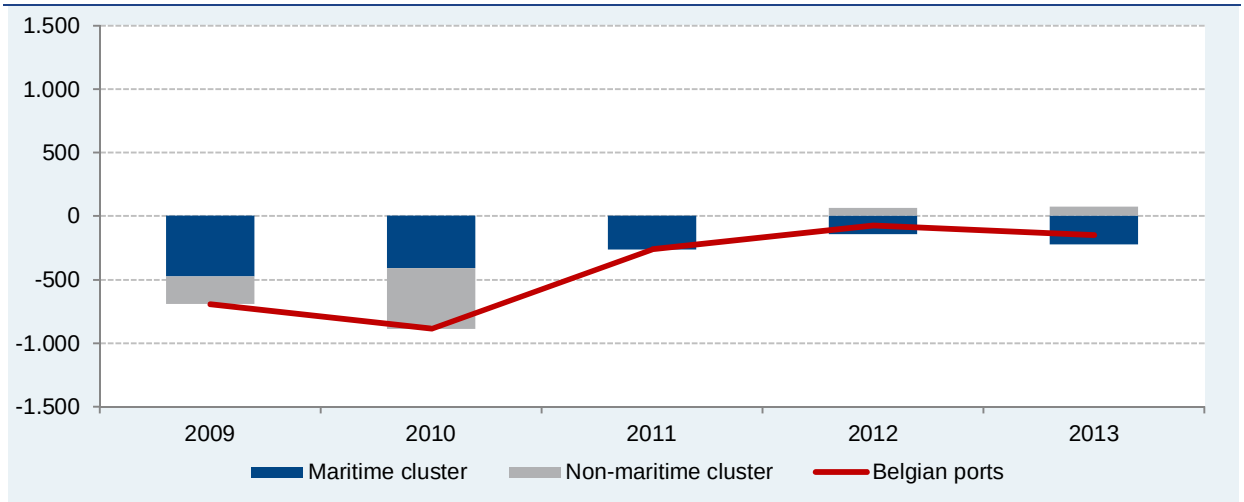
(in € million - current prices)

	2008	2009	2010	2011	2012	2013	Relative share in 2013 (in p.c.)	Change from 2012 to 2013 (in p.c.)	Annual average change from 2008 to 2013 (in p.c.)
Antwerp	3,666.7	3,098.4	2,559.7	2,423.4	2,329.8	2,314.3	70.0	- 0.7	- 8.8
Ghent	713.6	606.0	504.6	441.7	458.8	424.7	12.8	- 7.4	- 9.9
Ostend	185.6	124.6	100.9	91.6	97.3	75.9	2.3	- 22.0	- 16.4
Zeebrugge	264.3	184.4	336.2	278.3	241.1	212.3	6.4	- 11.9	- 4.3
Liège	434.7	566.3	189.7	208.0	243.0	211.0	6.4	- 13.2	- 13.5
Brussels	76.0	66.0	66.8	53.3	50.3	67.6	2.0	+ 34.5	- 2.3
Outside the ports (p.m.)[31]...	*214.3*	*253.2*	*480.0*	*309.6*	*213.5*	*202.4*	-	*- 5.2*	*- 1.1*
DIRECT INVESTMENT	**5,340.9**	**4,645.7**	**3,757.9**	**3,496.3**	**3,420.3**	**3,305.7**	-	**- 3.3**	**- 9.1**

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

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).

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

[31] 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 (see also footnote 27).

In 2013 there was a surge in the amounts invested in fuel production and chemicals, in both cases in the port of Antwerp. In contrast, there was a significant decrease in cargo handling (in both Antwerp and Zeebrugge, but not in Ghent), in car manufacturing (in Ghent) and in the metalworking industry (in Liège). The overall decline in 2013 occurred in all ports except Brussels, where investment was up by 34.5 %. In Antwerp investment was more or less steady thanks to the efforts in the fuel and chemical sectors. The largest fall was seen in the port of Ostend.

1.6 Demography of the Belgian ports

TABLE 7 **DEMOGRAPHY OF THE BELGIAN PORTS FOR THE PERIOD 2008 - 2013**
(Number of firms)

Sectors	Population[32]					Death		
	2008	Migrate-In	Migrate-Out	Missing account	2013	Restructuring	Termination of activities	Failure
MARITIME CLUSTER	**1,668**	**538**	**482**	**38**	**1,686**	**67**	**205**	**139**
Shipping agents and forwarders	613	274	191	19	677	33	72	48
Cargo handling	356	91	80	5	362	25	41	10
Shipping companies	376	75	110	5	336	3	55	38
Shipbuilding and repair	123	66	49	6	134	2	17	28
Port construction and dredging	13	2	1	0	14	0	1	0
Fishing and fish industry	136	15	32	3	116	4	16	12
Port trade	44	14	19	0	39	0	3	3
Port authority	7	1	0	0	8	0	0	0
Public sector	n.	n.	n.	n.	n.	n.	n.	n.
NON-MARITIME CLUSTER	**1,994**	**1,180**	**931**	**30**	**2,213**	**158**	**227**	**209**
TRADE	613	256	260	9	600	43	68	67
INDUSTRY	599	254	203	5	645	34	54	48
Energy	14	18	4	1	27	1	1	0
Fuel production	11	1	1	0	11	0	0	1
Chemicals	92	19	13	0	98	0	5	4
Car manufacturing	24	2	9	0	17	1	5	0
Electronics	17	5	3	0	19	0	1	2
Metalworking industry	123	43	37	2	127	8	11	9
Construction	176	117	83	2	208	11	14	22
Food industry	30	4	6	0	28	1	3	0
Other industries	112	45	47	0	110	12	14	10
LAND TRANSPORT	185	80	75	3	187	13	13	28
Road transport	183	78	75	3	183	12	13	28
Other land transport	2	2	0	0	4	1	0	0
OTHER LOGISTIC SERVICES	597	590	393	13	781	68	92	66
TOTAL	**3,662**	**1,718**	**1,413**	**68**	**3,899**	**225**	**432**	**348**

Migrate-In = New in population after 2008.
Migrate-Out = Left the population in the period 2009-2013. This category includes the category 'Death', the enterprises which moved their acitivities 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).

The table entitled 'Demography of the Belgian Ports' gives an overview of changes in the sample population used for the study for the period 2008-2013. 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 organisations or branches of foreign firms. The two columns, entitled '2008' and '2013', 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 2008 and 2013 respectively. The 'Migrate-out' column lists firms that left the population during the period 2009 - 2013. Obviously, it is the other way round for the 'Migrate-in' column. There are several explanations justifying exclusion from the survey population from one year to the next: the company has moved, changed activity, or merged with another firm already established in the port (in which case, only the surviving company continues to

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

feature in the study). The last three columns in the table give the number of firms affected by corporate restructuring (absorption, merger, takeover or split), by termination of activities or by failure. The firms included in the 'Migrate-in' column can either be newly established firms (after 2008) 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 2013 and which, as far as we know, should not be excluded from the study[33].

Over the period of the study as a whole, the number of firms joining the population exceeded the number leaving; that was true for both clusters. Net migration was higher in the non-maritime cluster, so that its share in the total number of firms increased slightly from 54.4 % in 2008 to 56.8 % five years later. This cluster also experienced a higher turnover than the maritime cluster[34], and that was particularly marked in other logistic services, energy and construction. Turnover is low in port construction and dredging, fishing and fish industry, the food industry, chemicals and – unsurprisingly – fuel production, where firms seldom migrate in or out. Almost three in ten firms (27.5 %) in the 2008 population had ceased to exist five years later, owing to merger, acquisition, termination of activities or bankruptcy. In other logistic services and shipbuilding and repair, that figure increased to 38 %. The latter sector also does badly in regard to bankruptcies: 23 % of firms in the 2008 population were failing five years later, while failures account for 60 % of the total “deaths”. Road transport, construction and port trade also perform quite poorly in this respect. At the other end of the spectrum we find port construction and dredging, energy, car manufacturing and the food industry (no failures at all), and cargo handling and chemicals (with only 3 to 4 % of the original population failing). Out of the total port-related businesses, 9.5 % were failing after five years, and those failing firms represented 34.6 % of the “deaths”.

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. In 2013 the number of SMEs declined again and the number of large firms was more or less stable, so that the latter’s share in the total was up slightly at 39.5 %. The total value added of large firms was also steady, while that of the SMEs declined. Employment and investment were down in both categories but fell more steeply in the SMEs. In 2013 the weight of the large firms in the three parameters therefore edged upwards to 94.8 % of value added, 94.1 % of investment and 91.9 % of employment.

TABLE 8 BREAKDOWN OF FINDINGS IN THE BELGIAN PORTS IN 2013

Ports	Number of firms[35]		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	833	1,050	9,229.0	370.1	54,407	3,678	2,034.2	56.2
Ghent	293	336	3,186.8	198.6	24,858	2,200	350.4	55.1
Ostend	62	141	393.2	36.9	3,766	505	41.5	18.8
Zeebrugge	156	244	769.5	85.9	6,725	1,063	156.6	14.3
Liège	88	92	1,190.6	31.2	8,427	478	206.2	4.8
Brussels	112	225	426.0	51.3	3,282	715	57.9	9.7
Outside the ports	33	332	82.9	56.0	1,692	459	171.9	30.5
TOTAL	**1,577**	**2,420**	**15,278.0**	**830.0**	**103,158**	**9,098**	**3,018.6**	**189.6**

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

[33] 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.

[34] Defined as the sum of migrations in and out compared to the population in the base year.

[35] 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 2013 comprises 1.485 large firms and 2.414 small and medium-sized firms, totalling 3.899 firms. The results of the public sector are not included in this table.

1.8 Social balance sheet in the Belgian ports[36]

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, labour 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 sample[37] relating to the period 2011 - 2013. The detailed figures for 2013 are shown in Annex 1. The national data are 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 labour costs

In 2012, employment in the constant sample of firms active in the Belgian ports expanded by 1.5 %, but fell by 0.4 % in the following year. These findings are in line with the general results evident from table 5 (+1.7 % in 2012 and -0.7 % in 2013). In 2013 the number of hours worked declined faster than the number of FTEs, reducing the average number of hours worked per FTE to 1,506 hours. Average annual staff costs per FTE and average staff costs per hour worked maintained their upward trend in 2013. In that year the trend in those averages tallied with the results at national level.

However, there were wide variations between sectors[38]. In 2013 the average number of hours worked was higher than the mean figure in shipping companies, shipbuilding and repair, port trade, fuel production and other logistic services, and especially in port construction and dredging and road transport. Some sectors, and particularly car manufacturing, bucked the trend and increased their average in 2013. Energy, fuel production, chemicals and other logistic services had high average annual staff costs per FTE and high average staff costs per hour worked; fishing and fish industry and road transport were at the lower end of the scale in that respect. In 2013, average staff costs per hour worked increased or at least remained steady in all sectors without exception. The average number of hours worked per FTE declined in all ports except Ghent and Zeebrugge, but all ports showed an increase in both average annual staff costs per FTE and annual average costs per hour worked.

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)

	2011	2012	2013
Change in the average number of employees on the staff register (p.c.)		*+1.5*	*-0.4*
Change in the number of hours actually worked (p.c.)		*+1.6*	*-0.7*
Change in staff costs (p.c.)		*+3.8*	*+2.0*
Average number of hours worked per annum per full-time equivalent *(hours)*	*1,510*	*1,511*	*1,506*
Average annual staff costs per full-time equivalent *(euros)*	*74,764*	*76,423*	*78,282*
Average staff costs per hour worked *(euros)*	*50*	*51*	*52*

Source: NBB (full presentation accounts only).

1.8.2 Composition of the workforce

Except for the level of education, there were hardly any changes in 2013 compared to the previous years. The share of blue collar workers was virtually unchanged at just over half the total number of

[36] The national data mentioned were taken from Heuse P., *2013 social balance sheet*, NBB, Economic Review, December 2014. 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.

[37] The constant sample was determined on the basis of the firms which filed full-format accounts throughout the period 2011 - 2013, and the financial year must comprise a period of twelve months. The employer's organisations (e.g. Cepa), with NACE-BEL 78200, are included in the constant sample. The constant sample comprises 953 firms and 97,107 FTEs, or 24.4 % of the firms considered for this study in 2013 and 83.1 % of the direct employment calculated in this study.

[38] It should be kept in mind that these figures often reflect a limited number of companies. The findings should therefore be interpreted with caution.

employees[39]. Cargo handling, shipbuilding and repair and car manufacturing have a high score in this respect (over 80 % in the last two sectors), while shipping agents and forwarders, port authorities, fuel production, other logistic services, port trade and energy employ few if any blue collar workers (the last two sectors less than 10 %). In the individual ports the ratios are also stable overall, though Antwerp and especially Brussels are the only ones with a majority of white collar workers.

The firms in the constant sample have noticeably few female workers: 16 % of the total (a figure that is unchanged compared to previous years), as opposed to an average of 43 % for Belgian firms as a whole. The proportion is particularly low (under 10 %) in shipbuilding and repair and metalworking industry, and does not exceed 50 % in any sector. Fishing and fish industry and port trade score significantly above average, while in the case of shipping agents and forwarders the ratio is 42 %, the highest figure in all the sectors. There are few differences between the ports except for Ostend and Brussels, which employ a somewhat higher proportion of female workers. The percentage of part-time workers is also stable, but rather low at under 10 %. Higher percentages are found in the sectors geared to commerce and services (trade, port trade and other logistic services), but there are generally few marked differences between the various sectors. The individual ports also vary little, except for Liège where the proportion of part-time work is somewhat lower (partly owing to the significance of the metalworking industry there, in which part-time work is less common overall).

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

	2011	2012	2013
By professional category			
White-collar	*43*	*44*	*44*
Blue-collar	*53*	*53*	*52*
Other staff	*4*	*4*	*4*
By sex			
Males	*84*	*84*	*84*
Females	*16*	*16*	*16*
By working time			
Full-time	*90.3*	*90.1*	*90.1*
Part-time	*9.7*	*9.9*	*9.9*
By educational level			
Males			
Primary education (p.c.)	*21.3*	*20.0*	*19.3*
Secondary education (p.c.)	*53.8*	*54.9*	*55.2*
Higher non-university education (p.c.)	*16.2*	*16.3*	*16.6*
University education (p.c.)	*8.8*	*8.8*	*8.9*
Females			
Primary education (p.c.)	*7.2*	*7.2*	*6.9*
Secondary education (p.c.)	*45.2*	*45.2*	*44.4*
Higher non-university education (p.c.)	*32.4*	*31.9*	*32.6*
University education (p.c.)	*15.2*	*15.7*	*16.0*

Source: NBB (full presentation accounts only).

In 2013, almost three in ten workers (29.3 %) had pursued post-secondary education in one form or another, a proportion that is rising year by year. It is noticeable that female workers in the Belgian ports are much better qualified than the men, on average: almost twice as many women hold a university or higher non-university diploma. Highly trained staff are employed in shipping companies, port construction and dredging and other logistic services, but especially in energy and fuel production. Conversely, the proportion is low or very low in cargo handling, shipbuilding and repair, fishing and fish industry, car manufacturing and road transport. Men and women have roughly the same level of

[39] The difference between 2012 and 2013 in the table is due to rounding off: in the two years considered, the respective proportions were 52.53 and 52.36 %.

education in some sectors: shipping agents and forwarders, fishing and fish industry, port trade and other logistic services. In the various ports the proportion of highly trained workers is in line with the port average, except for Zeebrugge where it is lower and Brussels where it is above that average.

1.8.3 External staff

In 2013, 14.1 % of total employment (on the basis of the number of hours worked) in firms in the constant sample consisted of externally hired temporary staff (agency staff and seconded workers), a proportion that has been falling slowly since 2011. Shipping agents and forwarders, car manufacturing, food industry and especially cargo handling[40] were the only sectors with an above-average score here; sectors such as port construction and dredging, port trade, energy and fuel production, and the port authorities, employed hardly any external staff. Owing to the dominance of cargo handling in the total, Zeebrugge and Antwerp score above the general average, while Ghent comes slightly below it and the other ports have a much lower score.

Despite the fall in the number of hours worked in the staff category considered in 2012 and 2013, the corresponding costs nevertheless increased. The average hourly cost of the external workers thus increased from € 38.0 in 2012 to € 38.8 in 2013 (compared to an average of € 52.0 for own staff).

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)

	2011	2012	2013
Share of external staff in total employment (on the basis of the number of hours actually worked) *(share as a percentage of the total)*	14.6	14.2	14.1
Change in the number of hours actually worked		- 1.7	- 0.9
Change in costs		+ 0.4	+ 1.3

Source: NBB (full presentation accounts only).

1.8.4 Staff turnover

Staff turnover in firms in the constant sample was still slightly positive in 2013, after two years of substantial but declining excess recruitment. The largest positive balance was found in cargo handling, while the biggest negative difference between recruitment and departures was seen in the metalworking industry. The main reason for that was the reduction in the workforce at ArcelorMittal in Liège, which was only just offset, if at all, by additional recruitment in other sectors, so that Liège was the only one of the six ports to record a negative staff turnover figure in 2013. The other ports recorded a positive balance, though it was smaller than in 2012, except for Brussels where, following a negative turnover figure in 2012, recruitment slightly exceeded departures in 2013. The causes of staff departures from the company were still mainly classed in the "other reasons"[41] category. However, the share of that category diminished slightly in 2013, in favour of the "retirement" category.

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

	2011	2012	2013
Net number of staff hired during the year *(FTE)*	+ 3,041	+ 991	+ 42
Staff leaving, by reason for termination of contract			
Retirement	*5.6*	*7.0*	*8.7*
Unemployment with company allowance	*5.1*	*4.4*	*4.3*
Dismissal	*14.7*	*18.2*	*18.4*
Other reason	*74.7*	*70.4*	*68.6*

Source: NBB (full presentation accounts only).

[40] In most cases this concerns employees in the pool of dock workers.

[41] 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.

1.8.5 *Training*[42]

Almost two-thirds of the firms included in the constant sample reported training initiatives on their social balance sheet (63.0 %), and that proportion was up again slightly in 2013, compared to the previous year. The participation rate was also a little higher in 2013, but only for men; almost six out of ten male workers took part in training, compared to only just over half of female workers. There are few notable differences between the individual ports, except for Brussels where the participation rate is somewhat lower than the average.

The number of training hours per employee had also risen slightly, and that was true of both sexes. This trend applies to all ports except Antwerp, where this figure was more or less steady in 2013. As the total number of training hours increased in 2013 (+2.7 %) but the cost declined (-1.2 %), training costs per hour dropped from an average of € 73.0 to € 70.2 per hour. Antwerp, Ostend and Zeebrugge followed the same trend, in Liège the figure was steady, and in Ghent and Brussels it increased. Both training hours as a percentage of total hours worked and the share of training expenditure in total staff costs remained unchanged at 1.3 and 1.8 % respectively in 2013.

All of the indicators described here have significantly higher showings than the total for Belgian companies[43]. In 2013, a mere 11.7 % of the total trained their employees, with a little over one-third of the workforce involved, at an average of 27 hours a year per employee. Together they account for training hours totalling 0.8 % of hours worked. The average cost per hour of training (€ 52.8) and the share of the training budget in total staff costs (1.1 %) are also below the levels reported by the companies operating in the Belgian ports.

Port construction and dredging, energy and fuel production have a particularly high participation rate and a high number of training hours per employee; the last two sectors also devote a particularly big percentage of time to training in relation to the total number of hours worked, and have a high training cost per hour. That cost is also above average in shipping companies, chemicals and car manufacturing. Chemicals and electronics similarly feature a high participation rate. In the case of shipping agents and forwarders, shipbuilding and repair, port trade and road transport, the training effort is relatively smaller.

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

	2011	2012	2013
P.c. of firms reporting training on the social balance sheet	56.8	62.4	63.0
Participation rate	57.2	56.9	57.4
Males	*58.3*	*57.4*	*58.4*
Females	*51.9*	*54.5*	*52.5*
Number of hours' training per person *(hours)*	32.6	32.6	33.5
Males (hours)	*33.7*	*33.6*	*34.3*
Females (hours)	*26.7*	*27.5*	*29.2*
Training costs per hour (euros)	67.0	73.0	70.2
Males (euros)	*66.8*	*72.5*	*69.1*
Females (euros)	*68.2*	*76.4*	*77.1*
P.c. of the number of hours worked devoted to training	1.3	1.3	1.3
Training costs as a percentage of total staff costs	1.7	1.8	1.8

Source: NBB (full presentation accounts only).

[42] 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.

[43] The source of the national data given here is the table with indicators relating to continuing on-the-job training, published by the Central Balance Sheet Office. This table can be found at: https://www.nbb.be > Central Balance Sheet Office > Statistics > Indicators relating to continuing on-the-job training. A key reason for these higher figures is that large companies are over-represented in the constant sample, because the latter comprises full-format annual accounts only, and large companies traditionally invest more in training their staff.

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 solvency (see Annex 3 for the definition of the ratios). The first ratio concerns the firm's 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[44].

The study of the financial ratios is based on a constant sample[45] composed for the years 2011 to 2013. 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 companies, the same calculation method – namely globalisation – was used.

TABLE 14 **FINANCIAL RATIOS IN THE BELGIAN PORTS FROM 2011 TO 2013**
(reduced population: constant population)

Ports	Return on equity after tax (in p.c.)			Liquidity in the broad sense			Solvency (in p.c.)		
	2011	2012	2013	2011	2012	2013	2011	2012	2013
Antwerp	10.4	10.4	3.9	0.92	1.18	1.18	41.5	44.0	43.8
Ghent	6.6	4.2	5.2	0.90	1.24	1.34	34.4	38.8	42.2
Ostend	9.8	15.9	8.9	1.00	0.90	1.00	48.2	48.3	52.2
Zeebrugge	7.2	4.7	6.5	1.07	1.16	1.07	49.5	52.1	51.6
Liège	6.6	-1.4	-2.6	0.66	0.91	0.83	38.6	40.8	42.1
Brussels	9.8	5.1	3.1	1.29	1.36	1.35	34.9	37.9	37.9
Belgian ports	**9.4**	**8.2**	**3.4**	**0.89**	**1.15**	**1.16**	**40.5**	**43.3**	**43.7**
Non-financial corporations[46]	**6.6**	**7.0**	**5.3**	**1.19**	**1.24**	**1.25**	**42.9**	**42.1**	**43.2**

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

The firms in the constant sample saw their profitability decline in both 2012 and 2013, to an average of 3.4 % in the latter year. This was lower than for Belgian firms in general, whereas the opposite was true in the two preceding years. The decline occurred in all the ports except Ghent and Zeebrugge, where profitability was somewhat better. In Liège, where the result was already negative in 2012, profitability deteriorated still further. In contrast, liquidity has exhibited structural improvements since 2011, and in 2013 it more or less equalled the level of the previous year, though it was still slightly below the national average. The trend was apparent in all the ports except Zeebrugge and Liège, where there was a slight decrease. For some years now, Liège has been the only port with an average of less than one[47]. Finally, solvency has also improved since 2011 and was a little better than the national average in both 2012 and 2013. In Antwerp, Zeebrugge and Brussels, the ratio was virtually unchanged, while the other ports shared in the general improvement.

[44] 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.

[45] The constant sample composed for the study of the ratios includes all firms which filed their annual accounts in 2011, 2012 and 2013 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 2,471 firms, € 14,700.2 million of value added and 100,485 FTEs, or 63.2 % of the firms considered for the Belgian ports in 2013, 89.4 % of the direct value added and 86.0 % of the direct employment examined here.

[46] For additional information see Vivet D., *Results and financial situation of firms in 2013*, NBB, Economic review, December 2014, Brussels.

[47] A healthy going concern should have a current ratio in excess of 1.

In 2013 **return on equity** declined in both clusters; in the past two years it has been lower in the non-maritime segment. It is encouraging that the shipping companies and port authorities which were still recording negative profitability in 2011 became profitable again in subsequent years[48]. Conversely, the positive result in shipbuilding and repair and in energy turned into a loss in 2013, and the negative profitability in the metalworking industry deteriorated further. In port construction and dredging, return on equity remained very high (almost 30 %) throughout the period, but the high profitability in fuel production dropped sharply in 2013. Together with the decline in chemicals, that exerted pressure on profitability in Antwerp's port industry where the two sectors mentioned have a substantial presence. The port of Ostend recorded the highest return on equity of all the ports examined, and except for the port authority no sector posted a negative figure. Ghent and Zeebrugge bucked the general trend in 2013, with higher profitability thanks to strong performance in the non-maritime cluster which scored better on average than the maritime cluster. That is also the case in the port of Brussels, where the maritime cluster made a loss in 2013. Finally, Liège was again confronted by negative profitability in industry in 2013, as a result of losses recorded in energy, chemicals, metalworking industry and other industries.

In 2013, **liquidity** continued to recover, primarily in the maritime cluster: in all sectors the ratio improved or at least remained steady, except in shipbuilding and repair, fishing and fish industry and the port authorities. In the non-maritime cluster as a whole, it remained at the same level as in 2012, with improvements in trade, car manufacturing, electronics and other industries and a deterioration in the food industry and energy. This last sector alone has a ratio substantially lower than one. High ratios (over 1.50) are seen in the port authorities, fishing and fish industry, port trade, electronics and metalworking industry (in this case despite systematically negative profitability). In general, the maritime cluster has a higher score than the non-maritime cluster. The port of Antwerp followed the general trend, while in Ghent and Brussels liquidity declined in the maritime segment and in Zeebrugge both clusters recorded a decline. The non-maritime cluster improved in Ghent and deteriorated in Liège. The port of Ostend recorded only minor changes in the various sectors.

In regard to **solvency** there is hardly any difference between the maritime and non-maritime clusters, and both showed a further slight improvement following a marked rise in 2012. High ratios (over 50 %) are seen in the port authorities and chemicals; except in the case of fuel production, the ratio exceeds 30 % overall. In the ports of Ghent and Zeebrugge, solvency is noticeably higher in the maritime cluster than in the non-maritime segment (55 compared to 40 % and 56 compared to 47 % respectively); in Ostend, the opposite applies (47 % in the maritime cluster and 54 % in the non-maritime cluster). In the other ports there are few noticeable changes or differences.

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 summarises 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

[48] Due caution should be observed when interpreting the results, as some sectors only comprise a small number of companies and developments may be dominated by just one or a few firms; financial results are typically more volatile than social balance sheet data.

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 Office[49]. 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 firm can be obtained from the company file[50] and compared to the distribution of firms by financial health class in the ports, or in Belgium as a whole.

Tables 15 and 16 show that in 2013 a large majority of firms in the Belgian ports (66.5 % of firms and 80.1 % in terms of employment) were in classes 1 to 4, i.e. they had a below-average failure risk. It is noteworthy that the distribution according to the number of firms has changed little since 2008, but that is not so if we consider the distribution according to the firm's size (in number of employees). The combined share of classes 1 to 3 declined significantly in the first year of the crisis, 2009, but largely recovered in subsequent years. The two best classes (1 and 2) actually did better in 2013 than in 2008, while there has been a fall in the proportion of firms in risk classes 6 to 10.

