

ECONOMIC IMPORTANCE OF THE BELGIAN PORTS:

Flemish maritime ports, Liège port complex
and the port of Brussels – Report 2009



Working Paper Document

Claude Mathys

June 2011 **No 215**

Editorial Director

Jan Smets, Member of the Board of Directors 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: <http://www.nbb.be>

© National Bank of Belgium, Brussels

All rights reserved.

Reproduction for educational and non-commercial purposes is permitted provided that the source is acknowledged.

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, Oostende, 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 paper¹ provides an extensive overview of the economic importance and development of the Flemish maritime ports, the Liège port complex and the port of Brussels in the period 2004 - 2009, with an emphasis on 2009. Focusing on the three major variables of value added, employment and investment, the report also provides some information about social balance and 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.

The developments concerning economic activity in the six ports in 2008 - 2009 are summarised in this table:

Changes from 2008 to 2009 (in percentages)	Value added (current prices)	Employment (Full-time Equivalents)	Investment (current prices)	Tonnage (metric tonnes)
Flemish maritime ports				
Direct	- 11.8	- 2.5	- 18.8	- 14.3
Indirect	- 1.6	- 6.4		(seaborne)
Total	- 7.0	- 4.7		
Liège port complex				
Direct	- 7.3	- 7.9	+ 28.4	- 19.9
Indirect	- 3.2	- 6.7		(inland)
Total	- 5.3	- 7.2		
Port of Brussels				
Direct	+ 0.3	- 2.2	- 28.6	- 18.0
Indirect	+ 2.8	- 6.8		(inland)
Total	+ 1.5	- 4.9		
Belgian ports				
Direct	- 11.0	- 3.0	- 15.0	- 14.7
Indirect	- 2.3	- 6.6		
Total	- 7.0	- 5.0		

¹ Update of Mathys C. (July 2010), *Importance économique des ports belges: Ports maritimes flamands, complexe portuaire liégeois et port de Bruxelles - Rapport 2008*, NBB, Working Paper No. 192 (Document series). All figures have been updated. This paper is available on the following address <http://www.nbb.be/doc/ts/publications/wp/wp192Fr.pdf>.

In terms of maritime cargo traffic, the downturn recorded during the last quarter of 2008 continued throughout 2009. Direct value added declined in all the ports in Flanders. Maritime branches as a whole contracted. Only the value added of the maritime branches in the port of Ostend remained stable. The non-maritime branches as a whole saw a contraction in all the Flemish ports. It was the port of Antwerp that suffered the most from the drop in the value added. Its maritime branches shrank by nearly one-third. While the non-maritime branches were slightly down. The port of Ghent recorded a bigger decrease in the non-maritime branches. Conversely, the value added in the port of Zeebrugge fell more sharply in the maritime branches.

Direct employment in the ports of Flanders as a whole declined during the year 2009. Except in Ghent, direct employment in the maritime branches fell in all the Flemish ports. Similarly, only one of them, the port of Ostend, recorded a rise in employment in the non-maritime branches. Thanks to this, it has been the only Flemish port to register direct employment growth.

Investment decreased in all the ports in Flanders. The decline in investment was between one-sixth and one-fifth in the ports of Ghent, Antwerp and Zeebrugge. While Ostend recorded a cut of more than one-third in its investment levels in 2009.

The volume of cargo handled in the port of Liège decreased strongly in 2009. Direct value added and employment registered a significant decline. Maritime and non-maritime branches were down for both value added and employment. Thanks to the "other services" branch of activity, investment rose steadily.

The volume of cargo handled at the port of Brussels declined in 2009. Value added in this port remained steady. But employment contracted slightly. After the growth seen in 2008, investment was down by more than a quarter.

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 2009.

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.