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

	2008	2009	2010	2011	2012	2013
Class 1	7.7	8.7	8.6	8.2	8.9	8.9
Class 2	17.1	18.3	18.5	19.5	18.8	19.1
Class 3	19.4	17.6	18.4	18.5	18.4	19.4
Class 4	19.3	18.3	19.3	19.9	18.9	19.1
Class 5	19.2	18.0	17.9	17.4	18.3	17.6
Class 6	11.8	13.2	11.6	11.5	11.8	10.5
Class 7	3.3	3.4	3.4	2.6	2.9	3.2
Class 8	1.4	1.5	1.7	1.6	1.6	1.5
Class 9	0.4	0.6	0.4	0.5	0.3	0.4
Class 10	0.3	0.4	0.2	0.3	0.2	0.3
TOTAL	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

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 REGISTER[51]**
(reduced population)

	2008	2009	2010	2011	2012	2013
Class 1	5.4	6.7	10.0	8.7	7.7	8.1
Class 2	19.2	23.6	23.0	18.8	15.3	22.3
Class 3	42.8	29.2	33.2	35.2	39.2	33.0
Class 4	13.1	24.7	21.0	18.7	16.5	16.7
Class 5	15.6	11.3	8.8	15.4	16.9	16.4
Class 6	2.9	3.3	3.2	2.6	3.6	2.6
Class 7	0.5	0.6	0.5	0.4	0.4	0.5
Class 8	0.3	0.3	0.3	0.2	0.3	0.2
Class 9	0.0	0.0	0.0	0.1	0.0	0.1
Class 10	0.1	0.1	0.0	0.0	0.0	0.0
TOTAL	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

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

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

[50] 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.

[51] Full-time equivalents (annual account item 9087).

2 PORT OF ANTWERP

2.1 Port developments[52]

In 2013, traffic in the port of Antwerp surpassed the level of the pre-crisis year 2008 for the first time, achieving a new historical record of 191.0 million tonnes, or 3.7 % higher than the previous year. As the Hamburg-Le Havre range[53] as a whole recorded only 0.6 % growth, Antwerp managed to increase its share in the range slightly from 16.2 to 16.7 %.

The driving force was liquid bulk, which was up by 14.3 million tonnes or 31.6 % against 2012, the only goods category to record a positive result. Inward flows of crude oil almost doubled, while there was also a large increase in the volume of petroleum derivatives, both inward and outward. In recent years a number of port enterprises have invested heavily in additional tank storage capacity. In contrast, transhipment of dry bulk was down by 4.7 million tonnes or 24.4 %. In contrast to the Dutch ports, the main reason for this was a sharp fall in inward flows of coal, due chiefly to the closure of a number of furnaces in the port's natural hinterland.

As a result of the stagnating global economy, container traffic declined slightly for the second successive year, down by -0.7 % in volume (TEU) and -1.7 % in tonnage. The other categories of goods also recorded a fall: non-containerised general cargo was down by 6.8 % and roll-on/roll-off traffic by 4.9 %, although the number of vehicles shipped increased by almost 5 % to 1.3 million units.

The 2014 traffic figures are very similar, except in the case of containers. Total transhipment achieved another record at 199.0 million tonnes, 4.2 % more than in 2013. Antwerp was the only Flemish maritime port to enjoy growth. That was attributable largely to container traffic, up by 5.9 % in tonnage and 4.7 % in TEU. Following the surge in 2013, liquid bulk was up by a further 6.0 % and dry bulk maintained its downward trend, though the decline was smaller at 6.5 %; once again, the coal segment was the main factor. Conventional general cargo, which is important for dockers' employment, declined further and represented only 7.2 % of total maritime traffic in 2014, the main reasons being increasing containerisation, sluggish economic activity and the competition from Zeeland Seaports. Finally, in ro-ro traffic the years of growth in the number of vehicles shipped came to an end as a result of a decline in exports of second-hand cars to a number of overseas destinations.

The past decade has brought considerable changes in the composition of cargo traffic at the port of Antwerp. In 2004, containers represented 45 % of the total tonnage; in 2014 that figure had already risen to more than half (54 %). Over the same period, the share of liquid bulk increased from 23 % to 32 %. Conversely, dry bulk declined from 18 % to 7 % and non-containerised general cargo (including ro-ro) was down from 14 % to 7 %. Liquid bulk consists mainly of petroleum products, while dry bulk comprises fertilizers, followed by ores and coal (though this last item is constantly declining). General cargo (not containerised) consists mainly of iron and steel products, paper and cellulose, and fruit. About a quarter of container traffic is intra-European, with roughly 20 % to and from the Far East and the same percentage to and from Central and North America, with 18 % originating from or destined for the Middle East.

The number of sea-going vessels at the port of Antwerp has been falling for the past four years (2013: -336 units, 2014: -211), while cargo traffic has been rising. The average gross tonnage has therefore increased systematically to 23,933 tonnes in 2014. The number of large container ships (over 13,000 TEU) is rising year by year, while in October 2013 the port successfully received the "Mary Maersk", one of the largest vessels of its kind with a capacity of 18,000 TEU.

In 2013 the three biggest container shipping companies, Maersk Line, MSC and CMA-CGM, announced that they would establish an alliance, called P3, with the aim of sharing container capacity in order to cut costs. A Chinese veto led to a smaller-scale alliance, 2M, without CMA-CGM, which came into operation at the beginning of 2015. This resulted in a restructuring of the scheduled services between the Far East

[52] Sources: *Yearbook of statistics 2014*, Port of Antwerp; *Annual Report 2013*, Port of Antwerp, and miscellaneous press articles.

[53] See footnote 19.

and Europe, with Antwerp retaining three important routes (at the expense of Zeebrugge), but serving both an import and an export call on one route, which should generate extra traffic.

The year 2014 saw a major relocation of MSC's container traffic within the port. In a joint venture with freight handler PSA, this shipping company (Antwerp's biggest container customer with 4.5 million TEU in 2013, accounting for rather more than half of the total number of containers) operates a terminal on the Delwaide dock, behind the locks on the right bank. As that terminal is at full capacity and MSC no longer wants to operate behind the time-consuming locks, it was agreed that this traffic would be transferred to the currently underused Deurganck dock (a tidal dock with no locks) on the left bank. A new MSC/PSA concession is taking over the existing PSA terminal there and will expand it further. The operation is scheduled for completion by the end of 2015. As this new terminal is also liable to reach saturation point in the foreseeable future, Antwerp Gateway (with DP World from Dubai as the largest shareholder), that operates a container terminal on the other side of the Deurganck dock, has announced that it will invest € 250 million over seven years in doubling its capacity to 4 million TEU. This is expected to create 300 extra jobs.

In the past few years, a number of large-scale investment projects in infrastructure have been pursued or completed at the port of Antwerp. December 2014 saw the inauguration of the Liefkenshoek rail tunnel. This is the second railway access for the expanding port activities on the left bank via a 6 kilometre long tunnel under the River Scheldt, representing an investment of over € 700 million[54]. This Waasland port on the left bank used to be only accessible via one lock (the Kallo lock) which is at the limit of its capacity and presents a risk to operating safety. In October 2011 work therefore began on an additional sea lock, the Deurganck dock lock, costing € 410 million, which should be ready for service in the course of 2016.

2.2 Value added

In 2013, direct value added at the port of Antwerp decreased by 2.1 %, representing negative volume growth of 3.5 %. As indirect value added was also down slightly at constant prices (-0.8 %), total value added (direct plus indirect) declined by 2.2 % by volume. Direct value added represented 4.3 % of the GDP of the Flemish region, or 0.2 percentage point less than in 2012; the share of total value added in 2013 fell from 8.5 to 8.3 %. The share of direct and total value added in Belgian GDP was 2.5 and 4.8 % respectively.

The reduction in value added was apparent in both the maritime and the non-maritime cluster (-3.4 and -1.5 % respectively). In the former case, the decline was due mainly to the shipping companies, where low freight rates converted the operating profit for the sector as a whole into a loss. Another reason lies in the restructuring within the A.P.Möller-Maersk group, where the shipping activities of the Belgian office of Safmarine Container Lines were hived off and this company focused on the shipping agency business from 2013, so that it now comes under the heading of shipping agents and forwarders. That reduced the value added of the shipping companies by € 156.7 million. Owing to the lower value added of Safmarine in 2013, the shipping agents sector only recouped part of that, while Maersk Benelux (from the same group) disappeared on account of cessation of its activities in Belgium. However, the cargo handlers produced good results and increased their combined value added by almost € 60 million, largely thanks to better operating results. In shipbuilding and repair, Antwerp Ship Repair went bankrupt[55].

In the sectors of the non-maritime cluster, there was a general decline except in a few cases. In trade, the main factor was Kuwait Petroleum, which posted a substantial operating loss, and accounts for around two-thirds of the sector as a whole. In fuel production, value added was down by almost € 100 million, mainly owing to a lower operating profit and write-backs from the provisions at ExxonMobil. Independent Belgian Refinery recorded a sharp rise in both turnover and value added following the 2012 takeover of the bankrupt Belgian Refining Corporation. In the chemical sector, the result was virtually unchanged, but that is the outcome of considerable movements in a number of large individual firms, owing to fluctuations in operating results, depreciation and provisions. The sector's overall operating result was down by 20.9 % in 2013. In car manufacturing, too, the reason lies in lower operating profits

[54] Not included in the BNRC investment figures since it is a PPP project.

[55] Three-quarters of the site has now been taken over by the Antwerp Dry Docks consortium while the rest is still owned directly by the Antwerp port authority.

at New Holland Tractor, which also had to contend with a decline in turnover during the year under review. In construction, value added increased as a result of a large company moving to the port area (Bilfinger Industrial Services), and in food industry it was boosted by much improved operating results among major players such as Boortmalt and Cargill. In road transport, a number of bankruptcies depressed the results.

The value added top 10 at the port of Antwerp comprises the same firms as in 2012, with a slight change of ranking here and there. BASF Antwerpen remains the undisputed leader with value added almost twice as high as that of the second in the ranking, Kuwait Petroleum. These ten companies together account for 38 % of the port total.

2.3 Employment

Direct employment in the port of Antwerp was more or less stable in 2013 (+0.3 %). The higher growth in indirect employment boosted total employment by 1.2 %. In the year under review, direct and total employment represented respectively 2.7 and 6.5 % of employment in the Flemish Region (0.1 percentage point more than in 2012). Employment represented 1.5 % (direct) and 3.7 % (total) of Belgian employment. Both figures remained stable compared to the previous year.

The non-maritime cluster continued to expand, and in 2013 it had 1,500 FTEs more than two years previously, but in the maritime cluster the slight gain made in 2012 was wiped out. The job losses resulting from the disappearance of Maersk Benelux were more than offset by the inclusion of Safmarine Container Lines (see 2.2), but that was not enough to counteract the general staff reductions in a large number of firms in the shipping agents and forwarders sector. Since Safmarine as a shipping company employed fewer staff in 2012, the impact on the sector was small in 2013. The decline in shipbuilding and repair is due almost entirely to the bankruptcy of Antwerp Ship Repair.

The growth of the non-maritime cluster is largely attributable to Bilfinger Industrial Services (in the construction sector) which has moved to the port, but also most of the other sectors recorded significant increases in staff numbers. In both fuel production and chemicals, the workforce expanded by around 90 units. Eurochem Antwerpen, which took over the BASF fertilizer division at the BASF site in 2012, had its first full year of operation in 2013 and employed an additional 100 FTEs. Car manufacturing (job losses at New Holland Tractor) and road transport (with several bankruptcies) were the only sectors to record a notable fall in employment.

In the employment top 10 of the port of Antwerp, there was also no change in the first eight. BASF Antwerpen remains the port's biggest employer with 2,953 FTEs, while the ten largest together account for 26 % of employment in the port.

2.4 Investment

The years of declining investment in the port of Antwerp almost came to an end in 2013: the amount invested was down again, but only by 0.7 % (-1.6 % by volume). However, the year under review featured a divergence between the two clusters: a sharp fall in the maritime cluster (-16.0 %) as opposed to strong growth in the non-maritime cluster (+20.8 %).

The reduction of € 133.6 million in the amount invested in cargo handling is due mainly to the completion of several large investment projects. At the end of the year, Ineos Oxyde inaugurated the biggest ethylene terminal in Europe, an investment of € 100 million. In the same year, a Sea-Invest group company completed a project for new storage tanks, representing a total of € 250 million, together with its partner Glencore. Sea-Tank Terminal Antwerp, from the same group, Oiltanking Stolthaven Antwerp and ITC Rubis Terminal each invested substantial amounts in expanding their storage capacity. In the spring, Euro Fruit Ports, a joint venture by Euroports and Compagnie Fruitière, opened a new multi-purpose fruit terminal. The amount invested in shipping companies remained high, while the port authority's investments equalled the previous year's substantial figure. This mainly concerns the acquisition of the Opel Belgium site, construction of the new port authority building, and construction of

the Deurganck dock lock, acting jointly with the subsidiary Deurganckdoksluis NV. These investments in the port infrastructure (see 2.1) are also reflected in the public sector (under the Flemish Region)[56].

The growth in the non-maritime cluster is driven mainly by fuel production and chemicals, which together invested € 213 million more in 2013 than in 2012. In the spring of 2013, Total Raffinaderij announced an investment of € 1 billion, devoted mainly to modernising the refinery but also to petrochemical activities. The 2013 financial year had already recorded an extra investment of € 122 million compared to the previous year. In the summer of 2014, ExxonMobil also announced an investment of more than USD 1 billion in its Antwerp refinery. BASF Antwerpen, representing almost a third of the total investment in the chemical sector, invested in a new butadiene plant which came into operation in September 2014. In November of that year the company announced that it would invest € 500 million worldwide in the production of superabsorbent polymers, a significant proportion of that figure being destined for the Antwerp branch. In the autumn of 2013, Air Liquide began building a carbon monoxide plant on the BASF site, a project worth € 50 million. Evonik Degussa and Evonik Oxeno also invested in additional butadiene production and in the processing of oil sector by-products. Lanxess phased out some of its rubber activities at the port, but at the end of the year it completed a € 15 million investment programme concerning a new fibreglass factory, and in August 2014 it brought a new plastics production unit into service, an investment worth € 75 million. In the food industry, the biggest investor is Belgomilk, which in 2014 announced the expansion of the milk processing capacity at its Kallo site, worth € 80 million. Finally, the Katoen Natie port group bought a 75 % stake in the biggest investor in other industries, the waste processing firm Indaver.

In 2013, shipping company NYK Bulkship (Atlantic) became the leading investor in the port of Antwerp, consigning BASF to second place. Total Raffinaderij and ExxonMobil move into the top 10 as a result of their substantial investments in the petroleum sector. Deurganckdoksluis appears in seventh place as a separate company, being a subsidiary of the Antwerp Port Authority and an investment vehicle for construction of the new lock of the same name.

CHART 5 **CHANGE IN DIRECT VALUE ADDED**
(in € million, current prices)

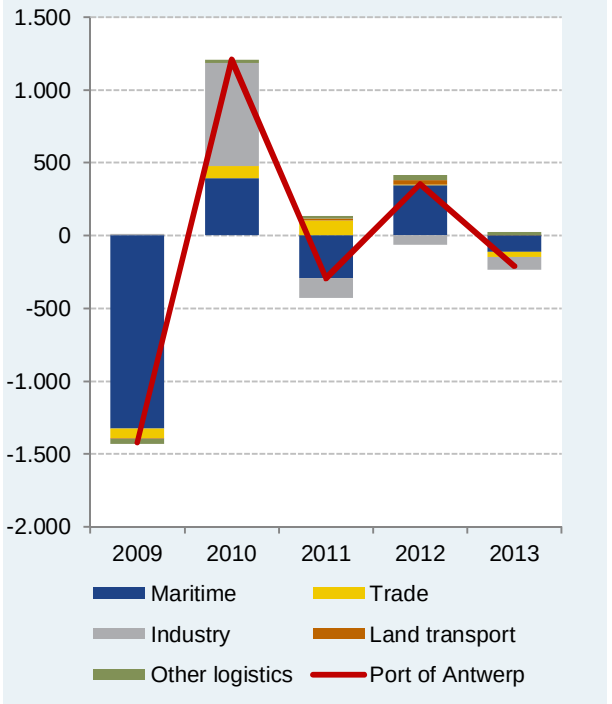
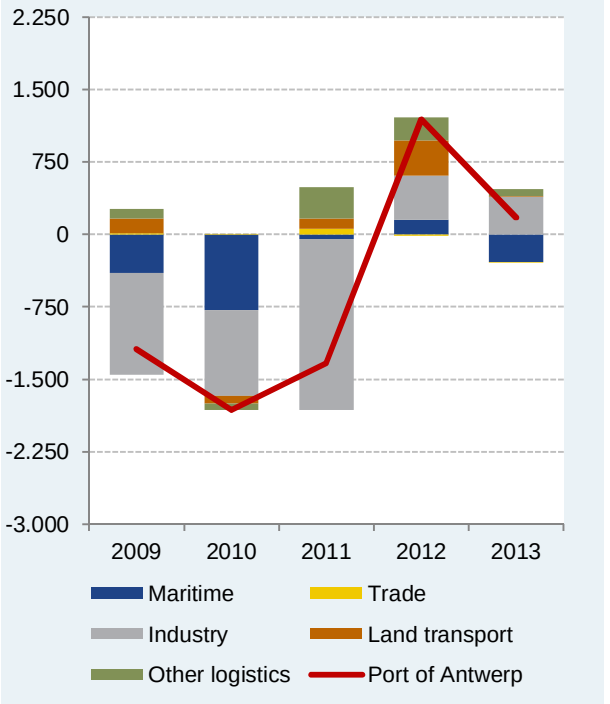


CHART 6 **CHANGE IN DIRECT EMPLOYMENT**
(FTE)



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

[56] 2011 brought the completion of the AMORAS project, a facility for the dewatering and recycling of dredging sediments. Every year the Flemish government invests substantial sums in the operation and maintenance of the facility, but these amounts are not considered as new investment here.

TABLE 17 **VALUE ADDED AT THE PORT OF ANTWERP FROM 2008 TO 2013**
(in € million - current prices)

Sectors	2008	2009	2010	2011	2012	2013	Share in 2013 (in p.c.)	Change from 2012 to 2013 (in p.c.)	Annual average change from 2008 to 2013 (in p.c.)
DIRECT EFFECTS	**10,210.1**	**8,789.4**	**9,996.8**	**9,702.0**	**10,055.0**	**9,844.5**	**100.0**	**- 2.1**	**- 0.7**
MARITIME CLUSTER	**4,210.7**	**2,883.8**	**3,278.7**	**2,987.6**	**3,335.3**	**3,222.6**	**32.7**	**- 3.4**	**- 5.2**
Shipping agents and forwarders	648.0	594.6	608.0	652.4	643.9	684.7	7.0	+ 6.3	+ 1.1
Cargo handling	1,352.3	1,155.2	1,245.5	1,306.7	1,424.1	1,482.8	15.1	+ 4.1	+ 1.9
Shipping companies	1,577.8	592.3	850.0	482.3	580.8	364.0	3.7	- 37.3	- 25.4
Shipbuilding and repair	58.8	55.9	46.5	44.2	38.1	31.7	0.3	- 16.8	- 11.6
Port construction and dredging	177.8	103.0	139.5	108.6	223.9	246.7	2.5	+ 10.2	+ 6.8
Fishing and fish industry	1.2	1.9	1.6	1.1	1.1	1.2	0.0	+ 12.1	+ 0.2
Port trade	16.9	16.4	17.1	16.7	18.6	18.8	0.2	+ 1.3	+ 2.2
Port authority	239.3	222.8	229.1	233.9	255.9	243.5	2.5	- 4.8	+ 0.4
Public sector	138.5	141.6	141.2	141.7	149.0	149.1	1.5	+ 0.1	+ 1.5
Allocation (p.m.)	*74.4*	*60.8*	*88.4*	*108.9*	*109.6*	*96.3*	-	*- 12.2*	*+ 5.3*
NON-MARITIME CLUSTER	**5,999.5**	**5,905.5**	**6,718.1**	**6,714.4**	**6,719.7**	**6,621.9**	**67.3**	**- 1.5**	**+ 2.0**
TRADE	780.3	713.8	796.6	898.6	900.6	864.7	8.8	- 4.0	+ 2.1
INDUSTRY	4,519.8	4,529.7	5,236.3	5,099.1	5,034.9	4,950.3	50.3	- 1.7	+ 1.8
Energy	365.1	462.9	453.8	526.6	415.4	412.2	4.2	- 0.8	+ 2.5
Fuel production	1,054.9	766.3	978.5	912.4	987.6	890.8	9.0	- 9.8	- 3.3
Chemicals	2,259.3	2,541.1	2,657.1	3,009.5	2,944.2	2,942.0	29.9	- 0.1	+ 5.4
Car manufacturing	328.0	262.2	610.3	88.9	106.8	97.1	1.0	- 9.1	- 21.6
Electronics	8.5	16.1	16.7	17.2	23.7	21.5	0.2	- 9.6	+ 20.4
Metalworking industry	214.7	186.4	193.4	201.8	222.3	217.3	2.2	- 2.3	+ 0.2
Construction	114.0	125.0	139.4	152.7	160.7	179.8	1.8	+ 11.9	+ 9.5
Food industry	54.8	49.0	59.3	63.6	46.4	61.8	0.6	+ 33.0	+ 2.4
Other industries	120.7	120.8	127.6	126.3	127.7	127.9	1.3	+ 0.1	+ 1.2
LAND TRANSPORT	253.2	252.0	253.5	266.3	297.9	299.4	3.0	+ 0.5	+ 3.4
Road transport	141.4	124.8	122.2	127.1	139.1	128.7	1.3	- 7.5	- 1.9
Other land transport	111.8	127.2	131.3	139.2	158.8	170.7	1.7	+ 7.5	+ 8.8
OTHER LOGISTIC SERVICES	446.1	410.0	431.8	450.4	486.3	507.4	5.2	+ 4.3	+ 2.6
INDIRECT EFFECTS	**8,826.0**	**8,059.2**	**8,600.4**	**8,787.6**	**9,068.1**	**9,129.8**	**-**	**+ 0.7**	**+ 0.7**
MARITIME CLUSTER	**3,281.1**	**2,904.0**	**3,099.4**	**3,002.7**	**3,338.2**	**3,312.6**	**-**	**- 0.8**	**+ 0.2**
NON-MARITIME CLUSTER	**5,544.9**	**5,155.2**	**5,501.0**	**5,784.8**	**5,729.9**	**5,817.1**	**-**	**+ 1.5**	**+ 1.0**
TOTAL VALUE ADDED	**19,036.1**	**16,848.5**	**18,597.2**	**18,489.5**	**19,123.1**	**18,974.2**	**-**	**- 0.8**	**- 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 year 2008 are based on IOT 2005 and SUT 2007. The indirect effects for the period 2009-2013 are based on IOT 2010 and SUT 2010. The use of different sources causes a break in the time series. The calculated indirect effects are approximations and should be interpreted with caution.

TABLE 18 **VALUE ADDED TOP 10 AT THE PORT OF ANTWERP IN 2013**

Ranking	Company name	Sector
1	B.A.S.F. ANTWERPEN	Chemicals
2	KUWAIT PETROLEUM (BELGIUM)	Trade
3	EXXONMOBIL PETROLEUM & CHEMICAL	Fuel production
4	ELECTRABEL	Energy
5	TOTAL RAFFINADERIJ ANTWERPEN	Fuel production
6	ANTWERP PORT AUTHORITY	Port authority
7	DREDGING INTERNATIONAL	Port construction and dredging
8	STYROLUTION BELGIUM	Chemicals
9	MSC PSA EUROPEAN TERMINAL	Cargo handling
10	BAYER ANTWERPEN	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 19 **EMPLOYMENT AT THE PORT OF ANTWERP FROM 2008 TO 2013**
(FTE)

Sectors	2008	2009	2010	2011	2012	2013	Share in 2013 (in p.c.)	Change from 2012 to 2013 (in p.c.)	Annual average change from 2008 to 2013 (in p.c.)
DIRECT EFFECTS	**64,463**	**63,278**	**61,462**	**60,129**	**61,322**	**61,496**	**100.0**	**+ 0.3**	**- 0.9**
MARITIME CLUSTER	**29,261**	**28,861**	**28,078**	**28,032**	**28,183**	**27,898**	**45.4**	**- 1.0**	**- 0.9**
Shipping agents and forwarders	7,575	7,336	7,153	7,422	7,476	7,251	11.8	- 3.0	- 0.9
Cargo handling	15,450	15,075	14,557	14,400	14,260	14,312	23.3	+ 0.4	- 1.5
Shipping companies	1,092	1,129	1,140	1,128	983	937	1.5	- 4.8	- 3.0
Shipbuilding and repair	783	819	697	576	535	428	0.7	- 20.1	- 11.4
Port construction and dredging	645	699	781	849	1,245	1,298	2.1	+ 4.2	+ 15.0
Fishing and fish industry	18	25	21	18	16	16	0.0	- 1.9	- 2.5
Port trade	169	187	192	147	153	151	0.2	- 1.6	- 2.3
Port authority	1,667	1,699	1,711	1,692	1,697	1,703	2.8	+ 0.4	+ 0.4
Public sector	1,862	1,892	1,826	1,801	1,817	1,803	2.9	- 0.7	- 0.6
Allocation (p.m.)	*2,038*	*2,081*	*1,882*	*1,752*	*1,737*	*1,608*	-	*- 7.4*	*- 4.6*
NON-MARITIME CLUSTER	**35,202**	**34,418**	**33,384**	**32,097**	**33,139**	**33,597**	**54.6**	**+ 1.4**	**- 0.9**
TRADE	2,418	2,426	2,429	2,485	2,470	2,462	4.0	- 0.3	+ 0.4
INDUSTRY	25,695	24,645	23,755	21,979	22,438	22,832	37.1	+ 1.8	- 2.3
Energy	1,036	1,101	1,075	1,042	1,030	995	1.6	- 3.4	- 0.8
Fuel production	2,648	2,721	2,772	2,781	2,769	2,858	4.6	+ 3.2	+ 1.5
Chemicals	10,915	10,654	10,680	10,794	10,889	10,981	17.9	+ 0.8	+ 0.1
Car manufacturing	4,633	3,824	3,070	1,049	1,126	1,072	1.7	- 4.8	- 25.4
Electronics	128	206	253	264	302	301	0.5	- 0.2	+ 18.8
Metalworking industry	3,492	3,181	3,010	3,083	3,256	3,251	5.3	- 0.1	- 1.4
Construction	1,338	1,389	1,441	1,457	1,565	1,867	3.0	+ 19.3	+ 6.9
Food industry	459	478	381	392	404	391	0.6	- 3.3	- 3.2
Other industries	1,047	1,092	1,074	1,117	1,098	1,115	1.8	+ 1.6	+ 1.3
LAND TRANSPORT	3,846	4,000	3,919	4,026	4,388	4,389	7.1	+ 0.0	+ 2.7
Road transport	1,948	1,924	1,761	1,794	1,898	1,823	3.0	- 4.0	- 1.3
Other land transport	1,898	2,076	2,158	2,232	2,490	2,567	4.2	+ 3.1	+ 6.2
OTHER LOGISTIC SERVICES	3,243	3,347	3,280	3,607	3,843	3,914	6.4	+ 1.9	+ 3.8
INDIRECT EFFECTS	**86,513**	**81,625**	**84,588**	**84,054**	**86,639**	**88,218**	**-**	**+ 1.8**	**+ 0.4**
MARITIME CLUSTER	**31,354**	**32,834**	**33,461**	**33,539**	**34,332**	**34,968**	**-**	**+ 1.9**	**+ 2.2**
NON-MARITIME CLUSTER	**55,159**	**48,791**	**51,127**	**50,515**	**52,307**	**53,250**	**-**	**+ 1.8**	**- 0.7**
TOTAL EMPLOYMENT	**150,976**	**144,904**	**146,050**	**144,183**	**147,961**	**149,714**	**-**	**+ 1.2**	**- 0.2**

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 year 2008 are based on IOT 2005 and SUT 2007. The indirect effects for the period 2009-2013 are based on IOT 2010 and SUT 2010. The use of different sources causes a break in the time series. The calculated indirect effects are approximations and should be interpreted with caution.

TABLE 20 **EMPLOYMENT TOP 10 AT THE PORT OF ANTWERP IN 2013**

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	EXXONMOBIL PETROLEUM & CHEMICAL	Fuel production
6	MSC PSA EUROPEAN TERMINAL	Cargo handling
7	DREDGING INTERNATIONAL	Port construction and dredging
8	PSA ANTWERP	Cargo handling
9	TOTAL RAFFINADERIJ ANTWERPEN	Fuel production
10	EVONIK DEGUSSA ANTWERPEN	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 21 **INVESTMENT AT THE PORT OF ANTWERP FROM 2008 TO 2013**
(in € million - current prices)

Sectors	2008	2009	2010	2011	2012	2013	Share in 2013 (in p.c.)	Change from 2012 to 2013 (in p.c.)	Annual average change from 2008 to 2013 (in p.c.)
MARITIME CLUSTER	**2,505.3**	**2,071.7**	**1,625.3**	**1,480.8**	**1,360.1**	**1,142.5**	**49.4**	**- 16.0**	**- 14.5**
Shipping agents and forwarders	108.6	67.8	52.4	81.7	56.8	36.2	1.6	- 36.2	- 19.7
Cargo handling	708.5	681.5	592.2	649.9	591.7	458.1	19.8	- 22.6	- 8.4
Shipping companies	1,354.0	1,047.4	631.8	323.8	374.8	377.2	16.3	+ 0.6	- 22.6
Shipbuilding and repair	8.1	7.6	12.2	4.2	4.3	6.5	0.3	+ 49.2	- 4.3
Port construction and dredging	189.7	178.7	264.0	338.2	92.0	8.0	0.3	- 91.3	- 46.9
Fishing and fish industry	0.3	0.3	1.1	0.2	0.2	0.1	0.0	-33.6	- 15.0
Port trade	2.9	2.3	2.1	1.1	1.0	1.4	0.1	+ 44.7	- 13.0
Port authority	91.6	44.7	33.9	45.0	194.8	196.3	8.5	+ 0.8	+ 16.5
Public sector	41.5	41.4	35.7	36.6	44.5	58.5	2.5	+ 31.4	+ 7.1
Allocation (p.m.)	*182.5*	*226.9*	*431.9*	*265.8*	*179.0*	*165.3*	-	*- 7.6*	*- 2.0*
NON-MARITIME CLUSTER	**1,161.4**	**1,026.7**	**934.4**	**942.6**	**969.7**	**1,171.8**	**50.6**	**+ 20.8**	**+ 0.2**
TRADE	62.6	40.5	54.0	62.4	55.5	59.5	2.6	+ 7.3	- 1.0
INDUSTRY	942.2	817.9	779.3	784.1	785.1	996.8	43.1	+ 27.0	+ 1.1
Energy	77.4	158.0	93.6	74.2	74.5	71.6	3.1	- 3.9	- 1.5
Fuel production	200.2	185.4	199.6	124.8	146.3	268.4	11.6	+ 83.4	+ 6.0
Chemicals	572.3	358.2	369.0	470.2	484.1	574.8	24.8	+ 18.7	+ 0.1
Car manufacturing	18.9	9.7	6.0	8.8	8.1	8.7	0.4	+ 6.3	- 14.4
Electronics	0.3	2.0	4.1	2.4	1.2	1.3	0.1	+ 12.4	+ 37.3
Metalworking industry	11.3	10.3	11.0	9.4	12.3	14.3	0.6	+ 16.7	+ 4.9
Construction	20.1	24.5	11.6	15.4	12.4	17.7	0.8	+ 43.0	- 2.5
Food industry	21.0	34.6	20.1	17.4	15.1	15.6	0.7	+ 3.0	- 5.8
Other industries	20.9	35.2	64.4	61.6	31.1	24.5	1.1	- 21.3	+ 3.3
LAND TRANSPORT	55.4	42.6	35.8	27.9	38.5	35.7	1.5	- 7.2	- 8.4
Road transport	35.6	21.6	19.8	17.5	23.0	19.6	0.8	- 14.9	- 11.3
Other land transport	19.8	21.0	16.0	10.4	15.4	16.1	0.7	+ 4.3	- 4.0
OTHER LOGISTIC SERVICES	101.2	125.7	65.3	68.1	90.6	79.7	3.4	- 12.0	- 4.7
DIRECT INVESTMENT	**3,666.7**	**3,098.4**	**2,559.7**	**2,423.4**	**2,329.8**	**2,314.3**	**100.0**	**- 0.7**	**- 8.8**

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 2013**

Ranking	Company name	Sector
1	NYK BULKSHIP (ATLANTIC)	Shipping companies
2	B.A.S.F. ANTWERPEN	Chemicals
3	TOTAL RAFFINADERIJ ANTWERPEN	Fuel production
4	ANTWERP PORT AUTHORITY	Port authority
5	EURONAV	Shipping companies
6	TOTAL OLEFINS ANTWERP	Chemicals
7	DEURGANCKDOKSLUIS	Port authority
8	ELECTRABEL	Energy
9	PUBLIC SECTOR	Public sector
10	EXXONMOBIL PETROLEUM & CHEMICAL	Fuel production

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 developments[57]

In 2013 maritime transhipment at the port of Ghent recorded a small 1.3 % decline and totalled 26.0 million tonnes. The main factor was a reduction in trans-Atlantic traffic, as short sea shipping expanded slightly and now represents just over two-thirds of total traffic. All types of traffic declined except for roll-on/roll-off where the volume was up by 16.0 %. The latter consists largely of Volvo cars shipped via DFDS Seaways on the Ghent-Göteborg route. Sweden is therefore the port's main trading partner, followed by Russia (mainly steel products) and Brazil (iron ore and fruit juice). Ghent is Europe's biggest port for the importation of (Brazilian) fruit juice, at around 650,000 tonnes per annum, accounting for about half of the European market.

Container traffic was down by 5.1 %, but this is only a small segment representing barely 2.3 %. Although dry bulk also declined by 2.7 %, Ghent is still Belgium's largest dry bulk port, handling 16.4 million tonnes, which represents 63 % of the port total. In regard to goods categories, the biggest changes were in crude minerals and building materials (up) and agricultural and chemical products (down). In 2013, 2,948 sea-going vessels entered the port of Ghent, 177 fewer than in the previous year. Here, too, ships are becoming larger, and that is one of the arguments in favour of a new sea lock at Terneuzen (see below).

In 2014 maritime traffic was more or less stable (-0.3 %), although there was growth in dry bulk and conventional general cargo, and a new record for ro-ro. Otherwise, the 2013 trends continued: an increasing share for short sea shipping, a declining number of ships with a larger average tonnage, and the same trading partners in the top 3.

Access to the port of Ghent is via a set of locks in Terneuzen (Netherlands) that link the Scheldt to the Ghent-Terneuzen canal. The existing sea lock is becoming too small for the ever larger ships, while the lack of a second lock could endanger operating safety. In February 2015, Flanders and the Netherlands signed a contract for construction of a new sea lock at an estimated cost of € 920 million, with Flanders paying 84 % of the bill. Work is to start in 2017 with completion scheduled for 2021. In regard to inland navigation, work has taken place in recent years on the Seine-Scheldt project, which will provide a modern link between the Scheldt basin and Paris. In Evergem a new canal lock has already been installed, and the Ringvaart canal is being modified.

In the port area itself, a total of 660 hectares of industrial sites has been created around the Kluizendok (including the De Nest and Rieme-Noord sites), intended mainly for logistics activities. Plans to double the size of that dock have now been scrapped; instead, the wharf is being extended by just 200 metres. The space that becomes available here will also be used for new industrial sites.

3.2 Value added

Direct value added of the port of Ghent increased by 6.7 % (+5.1 % by volume). With the indirect effects included, total value added by volume was up by 4.8 %. In 2013, the share of direct and total value added in Flemish GDP amounted to 1.5 and 2.9 % respectively. The shares in Belgian GDP came to 0.9 and 1.7 % respectively. All these shares were one percentage point higher in 2013 than in the previous year.

However, opposing trends were evident in the two main clusters. In the maritime cluster there was a loss of value added (-2.4 %), attributable almost entirely to cargo handlers (lower operating profits and other operating charges in a few large firms in the sector). The other sectors recorded hardly any change in absolute amounts in 2013.

In contrast, in the non-maritime cluster value added was up by 7.7 %, the rise being evident in a number of sectors. The biggest increase in both percentage (+30.9 %) and absolute terms occurred in the metalworking industry and more specifically at ArcelorMittal Belgium, where the operating loss was

[57] Source: *Annual Report 2013*, Port of Ghent, and miscellaneous press articles.

much smaller and depreciation and provisions for liabilities and charges increased. In the food industry the 24.0 % increase was due mostly to Cargill, which converted a substantial loss in 2012 into a profit in 2013. In car manufacturing, both Volvo Group Belgium (truck producer) and Volvo Cars (passenger cars) recorded worthwhile growth of value added: in the former, this was due to higher turnover and an increase in the number of staff, and consequently higher staff costs, and at Volvo Cars it came from higher operating profits and an increase in staff costs. Volvo Cars has begun revising its range of models so that by 2019 it will only be making small cars. It recently also embarked on a process of insourcing, taking over certain activities from some suppliers. In 2014 it took on 160 employees from Johnson Controls, located outside the port area, for the production of interior components. In January 2015 it took over the entire staff, around 600 employees, from the logistics supplier DSV Solutions, located next to the Volvo factory. However, the biggest increase in value added in the car industry came from Plastal, which supplies plastic bumper systems for Volvo Cars and which saw a big rise in turnover in 2013.

In the chemical sector, which was more or less unchanged overall, the surge in value added at Cri Catalyst Company Belgium (producer of catalysts for the Shell group which recorded strong sales growth and almost tripled its operating result) made up for the decline at Kronos Europe (producer of titanium dioxide pigments, where turnover decreased and the operating loss doubled) and the closure at the end of 2012 of Cooper Standard Automotive Belgium (manufacturing rubber seals). Finally, the trade sector is dominated by Belgian Shell and Total Belgium; third in the ranking, Honda Europe (logistics centre for Europe, Africa and the Middle East) merged with Honda Belgium Factory from Aalst in April 2014 to form Honda Motor Europe Logistics, which now manages several hubs in Europe.

The three firms with the largest value added in the port of Ghent were the same in 2013 as in the previous year, though the order had changed: ArcelorMittal Belgium takes the lead ahead of Total Belgium and Volvo Cars. Numbers 4 to 7 are unchanged, while Cri Catalyst, Plastal and DSV Solutions enter the top 10 thanks to the excellent results mentioned above.

3.3 Employment

Direct employment in firms and in the public sector in the port of Ghent grew by 1.3 % in 2013. As a result of a 3.3 % rise in indirect employment, total employment was up by 2.4 % in 2013. The proportion of direct and total employment in Flemish employment remained stable at 1.2 and 2.6 % respectively. In relation to employment in Belgium, the shares remained also stable at 0.7 and 1.5 % respectively.

The port of Ghent maintained the growth which had begun in 2011 (+1,572 jobs in three years). In the maritime cluster, employment was virtually unchanged, and the movements within the individual sectors were also small. However, the non-maritime cluster recorded growth of around 350 FTEs in 2013 (+1.5 %), almost entirely in industry. Car manufacturing, the port's largest employer, increased its workforce for the third consecutive year. Despite the weak European passenger car market and regular periods of economic lay-offs, Volvo Cars nevertheless managed to maintain the size of its workforce. Volvo Trucks, the group's biggest European assembly plant which announced a major investment in production of heavy goods vehicles in the autumn of 2013, created additional jobs and continued that trend in 2014 with high capacity utilisation and regular overtime. The multiannual redundancy plan announced by ArcelorMittal in 2012 had no noticeable impact for the Ghent branch as yet in 2013; in contrast, employment in the metalworking industry continued to rise, partly as a result of the relocation of a large firm to the port area.

The top 10 biggest employers in the port of Ghent shows little change: the three leaders, ArcelorMittal Belgium, Volvo Cars and Volvo Group, together account for 45 % of employment in the port.

3.4 Investment

In 2013 the total amount invested in the port of Ghent came to € 34.1 million less than in 2012 (-7.4 %). In contrast to value added and employment, it is the non-maritime cluster that is declining here (-€ 47.8 million or -12.3 %), while the maritime cluster is up by € 13.6 million (+19.4 %). Part of the increase in that cluster is not attributable directly to the port of Ghent but is due to the allocation of the results of firms located outside the ports (see footnote 27). In the case of cargo handlers, the amount invested was almost € 4 million higher than in 2012. For instance, Euro Silo and Kluizendok Tank Terminal

expanded their storage capacity at the port (in cereals and oil respectively). Public sector investment (by the Flemish Region) matched the 2010 level at € 11.0 million.

The decline in the energy sector is due largely to Alco Energy, which had invested heavily in a cogeneration plant in 2012. Terranova Solar, that operates a solar energy facility, is a newcomer in 2013 but has a financial year that spans almost two years; the investment was therefore divided between the two years so that the total for the sector in 2012 is considerably higher than in the previous study. In chemicals (-€ 12.3 million) there was a marked reduction in the amount invested by Kronos Europe and Taminco. The latter company, the world's largest producer of alkylamines, announced another major investment at the end of 2013, amounting to € 60 million, which will expand its production capacity by a third. In September 2014 the company was taken over by the American Eastman Chemical Company. Air Products brought a new air separation plant into operation in April 2014, used mainly for ArcelorMittal. The largest fall (to less than half the 2012 figure) occurred in car manufacturing: it applied to all the major firms in the sector, but especially Volvo Cars, that in previous years had invested large sums in updating its stock of machinery and its industrial robots. As already stated, Volvo Cars plans to revise its range of models in the coming years. At Stora Enso Langerbrugge (other industries), a new paper sorting line was inaugurated in 2014, representing an investment of € 9 million.

As in 2012, ArcelorMittal Belgium was the biggest investor in the port of Ghent in 2013. The energy producer Terranova Solar appears from nowhere in second place, followed by Volvo Cars and BNRC Group. Phoenix Services Belgium also joins the top 5.

CHART 7 **CHANGE IN DIRECT VALUE ADDED**
(in € million, current prices)

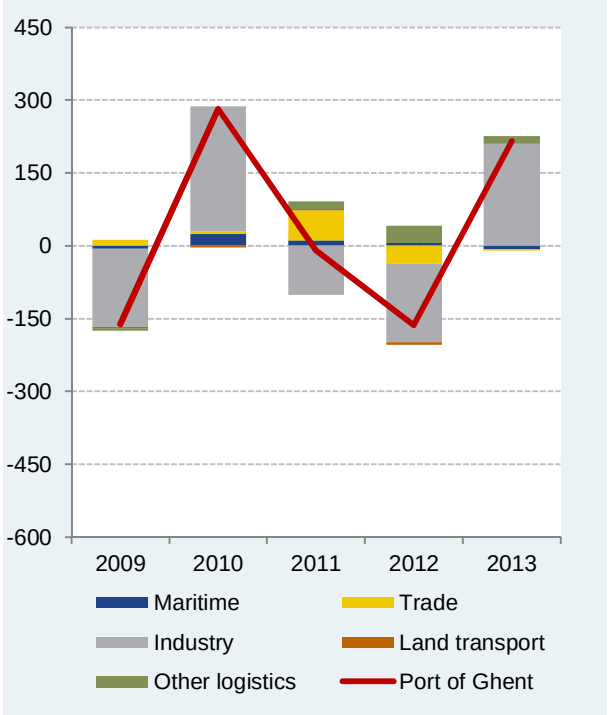
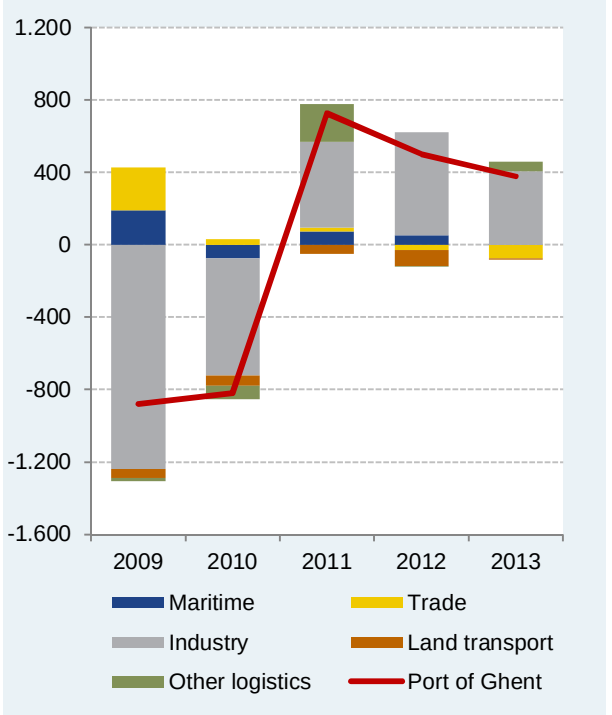


CHART 8 **CHANGE IN DIRECT EMPLOYMENT**
(FTE)



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 2008 TO 2013**
(in € million - current prices)

Sectors	2008	2009	2010	2011	2012	2013	Share in 2013 (in p.c.)	Change from 2012 to 2013 (in p.c.)	Annual average change from 2008 to 2013 (in p.c.)
DIRECT EFFECTS	**3,256.5**	**3,094.6**	**3,376.8**	**3,367.0**	**3,203.9**	**3,417.9**	**100.0**	**+ 6.7**	**+ 1.0**
MARITIME CLUSTER	**299.4**	**293.5**	**317.5**	**328.3**	**334.4**	**326.5**	**9.6**	**- 2.4**	**+ 1.7**
Shipping agents and forwarders	55.4	50.0	49.5	44.1	46.9	45.3	1.3	- 3.5	- 3.9
Cargo handling	178.5	177.3	202.0	219.9	219.1	211.4	6.2	- 3.5	+ 3.4
Shipping companies	15.5	14.6	13.5	12.4	14.6	15.5	0.5	+ 6.2	+ 0.0
Shipbuilding and repair	4.6	4.8	5.0	4.3	3.6	3.3	0.1	- 9.6	- 6.6
Port construction and dredging	-0.1	-1.1	-0.7	-0.3	0.5	1.0	0.0	+ 85.1	n.
Fishing and fish industry	0.0	0.0	0.0	0.0	0.0	0.0	0	n.	n.
Port trade	3.4	3.4	3.1	3.3	3.6	3.9	0.1	+ 10.0	+ 2.8
Port authority	24.0	23.6	25.5	24.7	23.6	23.4	0.7	- 0.6	- 0.5
Public sector	18.1	20.7	19.6	20.0	22.5	22.7	0.7	+ 0.9	+ 4.6
Allocation (p.m.)	*10.3*	*10.0*	*9.2*	*8.3*	*10.0*	*9.8*	-	*- 2.2*	*- 1.0*
NON-MARITIME CLUSTER	**2,957.0**	**2,801.1**	**3,059.3**	**3,038.7**	**2,869.5**	**3,091.4**	**90.4**	**+ 7.7**	**+ 0.9**
TRADE	743.4	755.9	761.1	823.5	786.9	785.0	23.0	- 0.2	+ 1.1
INDUSTRY	2,057.7	1,897.0	2,153.9	2,053.1	1,891.6	2,102.4	61.5	+ 11.1	+ 0.4
Energy	44.9	60.7	70.8	75.3	66.7	54.0	1.6	- 19.0	+ 3.8
Fuel production	9.3	32.9	52.2	38.9	59.1	63.9	1.9	+ 8.0	+ 47.1
Chemicals	324.1	254.2	338.6	380.0	299.4	294.8	8.6	- 1.6	- 1.9
Car manufacturing	649.3	572.1	678.3	653.0	648.3	734.0	21.5	+ 13.2	+ 2.5
Electronics	26.2	27.3	31.6	33.0	28.3	29.8	0.9	+ 5.3	+ 2.6
Metalworking industry	681.2	636.6	664.8	519.3	422.0	552.3	16.2	+ 30.9	- 4.1
Construction	90.5	87.4	102.8	100.9	111.9	108.9	3.2	- 2.7	+ 3.8
Food industry	65.8	63.6	88.2	82.3	74.0	91.7	2.7	+ 24.0	+ 6.9
Other industries	166.5	162.3	126.7	170.4	181.9	173.1	5.1	- 4.9	+ 0.8
LAND TRANSPORT	81.0	78.4	74.3	77.2	70.9	69.9	2.0	- 1.5	- 2.9
Road transport	64.9	60.1	56.5	62.8	58.2	58.7	1.7	+ 0.8	- 2.0
Other land transport	16.1	18.3	17.9	14.4	12.7	11.3	0.3	- 11.6	- 6.9
OTHER LOGISTIC SERVICES	74.9	69.8	69.9	84.8	119.9	134.0	3.9	+ 11.7	+ 12.3
INDIRECT EFFECTS	**3,676.7**	**2,761.2**	**2,903.0**	**3,201.5**	**3,098.6**	**3,285.9**	**-**	**+ 6.0**	**- 2.2**
MARITIME CLUSTER	**286.5**	**233.5**	**260.4**	**273.6**	**275.5**	**270.8**	**-**	**- 1.7**	**- 1.1**
NON-MARITIME CLUSTER	**3,390.2**	**2,527.7**	**2,642.6**	**2,927.9**	**2,823.1**	**3,015.1**	**-**	**+ 6.8**	**- 2.3**
TOTAL VALUE ADDED	**6,933.1**	**5,855.8**	**6,279.9**	**6,568.4**	**6,302.5**	**6,703.7**	**-**	**+ 6.4**	**- 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 year 2008 are based on IOT 2005 and SUT 2007. The indirect effects for the period 2009-2013 are based on IOT 2010 and SUT 2010. The use of different sources causes a break in the time series. The calculated indirect effects are approximations and should be interpreted with caution.

TABLE 24 **VALUE ADDED TOP 10 AT THE PORT OF GHENT IN 2013**

Ranking	Company name	Sector
1	ARCELORMITTAL BELGIUM	Metalworking industry
2	TOTAL BELGIUM	Trade
3	VOLVO CARS	Car manufacturing
4	VOLVO GROUP BELGIUM	Car manufacturing
5	BELGIAN SHELL	Trade
6	STORA ENSO LANGERBRUGGE	Other industries
7	TAMINCO	Chemicals
8	CRI CATALYST COMPANY BELGIUM	Chemicals
9	PLASTAL	Car manufacturing
10	DSV SOLUTIONS	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.

TABLE 25 **EMPLOYMENT AT THE PORT OF GHENT FROM 2008 TO 2013**
(FTE)

Sectors	2008	2009	2010	2011	2012	2013	Share in 2013 (in p.c.)	Change from 2012 to 2013 (in p.c.)	Annual average change from 2008 to 2013 (in p.c.)
DIRECT EFFECTS	**27,498**	**26,618**	**25,796**	**26,521**	**27,021**	**27,368**	**100.0**	**+ 1.3**	**- 0.1**
MARITIME CLUSTER	**2,778**	**2,968**	**2,892**	**2,966**	**3,017**	**3,015**	**11.0**	**- 0.1**	**+ 1.6**
Shipping agents and forwarders	614	543	525	519	530	563	2.1	+ 6.2	- 1.7
Cargo handling	1,588	1,825	1,779	1,883	1,918	1,896	6.9	- 1.1	+ 3.6
Shipping companies	71	74	78	63	67	67	0.2	+ 0.9	- 1.1
Shipbuilding and repair	68	77	72	63	58	53	0.2	- 9.0	- 4.8
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	34	37	31	28	37	36	0.1	- 2.4	+ 1.3
Port authority	150	155	160	156	156	156	0.6	+ 0.1	+ 0.9
Public sector	254	256	248	255	251	243	0.9	- 3.2	- 0.9
Allocation (p.m.)	*88*	*99*	*93*	*71*	*79*	*66*	-	*- 15.9*	*- 5.6*
NON-MARITIME CLUSTER	**24,719**	**23,650**	**22,904**	**23,555**	**24,004**	**24,353**	**89.0**	**+ 1.5**	**- 0.3**
TRADE	1,920	2,158	2,189	2,210	2,179	2,104	7.7	- 3.4	+ 1.9
INDUSTRY	20,763	19,524	18,877	19,349	19,919	20,326	74.3	+ 2.0	- 0.4
Energy	167	175	167	160	166	170	0.6	+ 2.5	+ 0.4
Fuel production	79	87	91	92	95	100	0.4	+ 4.5	+ 4.8
Chemicals	2,116	1,946	1,951	1,994	1,995	1,971	7.2	- 1.2	- 1.4
Car manufacturing	8,904	8,122	7,761	8,294	8,735	9,000	32.9	+ 3.0	+ 0.2
Electronics	250	242	240	260	257	249	0.9	- 3.2	- 0.1
Metalworking industry	6,391	6,056	5,754	5,718	5,738	5,878	21.5	+ 2.4	- 1.7
Construction	1,122	1,252	1,317	1,244	1,308	1,306	4.8	- 0.2	+ 3.1
Food industry	590	604	600	581	585	597	2.2	+ 2.0	+ 0.2
Other industries	1,144	1,040	995	1,008	1,040	1,056	3.9	+ 1.5	- 1.6
LAND TRANSPORT	1,123	1,074	1,016	966	878	843	3.1	- 3.9	- 5.6
Road transport	849	776	721	733	678	674	2.5	- 0.5	- 4.5
Other land transport	273	298	295	232	200	169	0.6	- 15.4	- 9.2
OTHER LOGISTIC SERVICES	913	894	823	1,030	1,029	1,080	3.9	+ 5.0	+ 3.4
INDIRECT EFFECTS	**39,094**	**29,595**	**30,654**	**32,348**	**32,298**	**33,353**	**-**	**+ 3.3**	**- 3.1**
MARITIME CLUSTER	**3,043**	**3,109**	**3,150**	**3,215**	**3,323**	**3,447**	**-**	**+ 3.7**	**+ 2.5**
NON-MARITIME CLUSTER	**36,051**	**26,486**	**27,504**	**29,133**	**28,974**	**29,905**	**-**	**+ 3.2**	**- 3.7**
TOTAL EMPLOYMENT	**66,592**	**56,213**	**56,451**	**58,870**	**59,319**	**60,720**	**-**	**+ 2.4**	**- 1.8**

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 year 2008 are based on IOT 2005 and SUT 2007. The indirect effects for the period 2009-2013 are based on IOT 2010 and SUT 2010. The use of different sources causes a break in the time series. The calculated indirect effects are approximations and should be interpreted with caution.