Corresponding author:

NBB, Microeconomic Information department, e-mail: claudio.mathys@nbb.be

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

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

The author would like to thank her colleagues from the Microeconomic Information department for their assistance and support. Special thanks go to Messrs Luc Dufresne, secretary general at the NBB, Philippe Quintin, 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. The advice given unstintingly by the Research and Statistics departments was also greatly appreciated.

Contents

Foreword	1
Introduction	2
1 ECONOMIC IMPORTANCE OF THE BELGIAN PORTS	6
1.1 Traffic in the Belgian ports	6
1.2 Competitive position of the Belgian ports.....	8
1.3 Direct and indirect value added in the Belgian ports.....	10
1.4 Direct and indirect employment in the Belgian ports.....	12
1.5 Investment in the Belgian ports.....	13
1.6 Breakdown of the variables by company size.....	14
1.7 Social balance sheet in the Belgian ports	14
1.8 Financial ratios in the Belgian ports	18
2 PORT OF ANTWERP	20
2.1 Port developments	20
2.2 Value added	21
2.3 Employment	24
2.4 Investment.....	26
3 PORT OF GHENT	30
3.1 Port developments	30
3.2 Value added	31
3.3 Employment	34
3.4 Investment.....	36
4 PORT OF OSTEND	39
4.1 Port developments	39
4.2 Value added	40
4.3 Employment	42
4.4 Investment.....	44
5 PORT OF ZEEBRUGGE	47
5.1 Port developments	47
5.2 Value added	48
5.3 Employment	51
5.4 Investment.....	53
6 PORT OF LIÈGE	56
6.1 Port developments	56
6.2 Value added	57
6.3 Employment	59
6.4 Investment.....	61
7 PORT OF BRUSSELS	64
7.1 Port developments	64
7.2 Value added	65
7.3 Employment	67
7.4 Investment.....	69
8 SUMMARY	72
LIST OF ABBREVIATIONS	74
ANNEX 1: DETAILED SOCIAL BALANCE SHEET IN 2009	75
ANNEX 2: LIST OF NACE-BEL BRANCHES	78
BIBLIOGRAPHY	83
NATIONAL BANK OF BELGIUM - WORKING PAPERS SERIES	85

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 concern the activities resulting from the presence of maritime and non-maritime sectors in or near the ports, while the latter relate to the value added and employment generated by suppliers and subcontractors serving these sectors and based in Belgium.

For the first time in this study, the NACE-BEL 2008 code has been used to select and classify companies by sector. The new nomenclature for classifying economic activities, the NACE-BEL 2008, is part of a major revision of international and European classification system for economic activities and products (NACE Rev.2) done by the European Commission². The change in the NACE-BEL codes applies to 2009. The process was conducted with a smooth transition in mind.

The statistical data cover the period 2004 - 2009, but only the main developments recorded in the period 2008 - 2009 are discussed in detail. The number of annexes is limited to³:

- the detailed social balance sheet for 2009
- the list of NACE-BEL 2008 branches.

The methodology remains unchanged: the criteria for selecting firms and the analysis are the same as in previous editions.

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. The principal trends identified in the "flash estimates" published in October 2010⁴ are confirmed in the report. Corrections specific to the individual companies that operate at the ports and the switch to NACE-BEL 2008 caused some changes in trend sizes. For the six ports overall, direct value added and direct employment moved a bit slower than what was indicated based on the "flash estimates" for 2009.

² For more information on the NACE-BEL 2008, please visit the "Statistics & Analyses" website of FPS Economy, SMEs, Self-employed and Energy (<http://statbel.fgov.be/en/statistics/figures/>)

³ The details of the distribution of the indirect effects per sector and the breakdown of the results of firms according to their size are available on request. All requests can be addressed to microeconomic.analysis@nbb.be.

⁴ See <http://www.nbb.be/doc/TS/Enterprise/Press/2010/cp101020En.pdf>.

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 2004 - 2009 concern the study of the following variables:

- value added at current prices⁵: 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 prices⁶: this corresponds to the tangible fixed assets acquired during the year, including capitalised production costs.