TABLE 26 **EMPLOYMENT TOP 10 AT THE PORT OF GHENT IN 2013**

Ranking	Company name	Sector
1	ARCELORMITTAL BELGIUM	Metalworking industry
2	VOLVO CARS	Car manufacturing
3	VOLVO GROUP BELGIUM	Car manufacturing
4	DSV SOLUTIONS	Cargo handling
5	DENYS	Construction
6	HONDA MOTOR EUROPE LOGISTICS	Trade
7	STORA ENSO LANGERBRUGGE	Other industries
8	TAMINCO	Chemicals
9	TOWER AUTOMOTIVE BELGIUM	Car manufacturing
10	KRONOS EUROPE	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 2008 TO 2013**
(in € million - current prices)

Sectors	2008	2009	2010	2011	2012	2013	Share in 2013 (in p.c.)	Change from 2012 to 2013 (in p.c.)	Annual average change from 2008 to 2013 (in p.c.)
MARITIME CLUSTER	**130.8**	**138.5**	**91.0**	**66.5**	**70.3**	**83.9**	**19.8**	**+ 19.4**	**- 8.5**
Shipping agents and forwarders	5.3	2.8	9.4	4.8	3.2	4.7	1.1	+ 47.0	- 2.3
Cargo handling	66.8	89.6	43.9	35.7	49.5	53.3	12.5	+ 7.5	- 4.4
Shipping companies	24.8	15.4	7.7	5.2	2.1	8.0	1.9	+ 286.8	- 20.2
Shipbuilding and repair	0.6	1.2	3.5	0.8	0.4	0.3	0.1	- 19.6	- 12.0
Port construction and dredging	0.1	0.0	0.0	0.5	0.2	0.1	0.0	- 14.8	+ 20.4
Fishing and fish industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Port trade	0.3	0.1	0.0	0.0	0.4	0.1	0.0	- 83.2	- 25.3
Port authority	19.3	21.6	15.2	9.9	6.7	6.4	1.5	- 5.6	- 19.9
Public sector	13.7	7.7	11.2	9.6	7.8	11.0	2.6	+ 41.6	- 4.2
Allocation (p.m.)	*13.9*	*9.3*	*10.6*	*8.1*	*4.4*	*8.2*	-	*+ 85.3*	*- 10.1*
NON-MARITIME CLUSTER	**582.8**	**467.5**	**413.6**	**375.1**	**388.6**	**340.8**	**80.2**	**- 12.3**	**- 10.2**
TRADE	22.4	29.4	28.8	25.1	33.2	42.6	10.0	+ 28.3	+ 13.7
INDUSTRY	526.3	404.3	349.2	304.9	309.7	251.8	59.3	- 18.7	- 13.7
Energy	120.2	136.6	110.5	33.4	35.7	27.2	6.4	- 23.7	- 25.7
Fuel production	55.9	11.7	3.9	4.2	5.7	7.2	1.7	+ 27.1	- 33.6
Chemicals	65.3	38.0	35.7	55.7	65.5	53.2	12.5	- 18.7	- 4.0
Car manufacturing	97.7	54.6	53.8	86.7	71.1	34.0	8.0	- 52.2	- 19.0
Electronics	3.9	1.3	1.8	1.2	1.1	0.9	0.2	- 17.2	- 25.9
Metalworking industry	77.3	56.5	59.4	64.5	71.8	70.8	16.7	- 1.3	- 1.7
Construction	13.7	20.5	16.7	28.3	22.2	15.5	3.6	- 30.2	+ 2.5
Food industry	30.2	21.1	12.0	15.1	16.1	17.3	4.1	+ 7.4	- 10.6
Other industries	62.1	63.9	55.3	15.6	20.8	25.6	6.0	+ 23.5	- 16.2
LAND TRANSPORT	20.5	14.6	11.8	20.9	30.8	27.7	6.5	- 10.2	+ 6.2
Road transport	17.0	13.4	6.0	9.5	7.0	10.4	2.5	+ 49.7	- 9.3
Other land transport	3.5	1.2	5.7	11.4	23.9	17.3	4.1	- 27.6	+ 37.4
OTHER LOGISTIC SERVICES	13.5	19.3	23.8	24.3	14.8	18.7	4.4	+ 26.4	+ 6.7
DIRECT INVESTMENT	**713.6**	**606.0**	**504.6**	**441.7**	**458.8**	**424.7**	**100.0**	**- 7.4**	**- 9.9**

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 2013**

Ranking	Company name	Sector
1	ARCELORMITTAL BELGIUM	Metalworking industry
2	TERRANOVA SOLAR	Energy
3	VOLVO CARS	Car manufacturing
4	BNRC GROUP	Other land transport
5	PHOENIX SERVICES OF BELGIUM	Metalworking industry
6	TAMINCO	Chemicals
7	VOLVO GROUP BELGIUM	Car manufacturing
8	PUBLIC SECTOR	Public sector
9	HONDA MOTOR EUROPE LOGISTICS	Trade
10	KLUIZENDOK TANK TERMINAL	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.

4 PORT OF OSTEND

4.1 Port developments[58]

After maritime traffic had fallen by almost 17 % in 2012, the port of Ostend faced a further decline of 43.1 % to 1.8 million tonnes in 2013. Roll-on/roll-off traffic, that represented 56 % of the total tonnage in 2012, accounted for almost the whole of the 1.4 million tonne fall in relation to that year, the reason being the termination of car and passenger ferry services to Ramsgate (United Kingdom) since April 2013 as a result of the bankruptcy of the operator, Transeuropa Ferries, ending the cross-Channel link after 170 years. General cargo was more or less steady in 2013, with traffic almost entirely geared to Europe, but unsurprisingly the number of passengers carried was down by 70.4 %. However, Ostend is aiming to attract more cruise ships; 17 visited the port in 2014, and a new cruise terminal is under construction.

While ro-ro traffic still totalled 442,000 tonnes in the initial months of 2013, its complete disappearance in 2014 meant a loss of total transhipment in the port of 21.3 % to 1.4 million tonnes. However, the remaining traffic did well, with an increase of 4 % originating mainly from expansion in dry bulk.

In recent years, in order to counteract the loss of traditional maritime activities, the port of Ostend has positioned itself as an “Energy Port”, in an attempt to take advantage of the operation and maintenance of wind farms at sea (known as “blue energy”). In the long run, keeping these installations running could generate additional jobs[59]. In that context, the Ostend port authority - acting jointly with the Flanders Participation Fund and private partners - set up Rebo (Renewable Energy Base Ostend) in 2012, with the aim of providing facilities for offshore activities. For instance, a fully-equipped site was set up where Alstom assembled the world’s largest wind turbine in 2013. The offshore business has also led to an increase in the number of shipping movements, more particularly in the case of service vessels. The sector is also putting its hopes in the recent approval of the Stevin project, whereby wind energy produced at sea will be linked to the hinterland via a high voltage cable.

4.2 Value added

The direct value added produced by the port of Ostend was up by 1.0 % in 2013 (-0.5 % by volume). The negative contribution of the indirect effects (-4.1 % by volume) caused the total value added to decline by 0.8 % (-2.3 % by volume). As in previous years direct value added and total value added represented respectively 0.2 and 0.4 % of Flemish GDP. In 2013, the share of direct and total value added in Belgian GDP amounted to 0.1 and 0.2 % respectively.

The growth of value added in 2013 was driven by the maritime cluster, which recorded a 3.7 % increase. That growth was due to three sectors which together account for two-thirds of the total in the cluster: port construction and dredging (higher provisions for liabilities and charges at Baggerwerken Decloedt), fishing and fish industry (higher operating result at a number of large firms), and to a lesser extent shipbuilding and repair. The bankruptcy of Transeuropa Ferries (see 4.1) eliminated the representative of the shipowner from the shipping agents and forwarders category (-€ 1.7 million). The Ostend port authority posted a much heavier operating loss in 2013 (€ 4.0 million).

In the non-maritime cluster value added dipped slightly by 0.5 %. The largest falls occurred in construction (bankruptcy of Pyra Th. en Zonen and halving of the operating profit of the biggest firm in the sector, Verhelst Aannemingen), energy (negative value added at Biopower Ostend owing to a very substantial operating loss) and other logistic services (negative value added at Oostende Trade and a marked fall at Tractebel Engineering as a result of staff reductions). This sector also includes Electrawinds[60], which in the space of a few years progressed from being a wind farm developer and diversified, establishing solar farms and biomass power stations in numerous countries; it got into

[58] Sources: *Annual Report 2013*, Port of Ostend, and miscellaneous press articles.

[59] This study only covers energy production and any associated administrative activity in so far as it takes place within the port area. Offshore activities are therefore disregarded in calculating the various parameters.

[60] For Electrawinds, value added and employment were estimated on the basis of the ONSS employment figures, as no annual accounts had been submitted for 2013 when this study was concluded.

serious difficulties in 2013. During 2014 most of its assets (offshore wind farms and biomass and incineration plants) were sold off; the remaining business consists solely of solar and wind power farms on land. Conversely, in the case of Daikin Europe, the dominant player in the metalworking industry, a combination of factors (including higher turnover and increased staff costs) boosted value added in this sector by € 7.3 million. Finally, the € 2.5 million increase in value added in the chemical industry is due largely to Proviron Functional Chemicals, which saw a big increase in sales in 2013 (better conditions on the biodiesel market) and succeeded in converting its 2012 operating loss into a hefty profit.

The ranking of the top firms for value added was unchanged in relation to 2012, except for tenth position where the chemical firm Proviron Basic Chemicals is replaced by the chocolate producer Natrajacali. Daikin Europe still heads the top ten.

4.3 Employment

Following strong growth in 2012, direct employment in the port of Ostend remained more or less steady in 2013 (-35 FTEs or -0.7 %). The total of direct and indirect employment in 2013 was down by 1.5 %. As in the previous year, the workforce in the firms under review at the port corresponded to 0.2 % of employment in the Flemish Region. Total employment – direct plus indirect employment – came to 0.5 % of Flemish employment, the same share as in 2012. In 2013, direct and total employment represented 0.1 and 0.3 % respectively of Belgian employment.

The small increase in the maritime cluster was negated by a somewhat bigger decline in the non-maritime segment. The most significant positive movements occurred in fishing and fish industry (+30 FTEs), metalworking industry (+49 FTEs, as a result of expansion of the workforce at Daikin Europe) and the public sector (+17 FTEs, mainly in the maritime police and the maritime brigade). In shipping agents and forwarders the main reason for the decline in the workforce was the disappearance of the representative of Transeuropa Ferries (see 4.1). In construction, much of the fall (-39 FTEs) is due to the bankruptcy of Pyra Th. en Zonen. Finally, the job losses at Tractebel Engineering had a big impact on the result of other logistic services (-44 FTEs).

Daikin Europa is still by far the biggest employer in the port of Ostend (with more than a quarter of the port total), followed by the public sector and Baggerwerken Decloedt. The contractor Van Huele Gebroeders enters the top 10, displacing Morubel (frozen seafood).

4.4 Investment

After remaining steady for several years at between € 90 and 100 million per annum, investment in the port of Ostend was 22.0 % down in 2013 at € 75.9 million. That decline was evident in most of the major sectors, but especially in the non-maritime cluster (-28.2 %).

The amount invested by Baggerwerken Decloedt (port construction and dredging), which had been running at over € 20 million per annum in 2009-2010 and subsequently slumped to just over € 3 million in 2012, had dropped to barely € 0.2 million in 2013. In fishing and fish industry, energy, chemicals, construction and in other logistic services, a number of large firms had invested less than in the previous year. In the metalworking industry, Daikin Europe almost halved its investment, but that was largely offset by Verhelst Machines. In contrast, the public sector stepped up its investment by almost € 2 million, much of it being devoted to completion of the new dams in the outer harbour.

In the ranking of the biggest investors in the port of Ostend, Daikin Europe changed places with the public sector; the latter heads the list in 2013, while Verhelst Machines enters the top 10 at number 3.

CHART 9 **CHANGE IN DIRECT VALUE ADDED**
(in € million, current prices)

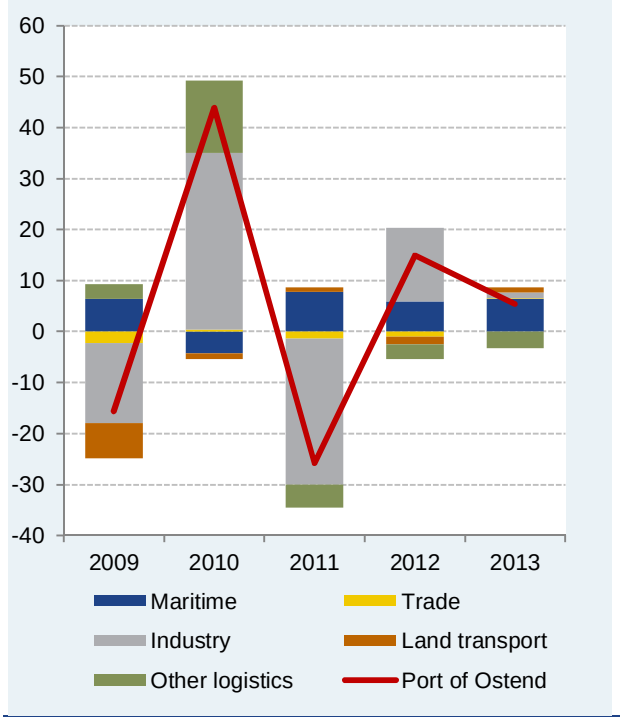
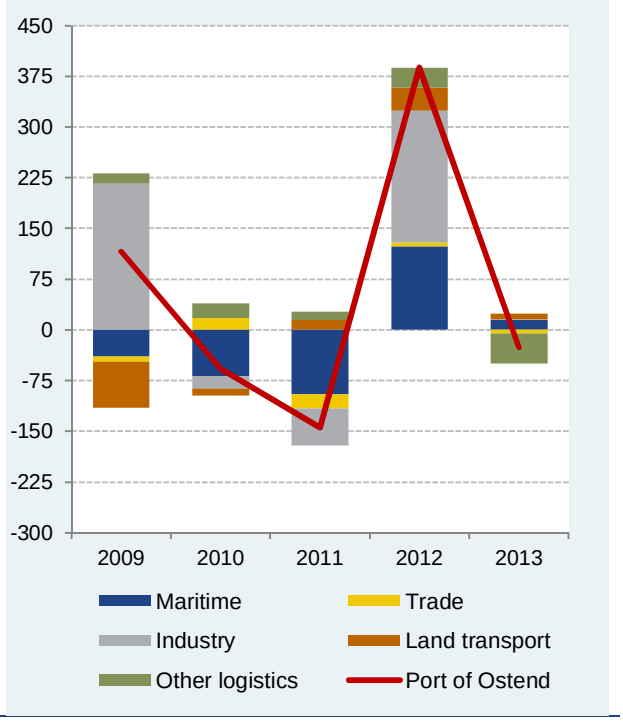


CHART 10 **CHANGE IN DIRECT EMPLOYMENT**
(FTE)



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

TABLE 29 **VALUE ADDED AT THE PORT OF OSTEND FROM 2008 TO 2013**
(in € million - current prices)

Sectors	2008	2009	2010	2011	2012	2013	Share in 2013 (in p.c.)	Change from 2012 to 2013 (in p.c.)	Annual average change from 2008 to 2013 (in p.c.)
DIRECT EFFECTS	**470.0**	**454.3**	**498.3**	**472.4**	**487.3**	**492.1**	**100.0**	**+ 1.0**	**+ 0.9**
MARITIME CLUSTER	**158.8**	**165.3**	**161.0**	**168.7**	**174.7**	**181.2**	**36.8**	**+ 3.7**	**+ 2.7**
Shipping agents and forwarders	3.7	5.2	5.2	5.0	7.7	5.2	1.1	- 32.8	+ 7.0
Cargo handling	7.2	2.6	2.6	2.1	4.0	3.3	0.7	- 16.4	- 14.3
Shipping companies	9.0	0.2	0.2	0.4	0.2	0.3	0.1	+ 101.1	- 48.8
Shipbuilding and repair	12.3	13.3	14.3	13.5	13.3	14.9	3.0	+ 12.1	+ 3.9
Port construction and dredging	41.9	55.4	47.7	61.1	63.1	65.7	13.4	+ 4.1	+ 9.4
Fishing and fish industry	36.6	38.4	40.2	36.1	34.1	38.5	7.8	+ 13.0	+ 1.1
Port trade	0.3	0.4	0.4	0.4	0.5	0.5	0.1	- 13.1	+ 9.4
Port authority	4.6	3.0	3.2	2.0	3.6	2.3	0.5	- 36.3	- 13.1
Public sector	43.2	46.8	47.2	48.0	48.2	50.5	10.3	+ 4.6	+ 3.2
Allocation (p.m.)	*11.2*	*11.5*	*12.9*	*11.3*	*9.6*	*11.6*	-	*+ 20.0*	*+ 0.7*
NON-MARITIME CLUSTER	**311.2**	**289.1**	**337.3**	**303.7**	**312.6**	**310.9**	**63.2**	**- 0.5**	**- 0.0**
TRADE	19.5	17.3	17.7	16.4	15.3	15.4	3.1	+ 0.7	- 4.6
INDUSTRY	253.7	237.9	272.5	243.9	258.2	259.3	52.7	+ 0.4	+ 0.4
Energy	-6.1	13.6	28.5	23.0	19.9	15.0	3.0	- 24.6	n.
Fuel production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Chemicals	34.5	38.5	39.3	33.3	36.2	38.7	7.9	+ 6.7	+ 2.3
Car manufacturing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Electronics	1.0	1.0	1.2	0.7	0.8	1.3	0.3	+ 73.8	+ 5.1
Metalworking industry	203.0	154.9	174.5	151.0	151.9	159.2	32.4	+ 4.8	- 4.7
Construction	5.7	15.6	16.2	19.2	36.1	31.9	6.5	- 11.6	+ 41.0
Food industry	6.1	6.2	5.3	7.5	6.9	7.2	1.5	+ 4.4	+ 3.5
Other industries	9.4	8.1	7.5	9.0	6.4	6.0	1.2	- 5.9	- 8.7
LAND TRANSPORT	30.9	24.0	22.9	23.9	22.5	22.8	4.6	+ 1.5	- 5.9
Road transport	28.8	24.0	22.9	23.9	21.9	22.8	4.6	+ 4.3	- 4.6
Other land transport	2.1	0.0	0.0	0.0	0.6	0.0	0.0	- 100.0	n.
OTHER LOGISTIC SERVICES	7.0	9.8	24.1	19.5	16.6	13.4	2.7	- 19.7	+ 13.7
INDIRECT EFFECTS	**409.2**	**427.7**	**439.4**	**469.5**	**483.6**	**470.7**	**-**	**- 2.7**	**+ 2.8**
MARITIME CLUSTER	**122.5**	**181.2**	**166.9**	**202.5**	**201.4**	**194.7**	**-**	**- 3.3**	**+ 9.7**
NON-MARITIME CLUSTER	**286.7**	**246.5**	**272.5**	**266.9**	**282.2**	**276.0**	**-**	**- 2.2**	**- 0.8**
TOTAL VALUE ADDED	**879.1**	**882.0**	**937.7**	**941.9**	**970.9**	**962.8**	**-**	**- 0.8**	**+ 1.8**

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 year 2008 are based on IOT 2005 and SUT 2007. The indirect effects for the period 2009-2013 are based on IOT 2010 and SUT 2010. The use of different sources causes a break in the time series. The calculated indirect effects are approximations and should be interpreted with caution.

TABLE 30 **VALUE ADDED TOP 10 AT THE PORT OF OSTEND IN 2013**

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	MORUBEL	Fishing and fish industry
8	ALGEMENE ONDERNEMINGEN SOETAERT	Construction
9	BELGIAN NAVY	Public sector
10	NATRAJACALI	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 31 **EMPLOYMENT AT THE PORT OF OSTEND FROM 2008 TO 2013**
(FTE)

Sectors	2008	2009	2010	2011	2012	2013	Share in 2013 (in p.c.)	Change from 2012 to 2013 (in p.c.)	Annual average change from 2008 to 2013 (in p.c.)
DIRECT EFFECTS	**4,888**	**5,004**	**4,947**	**4,803**	**5,191**	**5,156**	**100.0**	**- 0.7**	**+ 1.1**
MARITIME CLUSTER	**2,143**	**2,104**	**2,035**	**1,940**	**2,064**	**2,079**	**40.3**	**+ 0.7**	**- 0.6**
Shipping agents and forwarders	55	72	68	67	61	18	0.4	- 69.9	- 19.8
Cargo handling	164	125	91	59	71	70	1.4	- 0.3	- 15.6
Shipping companies	34	1	1	1	0	0	0.0	n.	n.
Shipbuilding and repair	249	245	243	222	206	216	4.2	+ 4.9	- 2.8
Port construction and dredging	352	348	352	370	531	534	10.4	+ 0.5	+ 8.7
Fishing and fish industry	498	505	496	425	424	454	8.8	+ 7.1	- 1.8
Port trade	5	6	6	7	8	8	0.1	- 5.0	+ 7.9
Port authority	46	44	40	43	44	42	0.8	- 5.7	- 2.0
Public sector	741	757	739	746	719	736	14.3	+ 2.3	- 0.1
Allocation (p.m.)	*173*	*160*	*158*	*136*	*127*	*150*	-	*+ 17.5*	*- 2.9*
NON-MARITIME CLUSTER	**2,745**	**2,900**	**2,912**	**2,863**	**3,127**	**3,078**	**59.7**	**- 1.6**	**+ 2.3**
TRADE	203	195	213	191	196	190	3.7	- 2.8	- 1.2
INDUSTRY	2,017	2,233	2,215	2,161	2,356	2,357	45.7	+ 0.0	+ 3.2
Energy	34	50	59	68	69	68	1.3	- 1.2	+ 15.3
Fuel production	0	0	0	0	0	0	0.0	n.	n.
Chemicals	416	440	393	336	325	314	6.1	- 3.2	- 5.5
Car manufacturing	0	0	0	0	0	0	0.0	n.	n.
Electronics	12	12	23	11	10	11	0.2	+ 14.0	- 1.0
Metalworking industry	1,293	1,322	1,317	1,319	1,318	1,367	26.5	+ 3.7	+ 1.1
Construction	101	224	241	252	472	433	8.4	- 8.2	+ 33.7
Food industry	88	107	105	104	101	95	1.8	- 6.4	+ 1.4
Other industries	73	77	78	70	62	69	1.3	+ 11.2	- 1.1
LAND TRANSPORT	421	352	342	357	391	390	7.6	- 0.2	- 1.5
Road transport	385	352	342	357	381	390	7.6	+ 2.2	+ 0.2
Other land transport	35	0	0	0	9	0	0.0	- 100.0	n.
OTHER LOGISTIC SERVICES	105	120	142	154	184	140	2.7	- 23.9	+ 5.9
INDIRECT EFFECTS	**4,498**	**4,623**	**4,785**	**4,648**	**5,502**	**5,375**	**-**	**- 2.3**	**+ 3.6**
MARITIME CLUSTER	**1,599**	**1,644**	**1,730**	**1,622**	**1,970**	**1,952**	**-**	**- 0.9**	**+ 4.1**
NON-MARITIME CLUSTER	**2,898**	**2,980**	**3,055**	**3,025**	**3,532**	**3,423**	**-**	**- 3.1**	**+ 3.4**
TOTAL EMPLOYMENT	**9,386**	**9,628**	**9,732**	**9,451**	**10,693**	**10,532**	**-**	**- 1.5**	**+ 2.3**

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 year 2008 are based on IOT 2005 and SUT 2007. The indirect effects for the period 2009-2013 are based on IOT 2010 and SUT 2010. The use of different sources causes a break in the time series. The calculated indirect effects are approximations and should be interpreted with caution.

TABLE 32 **EMPLOYMENT TOP 10 AT THE PORT OF OSTEND IN 2013**

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	VAN HUELE GEBROEDERS	Port construction and dredging
10	CLEMACO CONTRACTING	Shipbuilding and repair

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 2008 TO 2013**
(in € million - current prices)

Sectors	2008	2009	2010	2011	2012	2013	Share in 2013 (in p.c.)	Change from 2012 to 2013 (in p.c.)	Annual average change from 2008 to 2013 (in p.c.)
MARITIME CLUSTER	**90.2**	**78.2**	**49.0**	**24.4**	**27.9**	**26.0**	**34.3**	**- 6.7**	**- 22.0**
Shipping agents and forwarders	1.5	1.3	0.1	0.9	0.4	2.0	2.7	+ 417.6	+ 5.8
Cargo handling	3.2	0.9	0.2	5.5	2.1	2.5	3.3	+ 17.2	- 5.0
Shipping companies	3.0	0.0	0.1	0.2	0.0	0.1	0.2	+ 548.5	- 47.3
Shipbuilding and repair	1.8	1.6	1.4	2.3	0.8	2.1	2.7	+ 144.9	+ 3.1
Port construction and dredging	55.7	28.9	24.8	2.6	3.4	0.3	0.4	- 90.5	- 64.2
Fishing and fish industry	7.7	7.0	9.4	6.7	9.1	5.8	7.6	- 36.5	- 5.7
Port trade	0.0	0.0	0.0	0.0	0.1	0.0	0.0	n.	n.
Port authority	3.0	1.6	0.9	2.0	2.0	1.5	2.0	- 23.3	- 12.2
Public sector	14.1	37.0	12.1	4.2	9.9	11.7	15.4	+ 17.7	- 3.8
Allocation (p.m.)	*4.3*	*4.2*	*5.3*	*4.2*	*4.7*	*3.9*	-	*- 16.9*	*- 2.0*
NON-MARITIME CLUSTER	**95.4**	**46.4**	**51.9**	**67.2**	**69.4**	**49.8**	**65.7**	**- 28.2**	**- 12.2**
TRADE	3.9	2.7	2.8	4.8	5.8	4.2	5.5	- 27.6	+ 1.6
INDUSTRY	81.0	32.3	39.2	45.4	40.4	34.8	45.8	- 13.9	- 15.6
Energy	56.3	8.9	21.4	13.2	2.1	0.2	0.3	- 89.7	- 67.1
Fuel production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Chemicals	7.1	1.8	3.5	5.7	9.2	6.6	8.7	- 28.6	- 1.5
Car manufacturing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Electronics	0.0	0.1	0.1	0.5	0.1	1.1	1.4	+ 879.1	n.
Metalworking industry	12.6	15.5	5.9	13.8	16.3	15.4	20.4	- 5.0	+ 4.2
Construction	0.9	4.1	5.6	5.7	10.9	9.0	11.8	- 17.6	+ 57.5
Food industry	0.7	0.2	0.6	0.8	0.8	0.8	1.1	+ 8.9	+ 3.5
Other industries	3.3	1.7	2.1	5.7	1.0	1.7	2.2	+ 60.9	- 12.8
LAND TRANSPORT	5.1	2.7	4.0	5.9	6.4	5.3	6.9	- 17.4	+ 0.6
Road transport	5.1	2.7	2.9	5.5	6.4	5.1	6.7	- 19.6	+ 0.1
Other land transport	0.0	0.0	1.2	0.4	0.0	0.1	0.2	n.	n.
OTHER LOGISTIC SERVICES	5.4	8.7	5.8	11.1	16.9	5.6	7.4	- 66.6	+ 1.0
DIRECT INVESTMENT	**185.6**	**124.6**	**100.9**	**91.6**	**97.3**	**75.9**	**100.0**	**- 22.0**	**- 16.4**

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 2013**

Ranking	Company name	Sector
1	PUBLIC SECTOR	Public sector
2	DAIKIN EUROPE	Metalworking industry
3	VERHELST MACHINES	Metalworking industry
4	TOPASFALT	Construction
5	PROVIRON FUNCTIONAL CHEMICALS	Chemicals
6	ALGEMENE ONDERNEMINGEN SOETAERT	Construction
7	DE BRUYCKER	Trade
8	GREENBRIDGE INCUBATIE-EN INNOVATIECENTRUM GENT-OOSTENDE	Other logistic services
9	VERHELST AANNEMINGEN	Construction
10	ORAC	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.

5 PORT OF ZEEBRUGGE

5.1 Port developments[61]

Maritime traffic at the port of Zeebrugge has been declining since 2010; between 2010 and 2013 it was down by 6.8 million tonnes. The year 2013 ended at 42.8 million tonnes (-1.6 % against the previous year), with a decline of just 0.7 % in 2014. Over two-thirds of the traffic is intra-European, while Asia is the origin or destination of 21 %.

More than three-quarters of the tonnage shipped in 2013 consisted of containers and roll-on/roll-off (48.2 and 30.7 % respectively). The latter segment comprises some twenty daily freight services, mainly to Britain. Zeebrugge is Europe's biggest port for car shipments, after Bremerhaven, and handled 2.2 million vehicles in 2014. That was 13 % higher than the 2013 figure of 1.9 million, and equalled the record total for 2007 which had subsequently fallen sharply as a result of the economic crisis.

Following the decline in 2011, container traffic has also been rising again for three years now, expanding by 0.5 % in tonnage and 3.7 % in volume (TEU) in 2013. The 0.5 % growth was maintained in 2014. However, events in this sphere have recently been less favourable for the port of Zeebrugge. The new scheduled services to the Far East operated by the Maersk Line and MSC 2M alliance (see 2.1) no longer call at Zeebrugge, while Evergreen also dropped the port from its scheduled routes in 2014. At the beginning of 2015, CMA-CGM likewise announced the termination of services between Zeebrugge and both Saint Petersburg and Britain. The port authority estimates the combined loss of container traffic at 20 to 30 % in 2015.

Dry bulk and non-containerised general cargo each account for less than 3 % of total traffic, while liquid bulk makes up around 15 %. This last category comprises a wide variety of products, such as fruit juice (Zeebrugge is a major port of importation) and liquid gas. The port of Zeebrugge is a gas distribution platform supplying around 15 % of the north-west European market. Gas is delivered in liquid form by gas tankers, mainly from Qatar, and distributed across the Belgian network via the Fluxys terminal. Owing to the sluggish global economy and better prices on the Asian markets, LNG deliveries were down by 21.5 % in 2013, and that was a major factor in the overall decline in traffic. Gas is also supplied by pipeline from the North Sea gas fields, most of it being passed on to other European countries. In March 2015 Fluxys concluded an agreement on the supply of Russian gas to be shipped by tanker from the North Pole region; ultimately, that could double the supply of gas entering the port.

Following a decline from 2008, passenger traffic has risen again since 2010, reaching a record total of over 800,000 in 2013. Ferry traffic to and from the British Isles and cruise traffic each account for half of that figure, with cruise traffic taking an increasing share. In 2014 the port received 107 cruise ships, often carrying visitors for Bruges. As in Ostend, a new cruise terminal will be opened here shortly.

In regard to infrastructure projects, the renovation and deepening of the Albert II dock in the western outer harbour was completed; this development is intended to double the container traffic capacity by 2030 (though that prospect has now been jeopardised by the recent decisions on the part of the large container shipping companies, see above). The first phase of the deepening and renovation work on the Container Handling Zeebrugge east quay has also been completed. The SHIP project (Strategic Harbour Infrastructure Project) involves constructing a new sea lock to replace the old Visart lock and filling in a number of disused docks in order to develop new sites for shortsea activities.

5.2 Value added

The direct value added of the port of Zeebrugge rose by 3.8 % against 2012 (+2.3 % by volume). As a result of a larger increase in indirect value added, the total value added grew by 5.2 % by volume. Direct and total value added in 2013 represented 0.4 and 0.8 % respectively of the GDP of the Flemish Region. In relation to Belgian GDP, the figures for 2013 amounted to 0.2 and 0.5 % respectively.

[61] Source: *Annual Report 2013* of the Zeebrugge Port Authority, and miscellaneous press articles.

Both the maritime and the non-maritime cluster shared in the growth of value added. The € 10 million increase in the case of shipping agents and forwarders was attributable to several firms, but primarily to ECS European Containers, which recorded an increase in its turnover, staff costs and operating profit. In port construction and dredging the growth was generated mainly by better operating profits, namely at Artes Depret. In shipping companies, much of the growth came from the allocation of the results of businesses outside the ports (see footnote 27). For some years now, cargo handling has been generating value added between € 200 and 210 million, and that increased slightly in 2013. That is the outcome of a number of (fairly small) positive and negative changes in some large firms, primarily as a result of fluctuations in the operating result.

In the non-maritime cluster, the decline in trade was due to the biggest company in that sector, Total Belgium. In industry, much of the growth came from electronics, namely TP Vision Belgium, where there was a big reduction in depreciation and value adjustments. In 2012, TP Vision had taken over the Bruges branch of Philips Innovative Applications, but closed it down in June 2014 in order to downsize and relocate to Ghent (Zwijnaarde). In the food industry, the growth of € 4.7 million was almost entirely attributable to P.B.I. Fruit Juice Company, which increased its turnover and staff costs. Road transport had to contend with restructuring and staff cuts (-66 FTEs) at DD Trans (De Dijcker Group), which reduced value added by € 4.1 million.

The value added top 10 was significantly different from the 2012 ranking. The Belgian Navy and Fluxys LNG still head the list, but TP Vision Belgium appears at number three while Total Belgium, which used to be in third place, disappears from the top 10. Other newcomers are P.B.I. Fruit Juice Company and Wallenius Wilhelmsen Logistics Zeebrugge.

5.3 Employment

Direct employment at the port of Zeebrugge was down by 1.9 % in 2013. Indirect employment edged upwards by 0.1 %, limiting the decline in total employment to 0.9 %. The proportion of direct and total employment in Flemish employment remained stable at 0.4 and 0.9 % respectively. The share of direct employment in Belgian employment also remained stable at 0.2 %, as well as the share of total employment (0.5 %).

The years of declining direct employment in the port of Zeebrugge still persisted in 2013: the number of jobs was down by a further 188 FTEs, spread across both clusters. In the maritime cluster, the fall was only 0.2 % (-13 FTEs). In fishing and fish industry, the workforce at Marine Harvest Pieters was scaled down, but in contrast it expanded slightly at the sister company of Marine Harvest VAP Europe (classified under other logistic services). Cargo handling recorded a decline in the contingent of dock workers (at CEWEZ), but there was a substantial increase in staff at Wallenius Wilhelmsen Logistics, which concluded a new contract with Toyota Motor Europe for the shipping of cars. The public sector, represented mainly by the Belgian Navy, is still the one with the port's largest employment, after cargo handling.

In the non-maritime cluster, the main job losses were in electronics (staff cuts at TP Vision Belgium) and road transport (restructuring at DD Trans, see 5.2). In the food industry, the growth was due to P.B.I. Fruit Juice Company, which enters the employment top 10 in the port of Zeebrugge, ousting Belgian New Fruit Wharf. The other businesses in this ranking are unchanged, although sometimes the order is different: the Belgian Navy remains the port's biggest employer, followed by three cargo handlers.

5.4 Investment

After declining in 2011 and 2012, investment in the port of Zeebrugge was down by a further 11.9 % (-12.8 % by volume), but nearly the whole of this fall occurred in the maritime cluster. In the case of cargo handlers, where investment had been in decline since 2011, the downward trend continued in 2013 (with a fall of € 9.6 million). Verbrugge Terminals Zeebrugge, based in Vlissingen and still insignificant in the port of Zeebrugge in 2013, announced substantial investments in steel product storage at the end of that year; this activity was launched in November 2014. While Marine Harvest Pieters invested heavily in 2013, the 2012 investment of over € 7 million by the fishery shipping company Zeemansblik subsided to zero the next year, which explains the halving of investment in fishing and fish industry. Finally, the Zeebrugge Port Authority and the Flemish Region (public sector) continued to invest substantial amounts in various infrastructure projects in 2013 (see 5.1).

In the non-maritime cluster, the growth in energy comes from Fluxys LNG, which invested in a second LNG jetty, scheduled to come into service in 2015. In the food industry and other industries, the decline is due to the completion of several large investment projects, particularly the expansion of the P.B.I. Fruit Juice Company production lines and the installation of a new condensing turbine at IVBO. In the ranking of the biggest investors in the port, the companies and institutions in the top four change places: Fluxys LNG now takes the lead, ahead of Zeebrugge Port Authority, Belgian Railways and the public sector (primarily the Flemish Region).

CHART 11 **CHANGE IN DIRECT VALUE ADDED**
(in € million, current prices)

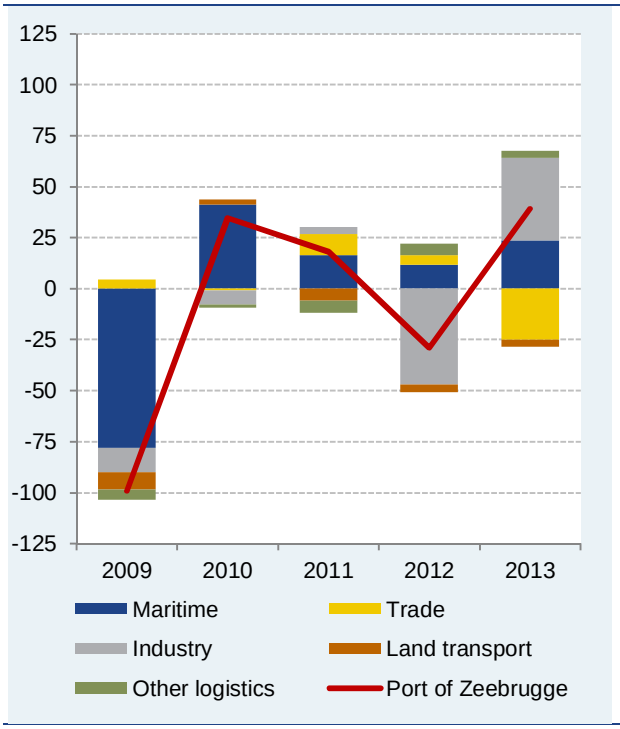
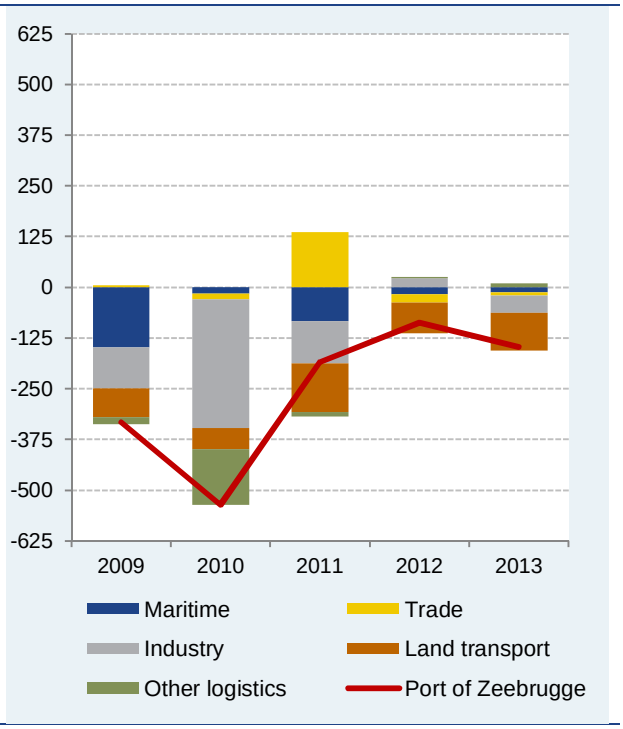


CHART 12 **CHANGE IN DIRECT EMPLOYMENT**
(FTE)



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 2008 TO 2013**
(in € million - current prices)

Sectors	2008	2009	2010	2011	2012	2013	Share in 2013 (in p.c.)	Change from 2012 to 2013 (in p.c.)	Annual average change from 2008 to 2013 (in p.c.)
DIRECT EFFECTS	**1,027.0**	**927.9**	**962.5**	**980.7**	**951.8**	**988.1**	**100.0**	**+ 3.8**	**- 0.8**
MARITIME CLUSTER	**530.2**	**452.2**	**493.4**	**509.8**	**521.5**	**545.0**	**55.2**	**+ 4.5**	**+ 0.6**
Shipping agents and forwarders	49.8	53.4	39.8	41.1	50.4	60.3	6.1	+ 19.5	+ 3.9
Cargo handling	214.5	187.4	204.0	206.6	207.3	209.9	21.2	+ 1.3	- 0.4
Shipping companies	63.3	9.5	30.1	42.6	41.9	49.0	5.0	+ 16.9	- 5.0
Shipbuilding and repair	8.7	7.8	9.4	9.1	9.6	9.3	0.9	- 3.1	+ 1.4
Port construction and dredging	13.6	13.8	18.9	16.6	20.9	25.7	2.6	+ 22.9	+ 13.5
Fishing and fish industry	43.1	42.7	47.7	48.7	48.4	45.8	4.6	- 5.3	+ 1.2
Port trade	0.6	0.6	0.6	0.5	0.6	1.1	0.1	+ 73.6	+ 13.6
Port authority	31.1	31.8	33.5	35.2	34.1	32.5	3.3	- 4.7	+ 0.9
Public sector	105.5	105.3	109.3	109.3	108.2	111.5	11.3	+ 3.0	+ 1.1
Allocation (p.m.)	*13.5*	*10.5*	*15.2*	*19.7*	*20.0*	*21.3*	-	*+ 6.7*	*+ 9.5*
NON-MARITIME CLUSTER	**496.9**	**475.7**	**469.1**	**470.9**	**430.3**	**443.1**	**44.8**	**+ 3.0**	**- 2.3**
TRADE	84.5	88.9	88.1	98.5	103.1	78.0	7.9	- 24.3	- 1.6
INDUSTRY	299.8	287.7	280.9	284.1	237.1	277.7	28.1	+ 17.1	- 1.5
Energy	80.0	92.1	97.6	107.4	95.0	92.5	9.4	- 2.6	+ 2.9
Fuel production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Chemicals	29.4	27.6	30.0	31.0	28.3	32.2	3.3	+ 14.1	+ 1.9
Car manufacturing	0.5	0.3	0.4	0.5	0.7	0.9	0.1	+ 20.2	+ 13.2
Electronics	69.9	70.2	52.6	55.1	23.8	54.7	5.5	+ 129.6	- 4.8
Metalworking industry	7.4	6.2	8.4	8.3	8.3	6.4	0.6	- 22.7	- 2.9
Construction	43.1	34.9	33.6	25.0	22.3	23.1	2.3	+ 3.2	- 11.8
Food industry	30.0	20.2	24.5	24.3	27.7	32.4	3.3	+ 17.0	+ 1.5
Other industries	39.6	36.2	33.9	32.6	31.1	35.6	3.6	+ 14.5	- 2.1
LAND TRANSPORT	83.2	74.7	77.3	71.5	67.6	61.5	6.2	- 9.1	- 5.9
Road transport	67.7	60.5	63.7	60.5	58.1	54.3	5.5	- 6.6	- 4.3
Other land transport	15.5	14.2	13.6	11.0	9.5	7.2	0.7	- 24.8	- 14.3
OTHER LOGISTIC SERVICES	29.4	24.4	22.8	16.8	22.4	25.9	2.6	+ 15.6	- 2.5
INDIRECT EFFECTS	**811.1**	**677.0**	**717.7**	**793.7**	**789.4**	**871.7**	**-**	**+ 10.4**	**+ 1.5**
MARITIME CLUSTER	**431.5**	**336.3**	**389.3**	**445.8**	**454.0**	**520.5**	**-**	**+ 14.6**	**+ 3.8**
NON-MARITIME CLUSTER	**379.6**	**340.7**	**328.4**	**347.9**	**335.3**	**351.2**	**-**	**+ 4.7**	**- 1.5**
TOTAL VALUE ADDED	**1,838.1**	**1,604.9**	**1,680.2**	**1,774.4**	**1,741.2**	**1,859.9**	**-**	**+ 6.8**	**+ 0.2**

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 year 2008 are based on IOT 2005 and SUT 2007. The indirect effects for the period 2009-2013 are based on IOT 2010 and SUT 2010. The use of different sources causes a break in the time series. The calculated indirect effects are approximations and should be interpreted with caution.

TABLE 36 **VALUE ADDED TOP 10 AT THE PORT OF ZEEBRUGGE IN 2013**

Ranking	Company name	Sector
1	BELGIAN NAVY	Public sector
2	FLUXYS LNG	Energy
3	TP VISION BELGIUM	Electronics
4	ZEEBRUGGE PORT AUTHORITY	Port authority
5	COBELFRET FERRIES	Shipping companies
6	INTERNATIONAL CAR OPERATORS	Cargo handling
7	C.RO PORTS ZEEBRUGGE	Cargo handling
8	PUBLIC SECTOR	Public sector
9	P.B.I. FRUIT JUICE COMPANY	Food industry
10	WALLENIUS WILHELMSEN LOGISTICS ZEEBRUGGE	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.

TABLE 37 **EMPLOYMENT AT THE PORT OF ZEEBRUGGE FROM 2008 TO 2013**
(FTE)

Sectors	2008	2009	2010	2011	2012	2013	Share in 2013 (in p.c.)	Change from 2012 to 2013 (in p.c.)	Annual average change from 2008 to 2013 (in p.c.)
DIRECT EFFECTS	**11,047**	**10,715**	**10,179**	**9,996**	**9,908**	**9,720**	**100.0**	**- 1.9**	**- 2.5**
MARITIME CLUSTER	**6,352**	**6,204**	**6,189**	**6,106**	**6,090**	**6,077**	**62.5**	**- 0.2**	**- 0.9**
Shipping agents and forwarders	545	550	531	545	579	593	6.1	+ 2.5	+ 1.7
Cargo handling	2,697	2,637	2,675	2,611	2,675	2,691	27.7	+ 0.6	- 0.0
Shipping companies	312	311	257	228	182	174	1.8	- 4.3	- 11.0
Shipbuilding and repair	132	131	135	130	132	123	1.3	- 6.6	- 1.4
Port construction and dredging	189	180	177	181	180	172	1.8	- 4.6	- 1.9
Fishing and fish industry	622	579	585	606	609	573	5.9	- 5.9	- 1.6
Port trade	10	9	9	9	10	12	0.1	+ 25.8	+ 3.2
Port authority	141	138	133	134	132	134	1.4	+ 1.6	- 1.0
Public sector	1,705	1,669	1,687	1,663	1,591	1,604	16.5	+ 0.8	- 1.2
Allocation (p.m.)	*254*	*207*	*293*	*294*	*324*	*327*	-	*+ 1.0*	*+ 5.2*
NON-MARITIME CLUSTER	**4,695**	**4,511**	**3,990**	**3,889**	**3,818**	**3,642**	**37.5**	**- 4.6**	**- 5.0**
TRADE	591	596	581	717	696	689	7.1	- 1.0	+ 3.1
INDUSTRY	2,423	2,324	2,007	1,902	1,924	1,881	19.4	- 2.2	- 4.9
Energy	122	114	127	127	129	125	1.3	- 3.3	+ 0.5
Fuel production	0	0	0	0	0	0	0.0	n.	n.
Chemicals	267	260	239	246	252	262	2.7	+ 3.8	- 0.4
Car manufacturing	12	12	10	10	10	10	0.1	- 2.9	- 3.5
Electronics	541	524	324	358	354	309	3.2	- 12.7	- 10.6
Metalworking industry	136	129	136	136	135	119	1.2	- 12.0	- 2.7
Construction	460	454	443	364	354	354	3.6	+ 0.2	- 5.1
Food industry	307	305	285	260	273	293	3.0	+ 7.4	- 0.9
Other industries	578	526	443	401	416	408	4.2	- 1.7	- 6.7
LAND TRANSPORT	1,337	1,265	1,212	1,092	1,017	880	9.1	- 13.4	- 8.0
Road transport	1,075	1,032	986	915	867	773	7.9	- 10.9	- 6.4
Other land transport	263	232	225	177	149	108	1.1	- 28.0	- 16.4
OTHER LOGISTIC SERVICES	344	327	190	178	182	192	2.0	+ 5.4	- 11.0
INDIRECT EFFECTS	**11,600**	**11,411**	**10,861**	**10,635**	**10,484**	**10,495**	**-**	**+ 0.1**	**- 2.0**
MARITIME CLUSTER	**7,051**	**6,963**	**6,759**	**6,440**	**6,390**	**6,523**	**-**	**+ 2.1**	**- 1.5**
NON-MARITIME CLUSTER	**4,549**	**4,448**	**4,102**	**4,195**	**4,094**	**3,972**	**-**	**- 3.0**	**- 2.7**
TOTAL EMPLOYMENT	**22,647**	**22,126**	**21,040**	**20,631**	**20,392**	**20,215**	**-**	**- 0.9**	**- 2.2**

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 year 2008 are based on IOT 2005 and SUT 2007. The indirect effects for the period 2009-2013 are based on IOT 2010 and SUT 2010. The use of different sources causes a break in the time series. The calculated indirect effects are approximations and should be interpreted with caution.

TABLE 38 **EMPLOYMENT TOP 10 AT THE PORT OF ZEEBRUGGE IN 2013**

Ranking	Company name	Sector
1	BELGIAN NAVY	Public sector
2	C.RO PORTS ZEEBRUGGE	Cargo handling
3	WALLENIUS WILHELMSEN LOGISTICS ZEEBRUGGE	Cargo handling
4	INTERNATIONAL CAR OPERATORS	Cargo handling
5	PUBLIC SECTOR	Public sector
6	MARINE HARVEST PIETERS	Fishing and fish industry
7	TP VISION BELGIUM	Electronics
8	P.B.I. FRUIT JUICE COMPANY	Food industry
9	I.V.B.O.	Other industries
10	CONTAINER HANDLING ZEEBRUGGE	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.

TABLE 39 **INVESTMENT AT THE PORT OF ZEEBRUGGE FROM 2008 TO 2013**
(in € million - current prices)

Sectors	2008	2009	2010	2011	2012	2013	Share in 2013 (in p.c.)	Change from 2012 to 2013 (in p.c.)	Annual average change from 2008 to 2013 (in p.c.)
MARITIME CLUSTER	**131.1**	**105.9**	**216.0**	**151.1**	**122.1**	**95.9**	**45.2**	**- 21.5**	**- 6.1**
Shipping agents and forwarders	7.8	6.3	17.0	5.7	5.1	2.4	1.1	- 53.4	- 21.2
Cargo handling	43.1	34.9	106.4	52.9	43.6	34.0	16.0	- 22.0	- 4.6
Shipping companies	2.7	1.2	9.1	1.8	0.9	3.2	1.5	+ 274.5	+ 3.5
Shipbuilding and repair	3.4	2.8	1.1	1.7	1.2	1.1	0.5	- 10.1	- 20.5
Port construction and dredging	2.1	2.0	2.1	2.3	2.5	2.4	1.1	- 2.9	+ 3.1
Fishing and fish industry	12.1	10.2	13.0	11.0	14.8	7.2	3.4	- 51.7	- 9.9
Port trade	0.1	0.1	0.1	0.2	0.0	1.0	0.5	n.	+ 55.2
Port authority	30.4	27.3	34.2	33.6	34.0	28.3	13.3	- 16.7	- 1.4
Public sector	29.5	21.0	32.9	42.0	20.0	16.4	7.7	- 18.2	- 11.1
Allocation (p.m.)	*13.6*	*12.9*	*32.2*	*31.4*	*25.4*	*25.0*	-	*- 1.6*	*+ 13.0*
NON-MARITIME CLUSTER	**133.2**	**78.6**	**120.2**	**127.1**	**118.9**	**116.4**	**54.8**	**- 2.1**	**- 2.7**
TRADE	5.8	9.4	11.0	13.7	13.1	9.5	4.5	- 27.3	+ 10.4
INDUSTRY	84.7	50.3	71.6	65.9	69.6	68.3	32.2	- 1.9	- 4.2
Energy	38.3	14.8	38.1	27.1	24.4	44.0	20.7	+ 80.8	+ 2.8
Fuel production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Chemicals	5.3	2.2	2.8	4.7	3.4	3.3	1.6	- 2.4	- 9.0
Car manufacturing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Electronics	7.5	5.8	7.3	5.9	4.7	5.5	2.6	+ 18.4	- 6.0
Metalworking industry	1.0	0.7	0.3	0.4	0.4	0.6	0.3	+ 48.5	- 11.1
Construction	8.0	6.1	6.5	5.5	4.1	2.4	1.1	- 41.5	- 21.4
Food industry	18.7	14.9	6.1	6.4	15.2	4.7	2.2	- 69.1	- 24.2
Other industries	5.8	5.8	10.6	15.9	17.5	7.8	3.7	- 55.6	+ 5.9
LAND TRANSPORT	28.0	12.4	25.8	40.6	33.1	28.9	13.6	- 12.5	+ 0.7
Road transport	25.4	11.2	15.4	15.5	7.9	12.5	5.9	+ 57.6	- 13.2
Other land transport	2.6	1.2	10.4	25.0	25.2	16.5	7.8	- 34.6	+ 45.0
OTHER LOGISTIC SERVICES	14.8	6.5	11.8	7.1	3.1	9.6	4.5	+ 207.5	- 8.2
DIRECT INVESTMENT	**264.3**	**184.4**	**336.2**	**278.3**	**241.1**	**212.3**	**100.0**	**- 11.9**	**- 4.3**

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 2013**

Ranking	Company name	Sector
1	FLUXYS LNG	Energy
2	ZEEBRUGGE PORT AUTHORITY	Port authority
3	BNRC GROUP	Other land transport
4	PUBLIC SECTOR	Public sector
5	NORTH SEA EXPRESS	Road transport
6	TP VISION BELGIUM	Electronics
7	I.V.B.O.	Other industries
8	MARINE HARVEST PIETERS	Fishing and fish industry
9	C.RO PORTS ZEEBRUGGE	Cargo handling
10	FLUXYS BELGIUM	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 developments[62]

In 2013, inland waterway traffic in Wallonia was down by 5 % against the previous year. Following the sharp decline in 2012 (-15.3 %) the port of Liège also saw its water-borne cargo traffic diminish by a further 9.3 %. The Autonomous Port of Liège managed to limit the loss to 4.9 %, while on the privately operated quays (which together handle less than 10 % of the total traffic) the fall came to 32.9 %[63]. A major factor here was the termination of the warm-phase activities of the ArcelorMittal steel group during 2012. After a 14 % decline in 2012, the Autonomous Port nevertheless managed to achieve 11 % growth in container traffic in 2013.

Despite the persistently weak economy and the further dismantling of ArcelorMittal's activities (the closure of a coking plant and some cold lines), cargo transhipment staged a very modest recovery in 2014 (+0.3 % overall and +2.3 % in the Autonomous Port), with particularly strong growth in container traffic (+16 %). Liège thus confirmed its position as the third biggest European inland port, after Duisburg and Paris.

For the future development of the port of Liège, hopes are centring on Trilogiport, a 100 hectare multimodal platform located beside the Albert Canal in the north of the port. A container terminal and various logistics sites should strengthen links by water, rail and road with Antwerp, Rotterdam and Dunkirk. The work began in the summer of 2013, and Trilogiport should be fully operational by the autumn of 2015. Regarding links with other ports, it should also be mentioned that in March 2014 the Autonomous Port of Liège, the Antwerp Port Authority and the waterway manager De Scheepvaart concluded a cooperation agreement on the occasion of the 75th anniversary of the Albert Canal, which links the ports of Liège and Antwerp.