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. These ratios 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 six parts⁷, 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 six 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 microeconomic data used were obtained from the annual accounts filed with the Central Balance Sheet Office⁸ and from the statistics produced by the National Accounts Institute (NAI⁹). The most recent annual accounts for the 2009 financial year included in this study were filed with the Central Balance Sheet Office in April 2011¹⁰. The figures for value added and employment, necessary to estimate the

⁵ Unless otherwise stated, the text always indicates value added at current prices. Developments at constant prices are explicitly mentioned. Value added at constant prices is calculated by means of the deflator of gross value added.

⁶ Unless otherwise stated, investment is always indicated at current prices in the text. Developments at constant prices are explicitly mentioned. Investment at constant prices is calculated by means of the deflator of gross fixed capital formation.

⁷ The six parts of the company report are: identifying company information, a summary of the principal annual financial statement items, a comparison of company ratios with those of its economic sector, a presentation of income and expense flows, a list of companies in the same economic sector, the company's positioning in one of the six pre-defined categories of financial health based on its composite financial health indicator.

⁸ A service of the National Bank's Microeconomic Information Department. See www.nbb.be / Central Balance Sheet Office.

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 IOT for 2000 and the supply and use table for 2004.

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 high proportion of firms -mainly small businesses or those in difficulties- fail to meet the obligation by that date. In April 2011, that percentage was close to zero and the impact on the figures is minimal.

indirect effects up to 2009, are also published by the NAI after a certain time lag. The latest updates were included in the calculations, while the methodology remained unchanged. For more information, see the 2004 report published in June 2006¹¹.

The NACE-BEL 2008 system replaced the NACE-BEL 2003 system for the purposes of selecting and ranking by sector the companies included in the 2009 report population. The NACE-BEL 2008 is the new classification system for economic activities employed by the Institute of National Accounts. The NACE-BEL 2008 is part of a major revision of international and European nomenclatures for economic activities and products (NACE Rev.2) done by the European Commission and approved by the European Parliament and the Council¹². In changing over to NACE-BEL 2008 in this report, special attention has been paid to making a smooth transition. The choice of which NACE-BEL 2008 categories to include in the report was based on the NACE-BEL 2003 categories chosen for previous reports. Because economic activities did not always fall into the same categories, some adjustments were made. These have to do mainly with more precise definitions of the activities found in the report or, conversely, the application of broader concepts as a function of changes in the nomenclature. Naturally, such adjustments were performed on the entire series, back to 2004, in order to avoid discrepancies that could make it difficult to interpret trends.

For the past two years, 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.

International environment

Global economic developments in 2009¹³

As a result of the worst economic and financial crisis since World War II, **global production and GDP** fell worldwide, for the first time since the 1930s. The GDP contraction affected a number of countries. Developed economies and European economies in transition were the hardest hit, whereas South and East Asia continued to grow. The global economy was expected to return to growth in 2010, but the pace of recovery likely varied from country to country.

In 2009, GDP shrank by 4.1 % in the euro area¹⁴. The US economy contracted by 2.6 %. Developed countries were confronted with, sluggish economic activity and rising unemployment and anaemic private sector lending. The robust measures enacted by governments to halt the downward spiral of the financial and economic system left public finances vulnerable, inducing a rapid rise in debt.

Emerging and developing countries, by contrast, experienced moderate GDP growth of 2.7 %. But there were substantial regional disparities: the CIS and Central and Eastern Europe – hit hard by a steep drop in capital inflows – experienced a net contraction, whereas emerging Asia - in particular China and India - posted growth of around 7.2 %. Growth stalled in Latin America and the Caribbean, compared with a slight growth in the Middle East, North Africa and sub-Saharan Africa.

World trade and maritime transport¹⁵

The plunge of the world industrial production in 2009 severely affected demand for commodities and energy and thus demand for maritime transport services. Actually, world trade volumes declined by around 11 %. Developed countries were hit hardest by the decline.