6.2 Value added

The direct value added of the Liège port complex in 2013 was up by 0.4 % (-1.1 % by volume). Total value added, which includes the part generated upstream of the firms under review, increased by 1.6 % (+0.1 % by volume). The share of direct value added in the GDP of the Walloon Region was 1.3 % and the share of total value added (direct and indirect) amounted to 2.7 %. As a ratio of Belgian GDP these figures represent 0.3 and 0.6 % respectively. All these shares are unchanged compared to 2012.

In the maritime cluster, which is fairly insignificant in the port of Liège (only 2 % of total value added), the € 5.9 million fall was attributable to shipping agents and forwarders and to shipping companies. In the former sector, Magetra was taken over by Magetra International which is located outside the port area, while in the latter the inland shipping company Somef saw its business decline as a result of the crisis in the steel industry and the associated fall in demand for the transportation of commodities.

In the metalworking industry (non-maritime cluster), which accounts for over a quarter of the total value added generated in the Liège port area, the loss was limited to around € 4 million, but that conceals wide variations in the results for a number of large firms. For instance, the weak market in steel and pressure on prices were the reasons for a decline in output and turnover at Engineering Steel Belgium, exacerbating the already substantial operating loss and causing value added to fall by € 2.9 million[64]. CMI (Cockerill Maintenance & Ingenierie), a supplier of equipment for the steel industry, also saw its total turnover fall by over 30 % and posted a much lower operating profit, so that value added was also down by 14 %. However, these falls were more than offset by ArcelorMittal Belgium, which – despite lower turnover on account of falling prices and volumes – still achieved value added growth of 26 %,

[62] Source: www.portdeliege.be, *Press releases 26 February 2014 and 4 March 2015* from the Liège Port Authority, and miscellaneous press articles.

[63] The Autonomous Port of Liège manages the public port areas (32 in total) and is a public utility institution. A number of quays are also operated by private firms.

[64] In the summer of 2014 the German parent group of Engineering Steel Belgium announced that it intended to close the Liège establishment; at the beginning of 2015 a buyer was found in the Luxembourg holding company REM.

thanks to a marked improvement in the operating loss, higher provisions for liabilities and charges, and the absence of the substantial write-back on value adjustments and provisions carried out in 2012.

In trade, the decline at Total Belgium was partly offset by a more than doubling of value added at Terval, that specialises in importing and handling high-grade coal, and recorded a strong rise in its turnover and operating profit. There are two firms in the energy sector: Electrabel remained stable, whereas EDF Luminus declined as a result of a fall in the number of jobs in the port area and a general reduction in its operating profit. The increase in the case of fuel production was attributable entirely to the bioethanol producer Biowanze. At the largest company in the chemicals sector, the phosphate producer Prayon, trade margins improved sharply, bringing a marked reduction in the operating loss. On the other hand, the sector saw the bankruptcy of BFAN, a packaging film producer. Intradel (waste treatment, other industries) succeeded in converting the heavy operating loss of 2012 into a profit in 2013 (+€ 3.5 million in value added). At Valdunes Belux (production of railway equipment, same sector) the opposite happened; the struggling German parent company was taken over in June 2014 by an Italian company in the same sector.

In 2013 the value added top 10 in the Liège port complex comprised the same companies as in 2012, with the exception of Raffinerie Tirlemontoise as the only newcomer (replacing Imerys Mineraux Belgique). Electrabel and ArcelorMittal Belgium again head the list, and Prayon is up from fifth to third place.

6.3 Employment

The decline in direct employment in the Liège port complex which had begun in 2012 persisted in 2013 (-701 FTEs or -7.3 %) and total employment (including the indirect effects) was also down by 5.6 %. Direct employment represented 0.8 % of domestic employment in the Walloon Region in 2013, total (direct and indirect) employment amounted to 2.1 % of Walloon employment (both one percentage point lower than a year earlier). In relation to employment in Belgium, the shares held steady at 0.2 % (direct employment) and 0.6 % (total employment).

The maritime cluster was down by 53 FTEs; these job losses occurred among shipping agents and forwarders (mostly due to Magetra, see 6.2) and in cargo handling (relocation of some of the activities outside the port area in the case of Euroports Inland Terminals). However, the decline in the non-maritime cluster, and especially in the metalworking industry (-590 FTEs), was more significant. Apart from CMI, the main factor was ArcelorMittal, which – as stated in section 6.1 – dismantled some of its activities in Liège. In chemicals, employment was hit by the bankruptcy of BFAN, while the number of jobs at Prayon was virtually unchanged. The arrival of Global Maintenance Industries in the port area led to growth in the workforce of other logistic services.

There was also little change in the ranking of the largest employers in the Liège port complex in 2013. The top five remain the same, with ArcelorMittal Belgium well in the lead, while Biowanze replaces Engineering Steel Belgium.

6.4 Investment

Following a rise in 2011 and 2012, investment in the Liège port complex was down by 13.2 % in 2013. In percentage terms, the largest fall was in the maritime cluster (-48.0 %), although the amounts involved here were relatively small. Nonetheless, the amount invested by the Liège Port Authority dropped to almost zero (-€ 3 million). Conversely, Euroports Inland Terminals (cargo handling) invested in the Trilogiport container terminal (see 6.1), but in the summer of 2014 it sold its stake in this terminal to Dubai Ports World.

Much of the decline in investment in chemicals occurred at Silox, a producer of zinc and sulphur chemicals, which had brought a new liquefaction plant into service at the end of 2012. In the metalworking industry, ArcelorMittal scaled down its investment, but the biggest fall occurred at Engineering Steel Belgium, which in 2012 had invested exceptionally heavily in a new dedusting system. Energy and construction were the only industrial sectors to increase their investment. As in 2012, Electrabel and ArcelorMittal Belgium were the biggest investors in the Liège port area.

CHART 13 **CHANGE IN DIRECT VALUE ADDED**
(in € million, current prices)

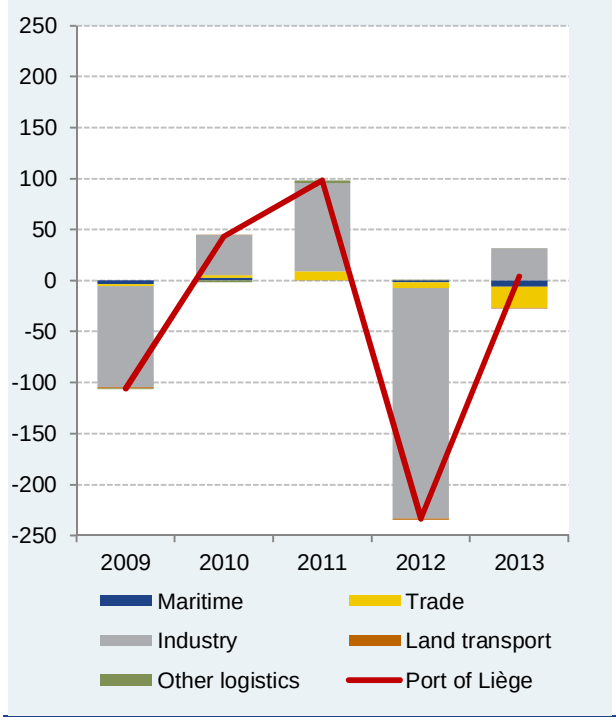
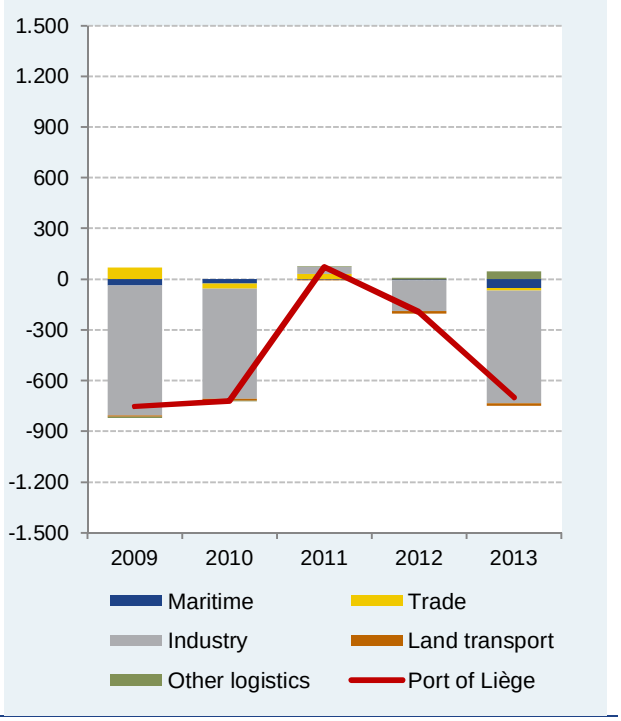


CHART 14 **CHANGE IN DIRECT EMPLOYMENT**
(FTE)



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

TABLE 41 **VALUE ADDED AT THE LIÈGE PORT COMPLEX FROM 2008 TO 2013**
(in € million - current prices)

Sectors	2008	2009	2010	2011	2012	2013	Share in 2013 (in p.c.)	Change from 2012 to 2013 (in p.c.)	Annual average change from 2008 to 2013 (in p.c.)
DIRECT EFFECTS	**1,415.4**	**1,309.3**	**1,352.7**	**1,451.0**	**1,217.4**	**1,221.8**	**100.0**	**+ 0.4**	**- 2.9**
MARITIME CLUSTER	**33.3**	**29.8**	**32.3**	**32.3**	**30.5**	**24.6**	**2.0**	**- 19.4**	**- 5.9**
Shipping agents and forwarders	8.5	9.2	11.6	11.7	10.2	5.3	0.4	- 48.1	- 9.0
Cargo handling	16.2	14.3	13.9	13.8	13.2	13.0	1.1	- 1.1	- 4.2
Shipping companies	5.7	3.4	3.9	3.8	4.0	3.0	0.2	- 26.7	- 12.1
Shipbuilding and repair	0.6	0.4	0.4	0.5	0.5	0.6	0.0	+ 24.0	- 0.8
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	2.5	2.5	2.4	2.6	2.7	2.7	0.2	+ 3.4	+ 2.3
Public sector	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n,	n,
Allocation (p.m.)									
NON-MARITIME CLUSTER	**1,382.1**	**1,279.6**	**1,320.4**	**1,418.6**	**1,187.0**	**1,197.2**	**98.0**	**+ 0.9**	**- 2.8**
TRADE	80.7	78.7	81.6	90.5	85.1	64.4	5.3	- 24.4	- 4.4
INDUSTRY	1,276.9	1,178.0	1,217.1	1,304.2	1,078.0	1,109.5	90.8	+ 2.9	- 2.8
Energy	342.0	450.5	453.1	536.0	421.3	403.5	33.0	- 4.2	+ 3.4
Fuel production	-3.9	-10.7	-5.3	42.4	34.6	59.7	4.9	+ 72.3	n.
Chemicals	192.4	62.3	126.5	119.7	97.8	116.9	9.6	+ 19.5	- 9.5
Car manufacturing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Electronics	8.6	7.7	8.5	10.3	9.4	8.9	0.7	- 5.6	+ 0.6
Metalworking industry	499.5	444.8	412.0	383.8	339.0	335.2	27.4	- 1.1	- 7.7
Construction	150.5	143.5	133.2	128.8	103.0	104.1	8.5	+ 1.1	- 7.1
Food industry	33.3	25.1	22.8	20.5	23.1	29.4	2.4	+ 27.3	- 2.5
Other industries	54.5	54.9	66.2	62.8	49.8	51.8	4.2	+ 4.1	- 1.0
LAND TRANSPORT	9.7	8.3	8.5	8.5	7.2	6.4	0.5	- 11.0	- 8.0
Road transport	8.6	7.2	7.5	7.5	6.3	5.4	0.4	- 13.9	- 8.8
Other land transport	1.1	1.1	1.0	1.0	0.9	1.0	0.1	+ 9.6	- 2.2
OTHER LOGISTIC SERVICES	14.7	14.5	13.2	15.5	16.7	16.9	1.4	+ 1.6	+ 2.9
INDIRECT EFFECTS	**1,364.5**	**1,212.0**	**1,204.6**	**1,407.2**	**1,277.2**	**1,312.6**	**-**	**+ 2.8**	**- 0.8**
MARITIME CLUSTER	**37.8**	**26.4**	**29.5**	**28.9**	**27.3**	**22.2**	**-**	**- 18.8**	**- 10.1**
NON-MARITIME CLUSTER	**1,326.7**	**1,185.6**	**1,175.1**	**1,378.3**	**1,249.9**	**1,290.4**	**-**	**+ 3.2**	**- 0.6**
TOTAL VALUE ADDED	**2,779.9**	**2,521.3**	**2,557.2**	**2,858.1**	**2,494.7**	**2,534.4**	**-**	**+ 1.6**	**- 1.8**

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 year 2008 are based on IOT 2005 and SUT 2007. The indirect effects for the period 2009-2013 are based on IOT 2010 and SUT 2010. The use of different sources causes a break in the time series. The calculated indirect effects are approximations and should be interpreted with caution.

TABLE 42 **VALUE ADDED TOP 10 AT THE LIÈGE PORT COMPLEX IN 2013**

Ranking	Company name	Sector
1	ELECTRABEL	Energy
2	ARCELORMITTAL BELGIUM	Metalworking industry
3	PRAYON	Chemicals
4	COCKERILL MAINTENANCE & INGENIERIE	Metalworking industry
5	EDF LUMINUS	Energy
6	BIOWANZE	Fuel production
7	CIMENTERIES CBR	Construction
8	CARRIERES ET FOURS A CHAUX DUMONT-WAUTIER	Construction
9	RAFFINERIE TIRLEMONTOISE	Food industry
10	TOTAL BELGIUM	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.

TABLE 43 **EMPLOYMENT AT THE LIÈGE PORT COMPLEX FROM 2008 TO 2013**
(FTE)

Sectors	2008	2009	2010	2011	2012	2013	Share in 2013 (in p.c.)	Change from 2012 to 2013 (in p.c.)	Annual average change from 2008 to 2013 (in p.c.)
DIRECT EFFECTS	**11,203**	**10,450**	**9,729**	**9,801**	**9,606**	**8,905**	**100.0**	**- 7.3**	**- 4.5**
MARITIME CLUSTER	**422**	**386**	**360**	**356**	**349**	**296**	**3.3**	**- 15.3**	**- 6.9**
Shipping agents and forwarders	109	107	100	86	97	62	0.7	- 35.9	- 10.7
Cargo handling	182	170	162	170	151	138	1.5	- 9.1	- 5.4
Shipping companies	78	63	52	55	54	51	0.6	- 4.5	- 8.1
Shipbuilding and repair	14	9	10	10	9	9	0.1	- 3.8	- 8.8
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	39	37	36	36	38	36	0.4	- 5.3	- 1.6
Public sector	0	0	0	0	0	0	0.0	n.	n.
Allocation (p.m.)									
NON-MARITIME CLUSTER	**10,781**	**10,064**	**9,369**	**9,444**	**9,257**	**8,610**	**96.7**	**- 7.0**	**- 4.4**
TRADE	294	364	336	367	369	355	4.0	- 3.9	+ 3.8
INDUSTRY	10,109	9,340	8,687	8,727	8,546	7,880	88.5	- 7.8	- 4.9
Energy	1,265	1,300	1,283	1,281	1,298	1,306	14.7	+ 0.6	+ 0.6
Fuel production	13	92	128	124	122	122	1.4	+ 0.4	+ 55.9
Chemicals	1,060	1,071	1,078	1,085	1,075	1,004	11.3	- 6.6	- 1.1
Car manufacturing	0	0	0	0	0	0	0.0	n.	n.
Electronics	134	120	116	127	127	123	1.4	- 2.9	- 1.7
Metalworking industry	5,980	5,165	4,439	4,461	4,336	3,746	42.1	- 13.6	- 8.9
Construction	987	905	921	900	867	853	9.6	- 1.6	- 2.9
Food industry	113	90	83	94	98	99	1.1	+ 1.0	- 2.5
Other industries	558	597	639	656	622	626	7.0	+ 0.5	+ 2.3
LAND TRANSPORT	177	170	158	156	141	127	1.4	- 9.8	- 6.5
Road transport	158	152	141	140	126	112	1.3	- 11.5	- 6.7
Other land transport	19	18	17	16	14	15	0.2	+ 4.9	- 4.5
OTHER LOGISTIC SERVICES	201	190	189	193	201	248	2.8	+ 23.3	+ 4.3
INDIRECT EFFECTS	**16,173**	**13,615**	**13,899**	**14,253**	**13,827**	**13,214**	**-**	**- 4.4**	**- 4.0**
MARITIME CLUSTER	**635**	**479**	**461**	**458**	**459**	**405**	**-**	**- 11.8**	**- 8.6**
NON-MARITIME CLUSTER	**15,539**	**13,136**	**13,438**	**13,795**	**13,367**	**12,809**	**-**	**- 4.2**	**- 3.8**
TOTAL EMPLOYMENT	**27,376**	**24,065**	**23,628**	**24,054**	**23,433**	**22,119**	**-**	**- 5.6**	**- 4.2**

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 year 2008 are based on IOT 2005 and SUT 2007. The indirect effects for the period 2009-2013 are based on IOT 2010 and SUT 2010. The use of different sources causes a break in the time series. The calculated indirect effects are approximations and should be interpreted with caution.

TABLE 44 **EMPLOYMENT TOP 10 AT THE LIÈGE PORT COMPLEX IN 2013**

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	CARRIERES ET FOURS A CHAUX DUMONT-WAUTIER	Construction
7	CIMENTERIES CBR	Construction
8	EDF LUMINUS	Energy
9	SEGAL	Metalworking industry
10	BIOWANZE	Fuel production

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 AT THE LIÈGE PORT COMPLEX FROM 2008 TO 2013**
(in € million - current prices)

Sectors	2008	2009	2010	2011	2012	2013	Share in 2013 (in p.c.)	Change from 2012 to 2013 (in p.c.)	Annual average change from 2008 to 2013 (in p.c.)
MARITIME CLUSTER	**10.4**	**3.3**	**3.7**	**5.0**	**8.0**	**4.2**	**2.0**	**- 48.0**	**- 16.7**
Shipping agents and forwarders	4.2	0.8	1.2	1.8	2.1	0.4	0.2	- 79.6	- 36.4
Cargo handling	4.4	2.2	1.9	2.2	2.3	3.3	1.6	+ 42.5	- 5.8
Shipping companies	0.8	0.2	0.3	0.7	0.5	0.4	0.2	- 24.6	- 12.5
Shipbuilding and repair	0.1	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	0.9	0.1	0.3	0.2	3.0	0.0	0.0	- 99.9	- 67.4
Public sector	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Allocation (p.m.)									
NON-MARITIME CLUSTER	**424.4**	**563.0**	**185.9**	**203.1**	**235.0**	**206.9**	**98.0**	**- 12.0**	**- 13.4**
TRADE	3.3	6.6	5.1	7.5	4.7	2.8	1.3	- 40.2	- 3.0
INDUSTRY	414.4	553.5	176.1	190.2	222.3	199.1	94.3	- 10.4	- 13.6
Energy	41.5	131.5	63.4	86.0	84.4	93.9	44.5	+ 11.2	+ 17.7
Fuel production	142.8	51.8	16.8	10.5	7.6	5.9	2.8	- 22.9	- 47.2
Chemicals	41.8	41.3	36.4	20.2	26.6	21.5	10.2	- 19.3	- 12.5
Car manufacturing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Electronics	0.6	0.3	0.5	0.7	2.4	0.5	0.2	- 79.0	- 1.8
Metalworking industry	58.8	35.7	24.7	40.9	68.3	40.1	19.0	- 41.3	- 7.4
Construction	23.0	14.0	23.8	20.4	17.1	22.3	10.6	+ 29.9	- 0.6
Food industry	1.4	1.6	1.1	1.6	1.7	1.9	0.9	+ 10.0	+ 6.8
Other industries	104.6	277.3	9.3	9.9	14.1	13.1	6.2	- 7.0	- 34.0
LAND TRANSPORT	4.4	1.7	1.6	2.6	1.0	2.0	0.9	+ 109.1	- 14.8
Road transport	3.6	0.9	1.0	1.8	0.4	1.1	0.5	+ 158.7	- 21.7
Other land transport	0.8	0.8	0.6	0.8	0.5	0.9	0.4	+ 72.0	+ 2.3
OTHER LOGISTIC SERVICES	2.2	1.2	3.2	2.9	7.1	3.0	1.4	- 58.0	+ 5.7
DIRECT INVESTMENT	**434.7**	**566.3**	**189.7**	**208.0**	**243.0**	**211.0**	**100.0**	**- 13.2**	**- 13.5**

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 2013**

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

7 PORT OF BRUSSELS

7.1 Port developments[65]

Following the decline in 2012, goods traffic per ship in the port of Brussels dropped by a further 6.1 % to 4.3 million tonnes in 2013 ("own traffic"). If transit traffic is taken into account, i.e. the goods that pass through the port without being loaded or unloaded, then there was modest growth amounting to 2.6 % (to a total of 6.6 million tonnes). The decrease in own traffic concerned almost all categories of cargo except oil products (unchanged at 27 % of total traffic) and chemicals and foodstuffs (small increase). There was a notable 8 % fall in building materials which in themselves accounted for 55 % of the total. Container traffic was also down 18 % in volume (TEU), partly as a result of the change in the container terminal operator on 1 July 2013. More than half of the waterborne traffic (59 %) originates from or is destined for the Netherlands, 28.5 % is domestic traffic, and Germany and France complete the list of trading partners with shares of 9.5 and 3 % respectively.

In 2014 the overall picture was the opposite: own traffic increased by 2.7 % to 4.4 million tonnes, but transit traffic was down slightly. Containers declined by a further 4 %, but building materials recovered, and with growth of 17 % they represented no less than 62 % of total traffic. The port authority is promoting inland navigation for major building projects in the region, and the growth in the last category therefore consisted largely of excavated soil.

The year 2013 marked the twentieth anniversary of the Brussels Port Authority. A new management contract was concluded with the Brussels Region for the period 2013-2018 and a master plan was launched for the period up to 2030. Among other things, that plan focuses on urban distribution, roll-on/roll-off for the export of second-hand cars, and river and canal cruises. In December 2012 the port authority had already concluded an agreement with the Brussels Region and the Brussels-Capital Regional Development Company[66] for the development of Tour & Taxis sites to create a sustainable economic port area. During 2014 a trial project was launched on retail supplies for the city, and the national postal operator embarked on preparations for a distribution centre in the outer harbour, in both cases with a clear emphasis on use of the waterways.

7.2 Value added

Direct value added of the port of Brussels was down by 10.7 % in 2013 compared to the previous year, and by 11.3 % if the indirect effects are also taken into account (-12.0 and -12.6 % by volume respectively). Direct value added represented 0.7 % of the GDP of the Brussels Capital Region, or 0.1 percentage point less than in 2012, and the share of total value added was down by 0.2 percentage point to 1.2 %. The share of direct and total value added in the national GDP was 0.1 and 0.2 % respectively.

81 % of this not inconsiderable decline of € 57.7 million is attributable to two companies in the non-maritime cluster. Spie Belgium, active in technical installations for building, and previously included in the construction sector, transferred its office outside the port area defined in the study; the associated jobs and value added were therefore excluded from this study with effect from 2013. Total Belgium experienced the same phenomenon as in a number of other ports: a reduction in the local workforce accompanied by lower value added for the business as a whole led to a marked fall in value added in the trade sector.

Otherwise, the said cluster is largely dominated by various Solvay group companies based at the Solvay site in the northern port area; together they account for 34 % of the total direct value added of the Brussels port area, and 26 % of employment. They are mainly active in research and administration, and are included in the other logistic services and trade sectors (and to a lesser extent in the chemicals sector). This last sector includes the pharmaceutical producer, Peptisyntha, which was sold to ICIG, one of its competitors in the sector, in the summer of 2013. In 2013 their combined value added was also

[65] Sources: www.portdebruxelles.be, *Annual Report 2013* of the Brussels Port Authority and press release, miscellaneous press articles.

[66] Now named Citydev.brussels.

down by € 3.6 million. The decline in other industries is due largely to a fall in turnover and provisions for liabilities and charges at Bruxelles Energie, which generates energy from non-recyclable waste. Road transport was affected by the bankruptcy of ATU Transport.

In the maritime cluster, which represents only 5.7 % of the total value added, a number of firms in the shipping agents and forwarders sector recorded poorer operating results in 2013. The Brussels port authority converted 2012's negative value added into a positive figure by a write-back from the provisions for liabilities and charges. As in 2012, Solvay heads the ranking of the largest businesses in terms of value added, followed by Aquiris (water treatment). The top 10 includes two other Solvay group companies.

7.3 Employment

Employment in the port of Brussels recorded a decline in 2013 corresponding to the fall in value added: direct employment was down by 9.6 %, and total job losses came to 11.8 % if indirect employment is included. The share of direct and total employment in employment in the Brussels Region stood at 0.7 and 1.4 % respectively. The share in Belgian domestic employment remained unchanged at 0.1 % for direct employment and at 0.2 % for total employment.

Once again, two-thirds of the reduction in the number of direct jobs - down by 434 FTEs - is due to the fact that Spie Belgium is no longer included in the construction sector (see 7.2), but there was also a downward trend to some degree in almost all other sectors. Road transport felt the impact of the bankruptcy of ATU Transport (which still employed 58 staff in 2012). Total employment in Solvay group companies (see 7.2) was more or less steady in 2013. As in 2012, Solvay remains by far the largest employer in the Brussels port area.

7.4 Investment

In contrast to value added and employment, investment picked up in 2013: it totalled € 67.6 million (+34.5 %), thus regaining the level of 2009-2010. In the case of shipping agents and forwarders, most of the increase was attributable to Reibel, which specialises in logistic services for humanitarian organisations. At the end of 2013 and again in 2014, a contract was concluded with the United Nations for the renewal of part of the stock of vehicles. In addition, in the maritime cluster the port authority invested twice as much as in the previous year.

In the non-maritime cluster, growth was a more modest 14.4 %. In the trade sector, a number of large firms upped their investment compared to 2012, while in other industries the opposite occurred. The increase in other logistic services was due to Solvay, the biggest investor in the port of Brussels, as it was in 2012. There was also no change in the other members of the top three: Reibel and Brussels Port Authority.