¹¹ The methodology is presented in the introduction by Lagneaux F. (2006), Economic importance of the Belgian ports: Flemish maritime ports and Liège port complex – report 2004, NBB, Working Paper nr. 86 (Document series) and set out in full in annexes 1 to 4. The study is available on the following address: <http://www.nbb.be/doc/ts/publications/wp/wp86En.pdf>.

¹² REGULATION (EC) No 1893/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 20 December 2006 establishing the statistical classification of economic activities NACE Revision 2 and amending Council Regulation (EEC) No 3037/90 as well as certain EC Regulations on specific statistical domains

¹³ Main source for the section: IMF, *World Economic Outlook 2011 (April 2011)*.

¹⁴ Source: Eurostat, real GDP growth rate. The production trend excluding Estonia provided by the IMF is identical.

¹⁵ Main source: United Nations Conference on Trade and Development (2010), *Review of Maritime Transport 2010*, UNCTAD New York and Genève.

Due to the global crisis, **world export volumes** fell drastically (UNCTAD estimates the drop at just under 14 %, or 23 % in value terms). The trading volumes of the principal emerging and developed economies fell in 2009, with the exception of imports to China and India. Trade by developed countries fell faster than the world average. These countries are big importers of manufactured goods and consumer products and since these goods are often transported by container, there was naturally downward pressure on container transport. The latter part of 2010 brought some improvement, notably due to developing and transitional economies.

The year 2009 was marked by a 4.5 % drop in maritime trade volumes. Developing countries still account for the lion's share of this trade, with more than 60% of cargo loaded and 55 % of cargo unloaded. However, import volumes rose more rapidly and gained ground on export volumes. From a regional standpoint, Asia represents more than two-fifths of this trade.

In its study on European maritime transport statistics¹⁶, Eurostat estimates the decline in maritime traffic for European Union ports in 2009 at 12 %. Dry bulk goods fell by 19%, liquid bulk goods by 6 %, and container traffic by 11 %. The biggest declines were seen in Romania, Slovenia, Finland and Germany. Only Estonia experienced a positive trend due to the increase in the loading of petroleum products destined for the United States. Traffic in Malta was relatively stable.

The European Union's leading partner for maritime transport is Russia. The relationship is dominated by the transport of petroleum products.

The largest volumes of maritime traffic handled were by the UK, followed by the Netherlands. Inflows of goods and cargo made up 62 % of European traffic. Liquid bulk goods are the most significant type of material handled by most countries (42 %). Dry bulk goods account for just under one-quarter of traffic. However, in Poland, Latvia and Slovenia, the proportion is between 43 % and 48 %. Container traffic accounts for less than one-fifth of traffic, but is twice the proportion in Belgium and Germany.

Maritime freight services market

With the recession, demand for energy fell in late 2008 and remained weak in 2009. The result was a decline in **maritime trade by tanker** of these types of products (LNG, oil and petroleum products). The first half of 2009 was tough for the oil tanker transport sector. However, a harsh winter in northern Europe and an upswing in demand fuelled by relatively low oil prices resulted in brisker demand for oil later in the year.

In 2009, one-quarter of the capacity of the oil tanker fleet was not delivered by the scheduled date, and 34 VLCCs¹⁷ were used for oil storage. For the years ahead, the supply/demand balance in oil transport remains uncertain. The tanker transport market for petroleum products also spent the year 2009 in the doldrums, due to weaker demand both for distillates and other products used for industrial purposes and for gasoline and diesel for cars.

The market for **liquefied natural gas** exhibited some contrasts. LNG imports from the US rose by 28% in 2009, driven by a cold winter and low prices. However, with the expanded operation of unconventional gas reservoirs, the increase in imports is unlikely to last. Imports by major net-importing Asian countries and Europe fell in 2009. Due to the global economic crisis and a depressed market, numerous LNG projects were postponed. However, production is expected to increase in 2010, notably in Qatar.

For the first time since 1983, **transport of solid cargo**, both containers and dry bulk goods, fell. In 2009, trade in the top five dry bulk goods (iron ore, coal, grain, bauxite/alumina and natural phosphate) rose by 1.6 %. But this masks disparities between types of cargo: trade in bauxite, alumina and phosphate fell, whereas volumes of iron ore and coal rose. And yet, world steel production fell by nearly 8 % in 2009. However, the bulk market did better than expected, due principally to strong Chinese demand for iron ore and coal. Bolstered by government subsidies, Chinese steel production did not decline.

Container transport fell for the first time ever. As a result of the financial and economic crisis, consumer demand for manufactured goods and consumer durables declined. The majority of these goods are transported by container. All in all, container trade volume fell by 9 %.

¹⁶ Giuliano Amerini, Data in focus 44/2010, Maritime transport of goods – 4th quarter 2009, 10/11/2010, Eurostat, European Union 2010.

¹⁷ Very Large Crude Carrier

Structure of the world fleet

Over the 12 months from January 2009 to January 2010, **world commercial fleet tonnage** rose by 7 %. Liquefied natural gas tanker tonnage increased by a little less than 12 %. Bulk carriers remained the leading type of vessel in terms of tonnage with growth of just under 9 % over 12 months, whereas oil tankers posted growth of 7.6 % to come in second place. While the number of container ships rose only marginally, their tonnage increased by 4.5 %. In January 2010, the ten biggest maritime companies operated half of the fleet of container ships, which represented a very slight decline.

The average age of ships fell in 2009. By type of ship, the average fell the furthest for bulk carriers. Container ships are still the youngest fleet, with an average age of under 11 years. All categories combined, the average age is 23 years. In 2009, as many as 3,658 new ships were delivered. This new record is the result of orders placed before the crisis. Measured in deadweight tonnage, the delivery of new ships increased by 42 % year on year. In 2009, 1,205 boats were retired and, for the most part, demolished, despite a more than two-thirds drop in scrap metal prices between mid-2008 and the start of 2009. Three countries account for 90 % of the demolition market, namely China, India and Bangladesh. Under these conditions, the price of new and used ships fell sharply in 2009, with most decreases in the prices of used ships ranging from 40 % to nearly 70 % between 2008 and 2009. Freight transport prices and used ship prices react very rapidly to new market conditions (in this case, reduced demand for cargo transport paired with increased supply due to newly delivered ships), whereas the arrival of new maritime transport tonnage on the market is much less flexible.

Because of the lag between the time when a ship is ordered and when its construction is actually finished, new ships were delivered in 2009 despite the steep drop in demand as a result of the crisis. In the **container ships sector**, the return to owners of excess tonnage, demolition, laying up and reduction in navigation speed made it possible to stabilise freight transport prices after a significant drop. Transport prices began to decline in the second half of 2008 and continued to fall over the first four months of 2009 before stabilising through the end of the year. Comparing the third quarter of 2009 to the year-earlier period, average freight prices for the three principal commercial routes fell by between 13 % and 36 %. Numerous statistics tell the same story and confirm the downturn in freight transport prices on commercial lines in 2009.

In the **tanker market**, freight transport prices remained mired at a low level in 2009. Weak demand for refined products and abundant inventories were the principal culprits. But the situation was aggravated by the delivery of new ships. Overall, in 2009, the fleet of tankers expanded by 5.2 % in deadweight tonnage terms, forcing shipping lines to use some vessels as floating storage tanks.