CHART 15 **CHANGE IN DIRECT VALUE ADDED**
(in € million, current prices)

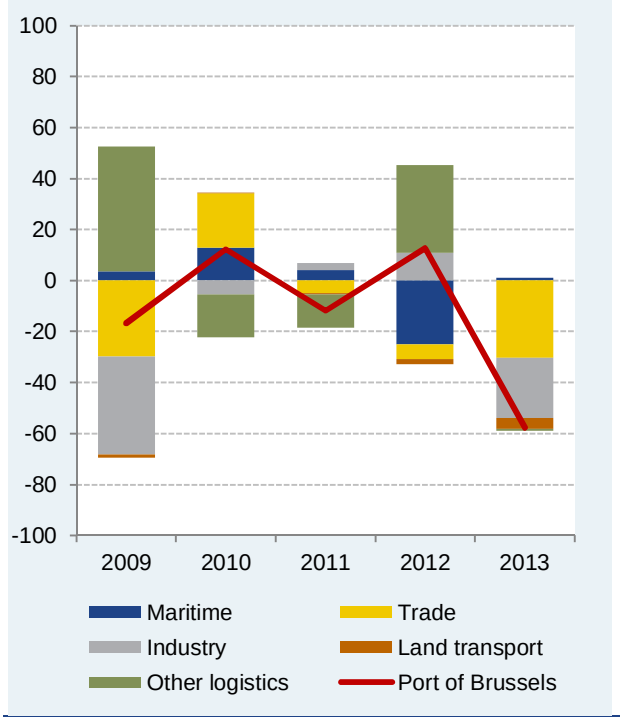
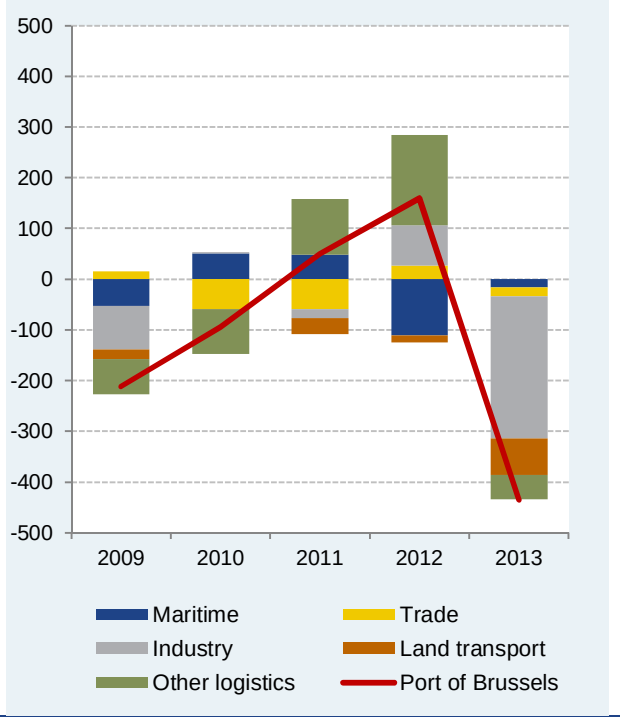


CHART 16 **CHANGE IN DIRECT EMPLOYMENT**
(FTE)



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 2008 TO 2013**
(in € million - current prices)

Sectors	2008	2009	2010	2011	2012	2013	Share in 2013 (in p.c.)	Change from 2012 to 2013 (in p.c.)	Annual average change from 2008 to 2013 (in p.c.)
DIRECT EFFECTS	**543.2**	**526.4**	**538.8**	**527.0**	**539.6**	**481.9**	**100.0**	**- 10.7**	**- 2.4**
MARITIME CLUSTER	**31.0**	**34.6**	**47.5**	**51.5**	**26.4**	**27.5**	**5.7**	**+ 4.4**	**- 2.3**
Shipping agents and forwarders	16.5	20.7	31.6	34.2	15.5	12.8	2.7	- 17.5	- 4.9
Cargo handling	10.6	6.6	8.4	9.1	6.5	6.2	1.3	- 4.1	- 10.2
Shipping companies	1.1	0.4	1.0	1.3	0.6	0.6	0.1	+ 8.6	- 10.9
Shipbuilding and repair	0.1	0.0	0.0	0.0	0.1	0.1	0.0	+ 4.4	- 8.7
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	0.7	0.7	0.5	0.0	0.1	0.0	+ 122.9	- 29.6
Port authority	-2.3	1.8	1.4	1.9	-0.9	3.1	0.7	n.	n.
Public sector	4.4	4.5	4.5	4.5	4.6	4.6	1.0	+ 0.3	+ 0.9
Allocation (p.m.)									
NON-MARITIME CLUSTER	**512.2**	**491.8**	**491.2**	**475.4**	**513.3**	**454.4**	**94.3**	**- 11.5**	**- 2.4**
TRADE	186.9	157.0	178.4	173.6	168.0	137.7	28.6	- 18.1	- 5.9
INDUSTRY	155.4	117.0	111.5	114.4	125.4	101.7	21.1	- 18.9	- 8.1
Energy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Fuel production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Chemicals	11.6	10.2	7.0	5.6	5.8	4.7	1.0	- 18.6	- 16.5
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	1.1	1.5	1.6	1.9	0.4	+ 18.1	+ 14.2
Construction	36.7	34.9	33.4	35.7	41.0	22.4	4.6	- 45.5	- 9.4
Food industry	15.3	21.5	15.2	16.9	14.8	13.8	2.9	- 6.6	- 2.0
Other industries	90.8	49.2	54.8	54.7	62.1	58.8	12.2	- 5.2	- 8.3
LAND TRANSPORT	21.7	20.6	20.9	20.4	18.4	14.1	2.9	- 23.1	- 8.2
Road transport	21.7	20.5	20.8	20.2	18.2	14.0	2.9	- 23.1	- 8.4
Other land transport	0.0	0.1	0.1	0.2	0.2	0.1	0.0	- 28.7	n.
OTHER LOGISTIC SERVICES	148.1	197.2	180.4	167.1	201.5	200.9	41.7	- 0.3	+ 6.3
INDIRECT EFFECTS	**517.3**	**455.6**	**446.6**	**473.4**	**468.2**	**412.0**	**-**	**- 12.0**	**- 4.4**
MARITIME CLUSTER	**36.2**	**33.1**	**45.7**	**50.0**	**27.7**	**30.6**	**-**	**+ 10.3**	**- 3.3**
NON-MARITIME CLUSTER	**481.1**	**422.5**	**400.8**	**423.4**	**440.5**	**381.4**	**-**	**- 13.4**	**- 4.5**
TOTAL VALUE ADDED	**1,060.4**	**982.0**	**985.3**	**1,000.3**	**1,007.8**	**894.0**	**-**	**- 11.3**	**- 3.4**

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 year 2008 are based on IOT 2005 and SUT 2007. The indirect effects for the period 2009-2013 are based on IOT 2010 and SUT 2010. The use of different sources causes a break in the time series. The calculated indirect effects are approximations and should be interpreted with caution.

TABLE 48 **VALUE ADDED TOP 10 AT THE PORT OF BRUSSELS IN 2013**

Ranking	Company name	Sector
1	SOLVAY	Other logistic services
2	AQUIRIS	Other industries
3	INEOS SERVICES BELGIUM	Other logistic services
4	INERGY AUTOMOTIVE SYSTEMS RESEARCH	Other logistic services
5	SOLVIN	Trade
6	SOLVAY CHEMICALS INTERNATIONAL	Other logistic services
7	BRUXELLES ENERGIE - BRUSSEL ENERGIE	Other industries
8	CERES	Food industry
9	INEOS SALES BELGIUM	Trade
10	SCANIA BELGIUM	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

TABLE 49 **EMPLOYMENT AT THE PORT OF BRUSSELS FROM 2008 TO 2013**
(FTE)

Sectors	2008	2009	2010	2011	2012	2013	Share in 2013 (in p.c.)	Change from 2012 to 2013 (in p.c.)	Annual average change from 2008 to 2013 (in p.c.)
DIRECT EFFECTS	**4,609**	**4,398**	**4,303**	**4,353**	**4,513**	**4,079**	**100.0**	**- 9.6**	**- 2.4**
MARITIME CLUSTER	**555**	**503**	**553**	**601**	**491**	**475**	**11.6**	**- 3.3**	**- 3.1**
Shipping agents and forwarders	172	168	192	243	172	164	4.0	- 4.6	- 1.0
Cargo handling	171	117	140	133	111	105	2.6	- 5.1	- 9.3
Shipping companies	0	1	4	5	0	1	0.0	n.	n.
Shipbuilding and repair	2	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	5	6	6	0	0	0.0	n.	n.
Port authority	122	130	130	132	127	123	3.0	- 3.0	+ 0.1
Public sector	82	82	82	82	82	82	2.0	+ 0.0	+ 0.0
Allocation (p.m.)									
NON-MARITIME CLUSTER	**4,054**	**3,895**	**3,750**	**3,752**	**4,022**	**3,604**	**88.4**	**- 10.4**	**- 2.3**
TRADE	1,352	1,367	1,309	1,251	1,278	1,260	30.9	- 1.4	- 1.4
INDUSTRY	1,210	1,124	1,127	1,108	1,187	907	22.2	- 23.6	- 5.6
Energy	0	0	0	0	0	0	0.0	n.	n.
Fuel production	0	0	0	0	0	0	0.0	n.	n.
Chemicals	96	73	41	40	45	49	1.2	+ 8.8	- 12.4
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	18	19	13	19	27	26	0.6	- 5.4	+ 7.8
Construction	573	563	553	562	614	331	8.1	- 46.1	- 10.4
Food industry	150	151	153	148	148	150	3.7	+ 1.4	+ 0.0
Other industries	374	318	368	339	353	351	8.6	- 0.6	- 1.2
LAND TRANSPORT	364	345	344	313	299	228	5.6	- 23.9	- 9.0
Road transport	364	343	343	310	296	226	5.5	- 23.8	- 9.1
Other land transport	0	2	1	3	3	2	0.0	- 31.8	n.
OTHER LOGISTIC SERVICES	1,128	1,059	970	1,080	1,258	1,209	29.6	- 3.9	+ 1.4
INDIRECT EFFECTS	**5,586**	**4,856**	**4,710**	**4,867**	**4,922**	**4,238**	**-**	**- 13.9**	**- 5.4**
MARITIME CLUSTER	**550**	**474**	**544**	**605**	**481**	**486**	**-**	**+ 1.1**	**- 2.4**
NON-MARITIME CLUSTER	**5,036**	**4,382**	**4,166**	**4,262**	**4,440**	**3,752**	**-**	**- 15.5**	**- 5.7**
TOTAL EMPLOYMENT	**10,195**	**9,254**	**9,014**	**9,221**	**9,435**	**8,317**	**-**	**- 11.8**	**- 4.0**

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 year 2008 are based on IOT 2005 and SUT 2007. The indirect effects for the period 2009-2013 are based on IOT 2010 and SUT 2010. The use of different sources causes a break in the time series. The calculated indirect effects are approximations and should be interpreted with caution.

TABLE 50 **EMPLOYMENT TOP 10 AT THE PORT OF BRUSSELS IN 2013**

Ranking	Company name	Sector
1	SOLVAY	Other logistic services
2	CERES	Food industry
3	SCANIA BELGIUM	Trade
4	BRUSSELS PORT AUTHORITY	Port authority
5	SITA WASTE SERVICES	Other industries
6	SOLVIN	Trade
7	INEOS SERVICES BELGIUM	Other logistic services
8	INERGY AUTOMOTIVE SYSTEMS RESEARCH	Other logistic services
9	PUBLIC SECTOR	Public sector
10	BINJE ACKERMANS	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.

TABLE 51 **INVESTMENT AT THE PORT OF BRUSSELS FROM 2008 TO 2013**
(in € million - current prices)

Sectors	2008	2009	2010	2011	2012	2013	Share in 2013 (in p.c.)	Change from 2012 to 2013 (in p.c.)	Annual average change from 2008 to 2013 (in p.c.)
MARITIME CLUSTER	**21.1**	**17.8**	**19.3**	**14.2**	**12.4**	**24.2**	**35.9**	**+ 96.0**	**+ 2.8**
Shipping agents and forwarders	4.3	4.5	9.7	7.4	7.0	13.0	19.3	+ 86.7	+ 25.0
Cargo handling	1.0	0.1	0.6	1.5	0.7	0.5	0.7	- 37.3	- 14.7
Shipping companies	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
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	15.8	13.2	8.9	5.3	4.6	10.7	15.9	+ 130.8	- 7.5
Public sector	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Allocation (p.m.)									
NON-MARITIME CLUSTER	**54.8**	**48.2**	**47.5**	**39.1**	**37.9**	**43.4**	**64.1**	**+ 14.4**	**- 4.6**
TRADE	17.9	23.3	16.3	10.9	10.3	13.5	20.0	+ 30.6	- 5.5
INDUSTRY	18.6	14.7	20.0	9.7	9.7	7.4	10.9	- 24.2	- 16.8
Energy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Fuel production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Chemicals	2.0	0.8	0.4	0.6	0.2	0.0	0.0	- 89.1	- 58.4
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	0.2	0.1	0.4	0.1	0.3	0.1	0.2	- 59.7	- 9.7
Construction	3.7	7.1	5.2	4.5	4.1	4.0	5.9	- 3.1	+ 1.8
Food industry	0.8	4.2	10.8	2.4	1.2	1.8	2.7	+ 50.6	+ 18.3
Other industries	11.9	2.5	3.2	2.1	3.9	1.4	2.1	- 63.2	- 34.5
LAND TRANSPORT	3.8	2.4	1.6	3.9	1.9	2.1	3.1	+ 9.5	- 11.2
Road transport	3.8	2.3	1.6	3.8	1.9	2.0	3.0	+ 7.5	- 12.2
Other land transport	0.0	0.1	0.0	0.1	0.1	0.1	0.2	+ 56.2	n.
OTHER LOGISTIC SERVICES	14.6	7.8	9.7	14.6	15.9	20.4	30.1	+ 28.3	+ 6.9
DIRECT INVESTMENT	**76.0**	**66.0**	**66.8**	**53.3**	**50.3**	**67.6**	**100.0**	**+ 34.5**	**- 2.3**

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 2013**

Ranking	Company name	Sector
1	SOLVAY	Other logistic services
2	REIBEL	Shipping agents and forwarders
3	BRUSSELS PORT AUTHORITY	Port authority
4	HAVELANGE	Trade
5	LOXAM	Other logistic services
6	SCANIA BELGIUM	Trade
7	RUSSEL	Other logistic services
8	TADAL	Trade
9	SEBAHAT	Food industry
10	RINGOOT FRUIT	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 SUMMARY

After a general decline in 2012, the total **maritime traffic** handled by the Flemish maritime ports increased again by 1.7 % in 2013, but this growth was entirely attributable to the port of Antwerp (+3.7 %). Traffic at the other sea ports declined in varying degrees: Ghent -1.3 %, Zeebrugge -1.6 % and Ostend as much as -43.1 %. This last figure was due to the termination of the roll-on/roll-of service to and from Britain in 2013. The other ports in the Hamburg – Le Havre range also recorded a mediocre performance in 2013, their combined growth amounting to only 0.2 %, whereas world maritime traffic increased by 3.8 %. The ports of Brussels and Liège were no exception to the general Belgian picture, and also recorded a decline in traffic of 6.1 and 9.3 % respectively, the latter figure being due mainly to the termination of the warm-phase activities of the ArcelorMittal steel group.

Transhipment in the principal segment – containers - was down in 2013, and only the port of Zeebrugge recorded a small rise, but this positive trend is now at risk because some major container shipping companies have recently decided to drop Zeebrugge from their schedules in whole or in part. The other cargo categories displayed a variable picture: non-containerised general cargo only expanded in Zeebrugge, ro-ro only in Ghent, liquid bulk only in Antwerp and dry bulk in none of the four ports.

Once again, the only Flemish sea port to record growth in 2014 was the port of Antwerp, while all the foreign ports in the range, except Bremen, enjoyed expansion. On the other hand, both Liège and Brussels managed to achieve traffic growth again in 2014.

CHART 17 **CHANGE IN DIRECT VALUE ADDED**
(in € million, by volume)

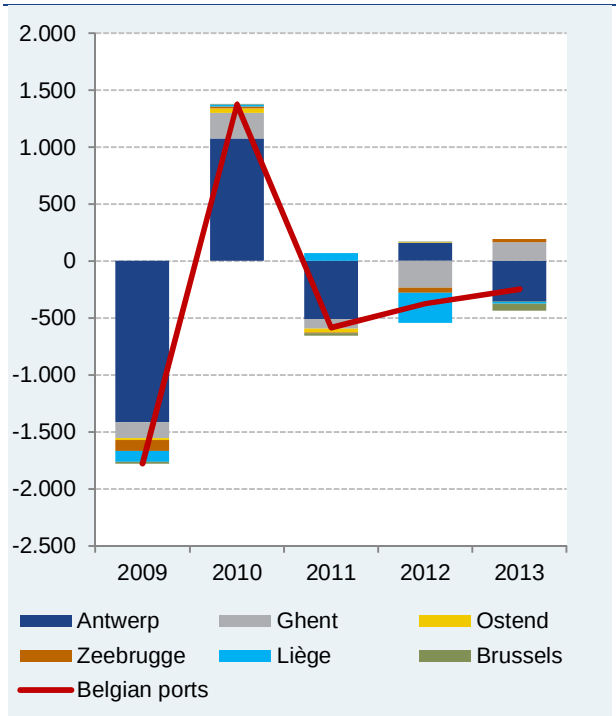
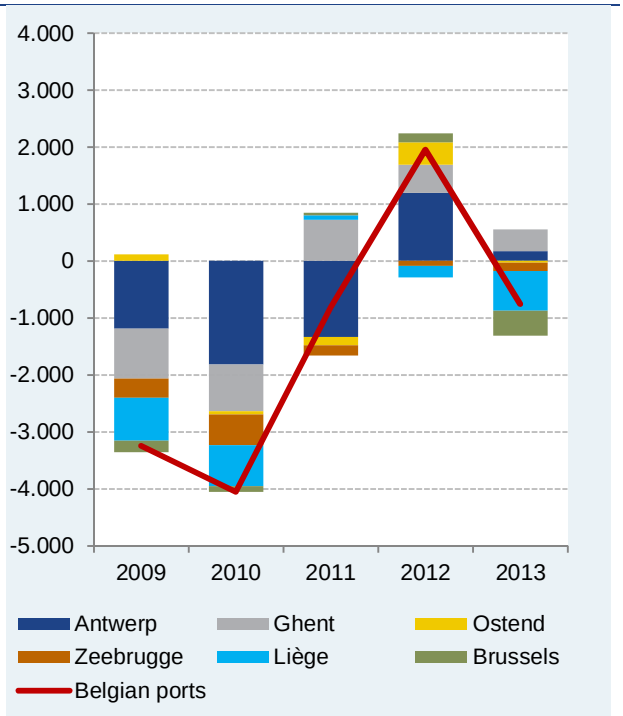


CHART 18 **CHANGE IN DIRECT EMPLOYMENT**
(FTE)



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

The declining trend in direct **value added** which had begun in 2011 persisted in 2013, although the fall was only very slight (-0.1 % against the previous year). However, if we consider total value added, i.e. including the indirect effects, then we find an upward trend since 2010 which was again apparent in 2013 (+0.7 %). The total direct value added created by all the Belgian ports in that year came to € 16.4 billion or 4.2 % of Belgium's GDP. Including the indirect value added, that total comes to € 30.4 billion, or 7.7 % of GDP.

However, except for Antwerp (-2.1 %) and Brussels (-10.7 %), direct value added increased in all the ports in 2013. The decline in the case of Antwerp, following a record year in 2012, was largely due to the shipping companies, and more particularly their operating results. In Brussels the reason was the

specific situation in a few individual firms. The strongest growth was achieved by the port of Ghent (+6.7 %), thanks to steady progress in car manufacturing and the metalworking industry. Zeebrugge and Ostend came next with growth of 3.8 and 1.0 % respectively. Finally, following the 2012 decline, the port of Liège saw its value added increase slightly by 0.4 %.

The picture in regard to value added varies greatly between the two clusters: in the maritime cluster, value added declined by 3.8 % per annum, on average, between 2008 and 2013, whereas the non-maritime cluster produced growth averaging 0.8 % per annum over the same period. 2013 was no exception to this trend, with year-on-year growth of 0.7 % for the non-maritime cluster and a decline of 2.2 % for the maritime segment. In relative terms, the strongest growth both in 2013 and over the period as a whole was recorded by the sectors port construction and dredging, port trade, chemicals, food industry and other logistic services.

The expansion of direct **employment** in 2012, following a contraction in 2010-2011, was partly negated again partly in 2013: in that year direct employment was down by 0.7 % or -838 FTEs. However, as in the case of value added, this trend was offset by a steady rise in indirect employment, so that the total in 2013 was still up very slightly, by 0.1 %. In 2013 the six ports directly employed 116,724 FTEs; taking direct and indirect employment together, the total came to 259,168 FTEs (2.9 and 6.5 % respectively of domestic employment).

Ghent (+1.3 %) and Antwerp (+0.3 %) were the only ports to see the workforce expand in 2013; in the port of Ghent this was due mainly to car manufacturing, but in Antwerp the growth was almost entirely due to the establishment of a major company in the port area. In the ports of Ostend and Zeebrugge, the number of jobs declined by 0.7 and 1.9 % respectively, but Liège (-7.3 %) and Brussels (-9.6 %) experienced the biggest reductions in their workforce. In Liège, the job losses were due mainly to the metalworking industry, while Brussels not only had to contend with the relocation of a large company away from the defined port area, but also suffered staff cuts and bankruptcies in several sectors.

In contrast to value added, direct employment recorded a downward trend in both clusters, with the non-maritime cluster seeing the sharpest fall (averaging -1.3 % per annum, compared to -0.8 % per annum for the maritime cluster). Both clusters again recorded a small decrease in 2013. On average, the best-performing sectors in terms of staff expansion are port construction and dredging and other logistic services (as in the case of value added), plus fuel production. The biggest job losses are in shipping companies, ship building and repair, metalworking industry and road transport.

Since 2008 there has been a systematic decline in **investment** in tangible fixed assets in the Belgian ports: the amount invested has fallen year by year, dropping to € 3.3 billion in 2013, 38 % lower than in the first year in the series. This downward trend is evident in all the ports, although the trend is broken in some years by individual ports. In Antwerp, the decline is continuous, while both Ghent and Ostend saw a modest revival in 2012. Zeebrugge was unable to maintain the surge in investment seen in 2010, while in Liège the 2011-2012 upturn came to an end in the following year. Only the port of Brussels recorded increased investment in 2013 compared to the previous year (+34.5 %), but as in the case of Ostend the amounts involved are relatively small. The port of Antwerp, which in 2008 accounted for 68.7 % of the total investment in all Belgian ports, represented a similar share again in 2013 (70.0 %).

Up to 2010, investments in the maritime cluster exceeded those in the non-maritime cluster, but the situation has since been reversed. In the maritime cluster, investment has fallen continuously since 2008 (-14.0 % in 2013), while in the non-maritime segment it increased again from 2012 (+6.0 % in 2013). In the maritime cluster the biggest investors are the cargo handlers (though the amounts are declining), shipping companies (ditto, but stable in the past two years) and the port authorities (strong growth in 2012, which was confirmed in 2013). In the non-maritime cluster, the sectors investing the most are chemicals (continuous rise since the decline in 2009), fuel production (fluctuating but stable in the longer term) and energy (declining up to 2010 but likewise stable since then).

The figures concerning the **demography** of the Belgian ports show positive net migration; in other words, over the period 2008-2013 the number of new firms coming into the ports exceeded the number leaving for one reason or another. In the non-maritime cluster, the turnover of firms exceeds that in the maritime cluster. Almost three in ten firms in the 2008 population no longer existed five years later; failing firms make up almost 35 % of that total. A comparison according to **company size** reveals that the weight of large firms (the ones filing full format annual accounts) increased slightly in 2013: they

represent 39.5 % of the number of firms, but 92 to 95 % of the total for the parameters examined (value added, employment and investment).

The **social balance sheets** of a constant sample of firms from the ports show that in 2013 the average number of hours worked per FTE declined (to 1,506 hours per annum), but that the average staff cost per FTE and per hour worked increased, a trend in line with the results at national level. Of the employees in the sample, 52 % are blue-collar workers and only 16 % are women; that is more than 2.5 times below the national average. On the other hand, workers in the ports are fairly highly trained (almost 3 in 10 hold a post-secondary diploma), and for female workers that applies to almost twice as many as their male colleagues. In 2013, 14 % of the workforce consisted of external staff, and recruitment slightly exceeded departures. Finally, firms in the ports make well above-average efforts to train their staff, in terms of both participation rates and the number of hours' training per worker, and in percentage of the total number of hours worked.

Another constant sample of port firms concerning **financial ratios** shows that the return on equity of these firms is declining and was below the national average in 2013. Conversely, liquidity has improved over the years, and solvency is generally very good too, with an average slightly higher than that for Belgian firms as a whole. The **financial health** of firms active in the ports or in the maritime sphere has improved since the economic crisis at the end of the last decade; 80 % of these firms (weighted according to the size of the workforce) are in risk classes with a below-average failure risk.

LIST OF ABBREVIATIONS

BNRC	Belgian National Railway Company
EU	European Union
FTE	Full-time equivalent
GDP	Gross domestic product
IOT	Input-Output Table
NAI	National Accounts Institute
NBB	National Bank of Belgium
NSI	National Statistical Institute, now FPS Economy, SMEs, independent Professions and Energy - Directorate General of Statistics and Economic Information
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: DETAILED SOCIAL BALANCE SHEET IN 2013

TABLE 53

DETAILED SOCIAL BALANCE SHEET OF THE BELGIAN PORTS - 2013
(reduced population: constant population)

Sectors	AVERAGE NUMBER OF EMPLOYEES														
	Number			Hours actually worked (1)			Personnel costs (2)			Hired temporary staff			At the enterprise's disposal		
	full-time	part-time	total	full-time	part-time	total	full-time	part-time	total	number	hours	costs	number	hours	costs
	1001	1002	1003	1011	1012	1013	1021	1022	1023	1501	1511	1521	1502	1512	1522
MARITIME CLUSTER	***28,327***	***2,665***	***30,295***	***41.9***	***2.8***	***44.7***	***1,895.6***	***128.8***	***2,024.4***	***2,698***	***5.05***	***159.5***	***6,345***	***10.85***	***493.1***
Shipping agents and forwarders	5,742	1,066	6,527	9.1	1.2	10.3	378.0	52.5	430.6	823	1.59	39.7	393	0.66	23.7
Cargo handling	16,920	1,170	17,786	23.7	1.1	24.8	1,083.6	51.7	1,135.3	1,752	3.22	113.1	5,942	10.18	468.7
Shipping companies	813	64	859	1.4	0.1	1.4	66.3	3.7	69.9	18	0.04	1.2	1	0.00	0.0
Shipbuilding and repair	387	37	414	0.6	0.0	0.7	24.1	1.4	25.6	35	0.07	1.9	2	0.00	0.1
Port construction and dredging	1,911	83	1,974	3.4	0.1	3.5	157.9	7.1	165.1	22	0.04	1.3	0	0.00	0.0
Fishing and fish industry	409	111	495	0.6	0.1	0.7	22.8	4.6	27.4	42	0.08	2.0	0	0.00	0.0
Port trade	103	23	121	0.2	0.0	0.2	9.2	1.2	10.3	2	0.00	0.1	0	0.00	0.0
Port authority	2,042	111	2,118	2.9	0.1	3.0	153.6	6.5	160.1	5	0.01	0.3	7	0.01	0.4
Public sector	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.
NON-MARITIME CLUSTER	***61,275***	***7,315***	***66,706***	***93.2***	***8.2***	***101.4***	***5,107.9***	***461.2***	***5,569.1***	***3,049***	***5.63***	***177.5***	***503***	***0.85***	***38.8***
TRADE	4,279	714	4,793	6.9	0.8	7.7	347.3	38.7	386.0	177	0.34	10.3	58	0.10	6.2
INDUSTRY	48,126	5,024	51,836	71.7	5.5	77.2	4,064.4	330.0	4,394.3	2,600	4.78	152.6	146	0.25	10.8
Energy	2,460	261	2,662	3.5	0.3	3.8	272.0	20.6	292.6	13	0.03	0.8	0	0.00	0.0
Fuel production	2,625	308	2,858	4.3	0.4	4.7	376.2	36.2	412.4	44	0.07	2.4	0	0.00	0.0
Chemicals	12,804	1,631	13,962	19.0	1.8	20.8	1,309.9	124.0	1,434.0	339	0.61	24.0	10	0.02	0.8
Car manufacturing	9,248	1,013	10,011	13.6	1.1	14.7	592.3	47.0	639.3	1,406	2.55	79.1	0	0.00	0.0
Electronics	601	75	656	1.0	0.1	1.0	40.5	3.8	44.3	39	0.07	2.4	2	0.00	0.2
Metalworking industry	12,825	1,007	13,587	18.7	1.1	19.8	964.8	62.8	1,027.6	281	0.54	16.9	10	0.02	1.3
Construction	3,413	280	3,618	5.1	0.3	5.4	225.5	14.4	239.8	128	0.24	8.6	4	0.01	0.2
Food industry	1,352	172	1,477	2.1	0.2	2.3	96.2	8.5	104.7	140	0.27	7.6	102	0.17	7.2
Other industries	2,798	278	3,005	4.4	0.3	4.7	186.9	12.7	199.7	210	0.40	10.9	17	0.03	1.2
LAND TRANSPORT	4,580	839	5,232	7.6	1.0	8.6	262.5	39.9	302.4	113	0.22	5.5	99	0.17	6.3
Road transport	2,239	211	2,387	4.2	0.2	4.4	118.9	8.2	127.1	108	0.21	5.2	90	0.15	5.3
Other land transport	2,341	628	2,845	3.4	0.7	4.1	143.6	31.7	175.3	5	0.01	0.3	9	0.02	1.0
OTHER LOGISTIC SERVICES	4,290	738	4,846	7.0	0.9	7.9	433.8	52.6	486.4	159	0.30	9.1	200	0.33	15.4
TOTAL	**89,602**	**9,980**	**97,002**	**135.1**	**11.0**	**146.1**	**7,003.5**	**590.0**	**7,593.5**	**5,747**	**10.69**	**337.1**	**6,848**	**11.70**	**531.8**

Source: NBB. The figures are based on a constant sample of firms which filed full-format accounts throughout the period 2011 - 2013.