Maritime ports

Ports naturally also felt the effect of the economic crisis, which ultimately hurt demand for consumer goods from late 2008. Although the year 2008 started off with very good results, the abrupt slowdown in the fourth quarter – while not preventing a full-year increase – sapped growth in volume handled. For example, for the full year 2008, the increase in container volumes handled, measured in TEU, was only around 4.5 %. Preliminary 2009 figures indicate a drop of around 10 %. Growth at Chinese ports, excluding Hong Kong, plummeted from 12 % in 2008 to -6 % in 2009. Volumes handled by the world's 20 largest container terminals grew by 5 % between 2007 and 2008, then fell by just over 10 % the following year. The world's five biggest ports experienced decreases in traffic ranging from 10 % to 15 %. UNCTAD also observed that in addition to their role as regional gateway ports, maritime ports also increasingly play a role in transshipment to regional transport services, particularly for lines serving the major maritime routes.

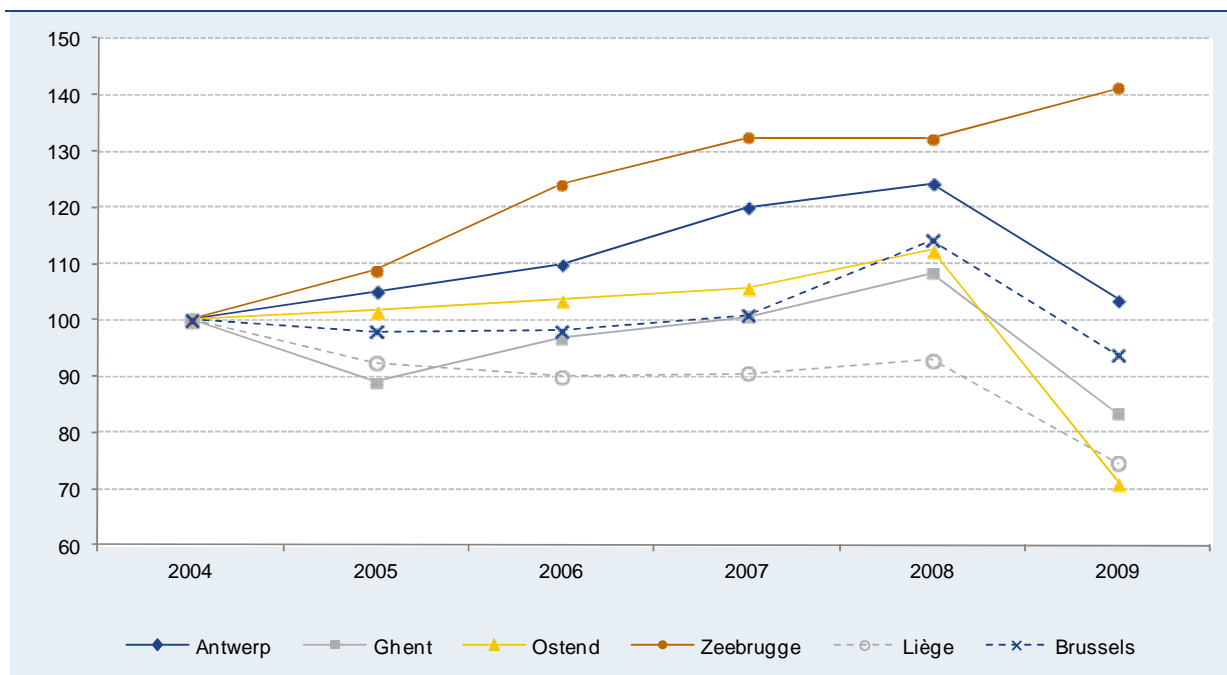
1 ECONOMIC IMPORTANCE OF THE BELGIAN PORTS

Having set in at the end of 2008 following the financial crisis, the economic crisis persisted throughout 2009. In an adverse economic climate featuring a slump in demand, most Belgian ports saw a steep decline in their traffic. For the year as a whole, traffic, value added, employment and investment were down at the six Belgian ports, viewed overall.

1.1 Traffic in the Belgian ports

CHART 1 CARGO TRAFFIC IN THE BELGIAN PORTS

(indices 2004 = 100)



Sources: *Jaaroverzicht Vlaamse havens 2008* of Vlaamse Havencommissie, Port of Brussels and Autonomous Port of Liège.

The decline in Belgian port traffic that began in 2008 was felt acutely in 2009, with the notable exception of the port of Zeebrugge. The cargo volumes transhipped by the four Flemish maritime ports in 2009 was down 14 % from the year before. The port of Ostend was the hit the hardest. The Cobelfret shipping line's decision to suspend and then terminate service between Ostend and the UK was a serious blow to its ro-ro traffic. And unlike other Flemish ports, ro-ro traffic is a majority of Ostend's operations. This aggravated the termination's impact on the port's overall traffic. For all of the Flemish maritime ports combined, ro-ro traffic fell by 27 %. The ports of Ghent and Zeebrugge saw their traffic decline by around one-fifth, Antwerp's performance was in line with the Flemish ports' average, and Ostend's traffic slumped by more than 40 %¹⁸.

With respect to container traffic, Zeebrugge was the only port not to lose volume. Its container traffic actually grew by 17 %, just missing the 25 million tonnes mark in volumes handled. The port of Ghent fell back below its 2007 level, down 5 %, but containers now represent 2 % of its traffic because the decline was less than that of other types of cargo, such as ro-ro or dry bulk goods. Container traffic in the port of Antwerp fell by nearly 14 % in volumes, to a level midway between its 2006 and 2007 levels, i.e. 87 million tonnes. This represents 55 % of port traffic, compared with just under 54 % the year before. For all Flemish maritime ports combined, container traffic fell by 8.5 % in 2009. Expressed in TEU, the decline was more than 11 %. For both Antwerp and Zeebrugge, we can deduce a declining number of empty containers transhipped.

Conventional general cargo traffic fell in Antwerp and Ghent, but held steady in Ostend and was relatively stable in Zeebrugge. The declines in Antwerp and Ghent were severe, respectively 38 % and

¹⁸ Results calculated using ro-ro traffic excluding containers.

24 %. The slowdown in activity in the metalworking and automotive industries is partly to blame for this poor showing. With transshipment of 10 million tonnes for Antwerp and 2 million tonnes for Ghent, they remain the two principal Belgian ports for this type of cargo. The port of Zeebrugge managed to maintain its 2008 level, but this type of traffic still represents less than 2 % of the port's overall maritime traffic.

The transshipment of liquid bulk cargo rose slightly in the ports of Antwerp and, much more markedly, Zeebrugge. It represents one-quarter of all traffic at the port of Antwerp, compared with just one-fifth in 2008. That makes it three years that traffic has exceeded the 39 million tonnes mark without breaking the 40 million threshold. The amount transshipped in the port of Zeebrugge rose from 6.2 million tonnes to nearly 8 million tonnes. This growth is partly attributable to the unloading of liquid natural gas. The volume of liquid bulk traffic at the port of Ostend is weak, and even though it contracted significantly, the drop had little effect on the port's overall traffic. The volume of liquid bulk transshipment at the port of Ghent fell by 2 % but remained substantially stronger than in 2007.

The volume of dry bulk were hit hard by the economic crisis of 2009. All Flemish maritime ports posted negative trends for the year. Antwerp felt the biggest decline, down 36 %, due to a considerable drop in transshipment volumes for ore and coal. Ghent, which has a sizeable metalworking industry, also experienced a significant decline, down 28 %. Ostend's volumes dropped back in line with 2007. The transshipment of dry bulk goods in Zeebrugge was also considerably weaker. However, this type of traffic has represented less than 5 % of total traffic for the past five years.