TABLE 53 *(continued)* **DETAILED SOCIAL BALANCE SHEET OF THE BELGIAN PORTS - 2013**
(reduced population: constant population)

Sectors	NUMBER OF PERSONS EMPLOYED AT THE END OF THE YEAR														
	Number			Men			Women			Number		Men			
	full-time	part-time	total (in FTE)	full-time	part-time	total (in FTE)	full-time	part-time	total (in FTE)	White-collar	Blue-collar	primary	secon-dary	higher	university
	1051	1052	1053	1201	1202	1203	1211	1212	1213	1343	1323	12003	12013	12023	12033
MARITIME CLUSTER	***28,288***	***2,586***	***30,196***	***23,589***	***986***	***24,309***	***4,688***	***1,599***	***5,887***	***12,928***	***16,761***	***7,496***	***12,500***	***2,960***	***1,340***
Shipping agents and forwarders	5,736	1,048	6,512	3,654	206	3,799	2,082	842	2,712	5,568	840	317	2,117	1,088	272
Cargo handling	16,929	1,130	17,761	15,194	634	15,666	1,723	496	2,095	3,716	13,803	6,268	7,959	989	443
Shipping companies	767	66	814	660	15	669	107	51	145	372	386	81	303	190	95
Shipbuilding and repair	414	35	438	395	28	415	19	7	24	74	365	72	318	16	9
Port construction and dredging	1,917	80	1,978	1,737	24	1,754	180	56	224	1,062	913	172	831	448	304
Fishing and fish industry	390	107	473	266	41	299	124	66	175	151	314	75	165	46	13
Port trade	103	20	119	75	4	78	28	16	41	106	11	7	52	15	5
Port authority	2,033	100	2,101	1,608	34	1,629	425	66	473	1,878	129	504	755	170	200
Public sector	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.
NON-MARITIME CLUSTER	***61,020***	***7,256***	***66,418***	***53,433***	***4,098***	***56,490***	***7,586***	***3,157***	***9,927***	***29,541***	***33,825***	***8,057***	***32,071***	***10,473***	***5,834***
TRADE	4,236	698	4,736	3,278	239	3,449	958	459	1,288	3,033	1,582	348	1,932	727	388
INDUSTRY	47,957	4,996	51,658	42,798	3,039	45,041	5,160	1,956	6,617	20,576	28,414	5,686	26,929	8,175	4,251
Energy	2,418	262	2,621	1,937	68	1,989	481	194	632	1,707	14	23	781	818	367
Fuel production	2,694	309	2,931	2,303	194	2,450	391	116	481	2,297	526	114	707	893	737
Chemicals	12,810	1,602	13,950	11,564	1,024	12,285	1,246	578	1,664	7,247	5,630	496	7,621	3,042	1,127
Car manufacturing	9,266	1,032	10,052	8,155	738	8,721	1,111	294	1,331	1,606	8,140	1,694	5,774	887	365
Electronics	613	73	667	511	36	537	102	36	130	256	410	70	338	99	30
Metalworking industry	12,661	1,004	13,418	11,681	638	12,163	980	365	1,255	4,424	8,847	1,917	7,700	1,519	1,027
Construction	3,346	271	3,544	3,083	147	3,191	262	124	353	1,241	2,277	570	1,892	444	286
Food industry	1,374	168	1,497	1,122	66	1,169	252	102	327	569	875	201	691	169	109
Other industries	2,775	276	2,979	2,441	128	2,535	334	148	444	1,230	1,694	603	1,425	304	203
LAND TRANSPORT	4,503	822	5,139	4,072	582	4,533	430	240	605	1,720	3,282	1,870	2,119	286	258
Road transport	2,164	205	2,308	1,973	87	2,034	191	118	274	524	1,713	1,011	915	86	22
Other land transport	2,338	617	2,831	2,099	495	2,499	239	121	332	1,196	1,568	859	1,204	200	236
OTHER LOGISTIC SERVICES	4,324	740	4,885	3,285	237	3,467	1,038	502	1,417	4,212	547	153	1,091	1,285	937
TOTAL	**89,308**	**9,842**	**96,614**	**77,023**	**5,084**	**80,799**	**12,273**	**4,757**	**15,814**	**42,469**	**50,586**	**15,553**	**44,571**	**13,433**	**7,175**

Source: NBB. The figures are based on a constant sample of firms which filed full-format accounts throughout the period 2011 - 2013.

TABLE 53 *(continued)* **DETAILED SOCIAL BALANCE SHEET OF THE BELGIAN PORTS - 2013**
(reduced population: constant population)

Sectors	NUMBER OF PERSONS EMPLOYED				TRAINING					ENTERED		RESIGNED	
		Women				Men		Women					
	primairy	secon-dary	higher	university	number	hours (1)	costs (2)	number	hours (1)	costs (2)	Number (in FTE)	Indefinite period	Number (in FTE)	Indefinite period
	12103	12113	12123	12133	5801	5802	5803	5811	5812	5813	2053	2103	3053	3103
MARITIME CLUSTER	***549***	***3,395***	***1,367***	***568***	***11,150***	***0.36***	***16.7***	***2,985***	***0.08***	***3.6***	***5,797***	***4,635***	***5,074***	***4,000***
Shipping agents and forwarders	94	1,668	752	194	1,529	0.03	1.6	1,164	0.02	1.0	1,451	1,128	1,199	921
Cargo handling	346	1,205	359	180	6,822	0.23	11.2	1,129	0.05	1.7	3,243	2,934	2,748	2,491
Shipping companies	2	67	49	27	266	0.01	0.7	55	0.00	0.1	560	136	590	159
Shipbuilding and repair	5	16	3	0	118	0.00	0.1	0	0.00	0.0	87	66	57	42
Port construction and dredging	3	78	81	61	1,212	0.08	2.5	162	0.00	0.4	260	229	198	167
Fishing and fish industry	30	112	26	7	299	0.00	0.1	152	0.00	0.1	32	25	93	74
Port trade	21	11	5	4	7	0.00	0.0	5	0.00	0.0	17	15	19	19
Port authority	48	239	91	94	897	0.01	0.5	317	0.01	0.3	148	103	171	128
Public sector	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.
NON-MARITIME CLUSTER	***545***	***3,620***	***3,789***	***1,962***	***36,803***	***1.28***	***96.9***	***5,956***	***0.18***	***16.5***	***7,162***	***4,293***	***7,843***	***5,401***
TRADE	98	518	450	210	1,427	0.03	2.2	554	0.01	1.0	771	518	892	615
INDUSTRY	337	2,410	2,636	1,234	30,846	1.01	80.3	4,191	0.12	11.5	4,467	2,467	4,959	3,444
Energy	1	132	370	129	1,686	0.10	11.1	608	0.03	2.8	101	54	206	162
Fuel production	1	37	238	205	2,004	0.11	7.9	324	0.01	0.8	311	242	218	178
Chemicals	19	429	861	355	9,922	0.26	21.3	1,279	0.03	3.0	998	565	1,025	667
Car manufacturing	184	715	311	120	4,328	0.14	12.0	571	0.02	2.3	630	217	631	482
Electronics	12	54	49	16	458	0.02	0.6	94	0.00	0.1	66	56	66	58
Metalworking industry	47	597	371	240	8,001	0.29	20.9	626	0.02	1.2	1,166	541	1,548	1,018
Construction	16	114	153	70	1,889	0.04	2.5	176	0.00	0.4	451	352	579	477
Food industry	28	169	101	30	786	0.01	1.0	192	0.00	0.2	257	189	190	126
Other industries	29	163	183	69	1,773	0.04	3.0	322	0.01	0.7	487	252	496	276
LAND TRANSPORT	95	305	122	83	2,725	0.17	8.6	308	0.02	1.0	996	623	1,159	794
Road transport	68	153	40	12	755	0.02	0.3	66	0.00	0.0	732	443	869	586
Other land transport	27	151	82	71	1,971	0.16	8.3	242	0.02	1.0	264	180	289	208
OTHER LOGISTIC SERVICES	15	387	581	434	1,805	0.06	5.8	904	0.03	3.1	928	684	833	548
TOTAL	**1,093**	**7,015**	**5,156**	**2,530**	**47,954**	**1.65**	**113.6**	**8,941**	**0.26**	**20.1**	**12,959**	**8,927**	**12,917**	**9,401**

Source: NBB. The figures are based on a constant sample of firms which filed full-format accounts throughout the period 2011 - 2013.

(1) The time actually worked in terms of millions of hours.

(2) The personnel costs and training costs in terms of € million.

ANNEX 2: LIST OF NACE-BEL BRANCHES [67]

TABLE 54 **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
10E	10520	IN	VO						*	Manufacture of ice cream
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.
20G	20600	IN	CH			*				Manufacture of man-made fibres
21A	21100	IN	CH	*						Manufacture of basic pharmaceutical products
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

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

TABLE 54 *(continued)* **LIST OF NACE-BEL BRANCHES (NACE-BEL 2008)**

SUT	NACE-BEL	Cluster	Sector	AN	GN	OO	ZB	LG	BR	Definition
23D	23620	IN	CS	*						Manufacture of plaster products for construction purposes
23D	23630	IN	CS	*	*	*	*	*	*	Manufacture of ready-mixed concrete
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	25210	IN	ME	*						Manufacture of central heating radiators and boilers
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	26300	IN	MP				*			Manufacture of communication equipment
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	27510	IN	MP					*		Manufacture of electric domestic appliances
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
28A	28299	IN	ME		*		*			Manufacture of other general-purpose machinery n.e.c.
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

TABLE 54 *(continued)* **LIST OF NACE-BEL BRANCHES (NACE-BEL 2008)**

SUT	NACE-BEL	Cluster	Sector	AN	GN	OO	ZB	LG	BR	Definition
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
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	46110	CO	CO	*						Agents involved in the sale of agricultural raw materials, live animals, textile raw materials and semi-finished goods
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 gaseaous 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

TABLE 54 *(continued)* **LIST OF NACE-BEL BRANCHES (NACE-BEL 2008)**

SUT	NACE-BEL	Cluster	Sector	AN	GN	OO	ZB	LG	BR	Definition
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
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 2008 - 2013. 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 2008 and 2013, while the branch 30110 (Building of ships and floating structures) was only present in Antwerp, Ghent and Ostend.

Legend:

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

Cluster code	Cluster definition	Sector code	Sector definition
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	Industry	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 3: 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	

BIBLIOGRAPHY

AG Haven Oostende (2014), *Jaarverslag 2013*, Ostend.

Bremerhaven, *Hafenspiegel Für Die Bremischen Häfen 2013*, Bremenports GmbH & Co. KG Bremen, June 2014.

Coppens F., Verduyn F. (2009), *Analysis of business demography using markov chains: an application to Belgian data,* NBB, Working Paper n°170 (Research series), Brussels.

De Tijd, newspaper articles between 2013 and 2015, Brussels.

Duisport, *Geschäftsbericht 2013 der duisport-Gruppe*, Duisburger Hafen AG, Duisburg, Germany.

Dunkerque Port*, Rapport d'activité 2013*, April 2014, Dunkerque, France.

Gemeentelijk Havenbedrijf Antwerpen (2014), *Annual report 2013*, Antwerp.

Gemeentelijk Havenbedrijf Antwerpen (2015), *Yearbook of Statistics 2014,* Antwerp.

Flows, articles between 2013 and 2015, Antwerp.

Haropa, communiqué de presse, 23 January 2014, Rouen, France.

Haropa (2014), *Rapport d'activité 2013*, Rouen, France.

Havenbedrijf Gent (2014), *Annual report 2013*, Ghent.

Heuse P., (2014), *2013 social balance sheet*, NBB, Economic Review, December 2014, Brussels.

International Monetary Fund (2014), *World Economic Outlook (October 2014)*, IMF, Washington DC (USA).

Lagneaux F. (2006), *Economic importance of the Belgian ports: Flemish maritime ports and Liège port complex - Report 2004*, NBB, Working Paper n°86 (Document series), Brussels.

L'Echo, newspaper articles between 2013 and 2015, Brussels.

Maatschappij Linkerscheldoever (2014), *Jaarverslag 2013,* Beveren.

Merckx J.-P., D. Neyts, Vlaamse Havencommissie (2014), *De Vlaamse havens - Feiten, statistieken en indicatoren voor 2013*, Brussels.

National Accounts Institute, *Input-Output Tables for Belgium. 2005,* Federal Planning Bureau*,* Brussels.

National Accounts Institute, *Input-Output Tables 2010,* Federal Planning Bureau*,* December 2013, Brussels.

National Accounts Institute, *National accounts. Supply and use tables 2007,* Brussels.

National Accounts Institute, *National accounts. Supply and use tables 2010,* Brussels.

National Accounts Institute (2015), *Regional accounts 2013*, Brussels.

National Accounts Institute (2014), *National accounts. Detailed accounts and tables 2013*, Brussels.

NBB (2015), *Annual Report 2014 - Economic and financial developments*, NBB, Brussels.

NBB, Central Balance Sheet Office, Annual accounts submitted to the Central Balance Sheet Office, from 2008 to 2014, Brussels.

NBB, Central Balance Sheet Office, Statistics, *Indicators relating to the continuing on-the-job training,* Brussels.

NBB, General Statistics Department, *M.Stat - Online Database*, Brussels.

Port of Amsterdam, *Annual report 2013*, Haven Amsterdam, Netherlands.

Port of Brussels (2014), Jaarverslag *2013*, Brussels.

Port of Brussels, persmededeling, 31 January 2014 and 30 January 2015, Brussels.

Port of Hamburg, www.hafen-hamburg.de, Statistics, Hamburg, Germany.

Port of Liège, communiqué de presse, 26 February 2014 and 4 March 2015, Liège.

Port of Rotterdam (2014), *Annual report 2013*, The Port of Rotterdam Authority, Netherlands.

Port of Zeebrugge (2014), *Annual report 2013*, Zeebrugge.

United Nations Conference on Trade and Development (2014), *Review of Maritime Transport 2014*, UNCTAD New York and Geneva.

Vivet D. (2011), *Development of a financial health indicator based on companies' annual accounts ,* NBB, Working Paper n°213 (Document series), Brussels.

Vivet D. (2014), *Results and financial situation of firms in 2013*, NBB, Economic Review, December 2014, Brussels.

Zeeland Seaports, *Jaarbericht 2013,* April 2014, Terneuzen, Netherlands.

NATIONAL BANK OF BELGIUM - WORKING PAPERS SERIES

The Working Papers are available on the website of the Bank: https://www.nbb.be.

217. "The evolution of Alexandre Lamfalussy's thought on the international and European monetary system (1961-1993)" by I. Maes, Research series, November 2011.
218. "Economic importance of air transport and airport activities in Belgium – Report 2009", by X. Deville and S. Vennix, Document series, December 2011.
219. "Comparative advantage, multi-product firms and trade liberalisation: An empirical test", by C. Fuss and L. Zhu, Research series, January 2012.
220. "Institutions and export dynamics", by L. Araujo, G. Mion and E. Ornelas, Research series, February 2012.
221. "Implementation of EU legislation on rail liberalisation in Belgium, France, Germany and the Netherlands", by X. Deville and F. Verduyn, Document series, March 2012.
222. "Tommaso Padoa-Schioppa and the origins of the euro", by I. Maes, Document series, March 2012.
223. "(Not so) easy come, (still) easy go? Footloose multinationals revisited", by P. Blanchard, E. Dhyne, C. Fuss and C. Mathieu, Research series, March 2012.
224. "Asymmetric information in credit markets, bank leverage cycles and macroeconomic dynamics", by A. Rannenberg, Research series, April 2012.
225. "Economic importance of the Belgian ports: Flemish maritime ports, Liège port complex and the port of Brussels - Report 2010", by C. Mathys, *Document series*, July 2012.
226. "Dissecting the dynamics of the US trade balance in an estimated equilibrium model", by P. Jacob and G. Peersman, *Research series*, August 2012.
227. "Regime switches in volatility and correlation of financial institutions", by K. Boudt, J. Daníelsson, S.J. Koopman and A. Lucas, *Research series*, October 2012.
228. "Measuring and testing for the systemically important financial institutions", by C. Castro and S. Ferrari, *Research series*, October 2012.
229. "Risk, uncertainty and monetary policy", by G. Bekaert, M. Hoerova and M. Lo Duca*, Research series*, October 2012.
230. "Flights to safety", by L. Baele, G. Bekaert, K. Inghelbrecht and M. Wei, *Research series*, October 2012.
231. "Macroprudential policy, countercyclical bank capital buffers and credit supply: Evidence from the Spanish dynamic provisioning experiments", by G. Jiménez, S. Ongena, J.-L. Peydró and J. Saurina, *Research series*, October 2012.
232. "Bank/sovereign risk spillovers in the European debt crisis", by V. De Bruyckere, M. Gerhardt, G. Schepens and R. Vander Vennet, *Research series*, October 2012.
233. "A macroeconomic framework for quantifying systemic risk", by Z. He and A. Krishnamurthy, *Research series*, October 2012.
234. "Fiscal policy, banks and the financial crisis", by R. Kollmann, M. Ratto, W. Roeger and J. in't Veld, *Research series*, October 2012.
235. "Endogenous risk in a DSGE model with capital-constrained financial intermediaries", by H. Dewachter and R. Wouters, *Research series*, October 2012.
236. "A macroeconomic model with a financial sector", by M.K. Brunnermeier and Y. Sannikov, *Research series*, October 2012.
237. "Services versus goods trade : Are they the same?", by A. Ariu, *Research series*, December 2012.
238. "Importers, exporters, and exchange rate disconnect", by M. Amiti, O. Itskhoki and J. Konings, *Research series*, December 2012.
239. "Concording EU trade and production data over time", by I. Van Beveren, A.B. Bernard and H. Vandenbussche, *Research series*, December 2012.
240. "On the origins of the Triffin dilemma: Empirical business cycle analysis and imperfect competition theory", by I. Maes, *Research series*, December 2012.
241. "The Influence of the Taylor rule on US monetary policy", by P. Ilbas, Ø. Røisland and T. Sveen, *Research series*, January 2013.
242. "Economic importance of the Belgian ports: Flemish maritime ports, Liège port complex and the port of Brussels - Report 2011", by C. Mathys, *Document series*, July 2013.
243. "The fragility of two monetary regimes: The European Monetary System and the Eurozone", by P. De Grauwe and Y. Ji, *Research series*, October 2013.
244. "Funding liquidity, market liquidity and TED spread: A two-regime model", by K. Boudt, E. C.S. Paulus and D. W.R. Rosenthal, *Research series*, November 2013.
245. "Robustifying optimal monetary policy using simple rules as cross-checks", by P. Ilbas, Ø. Røisland and T. Sveen, *Research series*, November 2013.
246. "Household and firm leverage, capital flows and monetary policy in a small open economy", by M. Pirovano, *Research series*, November 2013.
247. "The BIS and the Latin American debt crisis of the 1980s", by P. Clement and I. Maes, *Research series*, December 2013.
248. "The importance of the right amount of business resources for firms' exporting behavior", by I. Paeleman, C. Fuss and T. Vanacker, *Research series*, December 2013.
249. "The role of financial frictions during the crisis: An estimated DSGE model", by R. Merola, *Research series*, December 2013.
250. "Bank reactions after capital shortfalls", by C. Kok and G. Schepens, *Research series*, December 2013.

251. “Why firms avoid cutting wages: Survey evidence from European firms”, by P. Du Caju, T. Kosma, M. Lawless, J. Messina and T. Rõõm, *Research series*, December 2013.
252. “The distribution of debt across euro area countries: The role of individual characteristics, institutions and credit conditions”, by O. Bover, J. M. Casado, S. Costa, Ph. Du Caju, Y. McCarthy, E. Sierminska, P. Tzamourani, E. Villanueva and T. Zavadil, *Research series*, December 2013.
253. “Micro-based evidence of EU competitiveness: The CompNet database”, by CompNet Task Force, *Research series*, March 2013.
254. “Information in the yield curve: A macro-finance approach”, by H. Dewachter, L. Iania and M. Lyrio, *Research series*, March 2013.
255. “The Single supervisory mechanism or ‘SSM’, part one of the Banking Union”, by E. Wymeersch, *Research series*, April 2013.
256. “Nowcasting Belgium”, by D. de Antonio Liedo, *Research series*, April 2013.
257. “Human capital, firm capabilities and productivity growth”, by I. Van Beveren and S. Vanormelingen, *Research series*, May 2014.
258. “Monetary and macroprudential policies in an estimated model with financial intermediation”, by P. Gelain and P. Ilbas, *Research series*, May 2014.
259. “A macro-financial analysis of the euro area sovereign bond market”, by H. Dewachter, L. Iania, M. Lyrio and M. de Sola Perea, *Research series*, June 2014.
260. "Economic importance of the Belgian ports: Flemish maritime ports, Liège port complex and the port of Brussels - Report 2012", by C. Mathys, *Document series*, June 2014.
261. “European competitiveness: A semi-parametric stochastic metafrontier analysis at the firm level”, by M. Dumont, B. Merlevede, G. Rayp and M. Verschelde, *Document series*, July 2014.
262. “Employment, hours and optimal monetary policy”, by M. Dossche, V. Lewis and C. Poilly, *Research series*, September 2014.
263. “On the conjugacy of off-line and on-line Sequential Monte Carlo Samplers”, by A. Dufays, *Research series*, September 2014.
264. “The effects of state aid on Total Factor Productivity growth”, by P. Van Cayseele, J. Konings and I. Sergant, *Research series*, October 2014.
265. “Assessing the role of ageing, feminising and better-educated workforces on TFP growth”, by A. Ariu and V. Vandenberghe, *Research series*, October 2014.
266. “A constrained nonparametric regression analysis of factor-biased technical change and TFP growth at the firm level”, by M. Verschelde, M. Dumont, B. Merlevede and G. Rayp, *Research series*, October 2014.
267. “Market imperfections, skills and total factor productivity: Firm-level evidence on Belgium and the Netherlands”, by S. Dobbelaere and M. Vancauteren, *Research series*, October 2014.
268. “Import competition, productivity and multi-product firms”, by E. Dhyne, A. Petrin, V. Smeets and F. Warzynski, *Research series*, October 2014.
269. “International competition and firm performance: Evidence from Belgium”, by J. De Loecker, C. Fuss and J. Van Biesebroeck, *Research series*, October 2014.
270. “Acquisitions, productivity, and profitability: Evidence from the Japanese cotton spinning industry”, by S. Braguinsky, A. Ohyama, T. Okazaki and C. Syverson, *Research series*, October 2014.
271. “Total factor productivity: Lessons from the past and directions for the future”, by B. van Ark, *Research series*, October 2014.
272. “Outward Foreign Direct Investment and domestic performance: In search of a causal link”, by E. Dhyne and S. S. Guerin, *Research series*, October 2014.
273. “Economic importance of air transport and airport activities in Belgium - Report 2012”, by F. Van Nieuwenhove, *Document series*, November 2014.
274. “Fiscal policy and TFP in the OECD: Measuring direct and indirect effects”, by G. Everaert F. Heylen and R. Schoonackers, *Research series*, November 2014.
275. “Effectiveness and transmission of the ECB's balance sheet policies”, by J. Boeckx, M. Dossche and G. Peersman, *Research series*, December 2014.
276. “How do exporters react to changes in cost competitiveness?”, by S. Decramer, C. Fuss and J. Konings, *Research series*, January 2015.
277. “Optimal monetary policy response to endogenous oil price fluctuations”, by A. Stevens, *Research series*, January 2015.
278. “Comparing fiscal multipliers across models and countries in Europe”, by J. Kilponen, M. Pisani, S. Schmidt, V. Corbo, T. Hledik, J. Hollmayr, S. Hurtado, P. Júlio, D. Kulikov, M. Lemoine, M. Lozej, H. Lundvall, J. R. Maria, B. Micallef, D. Papageorgiou, J. Rysanek, D. Sideris, C. Thomas and G. de Walque, *Research series*, March 2015.
279. “Assessing European competitiveness: The new CompNet micro-based database”, by P. Lopez-Garcia, F. di Mauro and the CompNet Task Force, Research series, April 2015.
280. “FloGARCH: Realizing long memory and asymmetries in returns volatility”, by H. Vander Elst, Research series, April 2015.
281. “Does education raise productivity and wages equally? The moderating roles of age, gender and industry”, by F. Rycx, Y. Saks and I. Tojerow, Research series, April 2015.
282. “Assessing European firms’ exports and productivity distributions: The CompNet trade module”, by A. Berthou, E. Dhyne, M. Bugamelli, A.-M. Cazacu, C.-V. Demian, P. Harasztosi, T. Lalinsky, J. Merikül, F. Oropallo and A. C. Soares, *Research series,* May 2015.
283. "Economic importance of the Belgian ports: Flemish maritime ports, Liège port complex and the port of Brussels - Report 2013", by F. Van Nieuwenhove, *Document series*, June 2015.

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

Editor

Jan Smets

Governor of the National Bank of Belgium

Layout: NBB Microeconomic Analysis
Cover: NBB AG – Prepress & Image

Published in June 2015