TABLE 1 MARITIME TRAFFIC IN THE FLEMISH PORTS IN 2009

(in millions of tonnes, unless otherwise stated)

	Antwerp	Ghent	Ostend	Zeebrugge	Total	Change from 2008 to 2009 (in p.c.)	Share in 2009 (in p.c.)
Containers	87,248	418	0	24,890	112,556	- 8.5	49.2
<i>Change 2008 - 2009 (p.c.)</i>	- 13.9	- 5.3	-	+ 17.4			
Roll-on/roll-off ¹⁹	3,203	1,324	3,949	9,514	17,991	- 27.1	7.9
Conventional general cargo ²⁰	10,450	2,359	15	866	13,691	- 34.6	6.0
Liquid bulk	39,522	3,725	15	7,993	51,256	+ 3.8	22.4
Dry bulk	17,384	12,960	1,391	1,598	33,332	- 31.9	14.6
TOTAL	157,806	20,787	5,370	44,862	228,826	- 14.3	100.0
<i>Change 2008 - 2009 (p.c.)</i>	- 16.7	- 23.1	- 36.7	+ 6.8			

Source: *Jaaroverzicht Vlaamse havens 2009* of Vlaamse Havencommissie.

The economic crisis took a heavy toll on the port of Liège, which is an important logistical link for the steel-making industry. All together, its water transport traffic fell by 20 % in 2009, to slightly over 16 million tonnes. The volumes of coal, lignite, ore and metals transshipped fell sharply. One reason for the steep drop was the temporary closure of the last active furnace in Liège at the Ougrée site and of the Chertal steel factory. By contrast, the categories of wood and wood products; agricultural products, ancillary raw materials and waste; and refined petroleum products saw their volume increase.

The port of Brussels was also affected by the drop in trade. It was unable to maintain its record 2008 performance, with its own traffic falling from 4.9 million to 4 million tonnes, an 18 % drop. Building materials fell by 21 % and now represent only half of traffic. Petroleum products, which account for more than one-quarter of volumes loaded and unloaded in the port, contracted by 6 %. The decrease in agricultural and food products reached more than 20 %. Container terminal traffic fell from 18,000 TEU in 2008 to 13,500 TEU in 2009.

¹⁹ 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".

²⁰ 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 range²¹. The share of the four Flemish ports in that range was down very slightly, but was still close to 23 % in 2009. The decline in the volume transhipped was therefore slightly above the average for the range.

All ports in the Hamburg-Le Havre range saw their traffic fall in 2009. The hardest hit was the **port of Dunkirk**, which saw transhipped volumes fall by 22 %. The declines were most severe in bulk goods, with a 16 % fall in liquids and 35 % drop in solids. Most of the port of Dunkirk's liquid bulk goods are hydrocarbons. Crude oil volumes, all of which are inflows, fell by 29 %. Refined hydrocarbons declined by 8 %. Ores, which account for more than half of dry bulk goods, plunged by 40 %, and coal dropped by 37 %. Volumes of cereals and sand contracted by around 9 %. Container and ro-ro traffic were spared, losing only 1 % and 2 % respectively. The latter benefited from an excellent performance by Norfolkline in passenger traffic and passenger vehicles. Overall, general cargo traffic fell by 6 %.

The **port of Hamburg** did marginally better, with a 21.4 % drop in volumes handled, which amounts to a loss of 30 million tonnes. Imports decreased by 24 %, whereas exports fell by 17 %. General cargo, which is the port's biggest business, was the main culprit, with a 25 % decline. Bulk goods fared better, down just over 13 %. Measured in TEU, container transshipment fell by 28 %, or 7 million TEU. Traffic with Asia contracted by 1.3 million TEU to 4.2 million TEU in 2009.

Traffic at the **port of Bremen** fell by 15 %. Of the 63 million tonnes handled in 2009, 55 million were general cargo and 10 million were bulk goods. The port was hit by the severe slowdown in the automobile industry. The port's car traffic fell by 40 % to 1.2 million units. Container transshipment volumes fell by 1 million TEU, or 17 %.

With a transshipment volume of 387 million tonnes, making it the biggest port in the range, the **port of Rotterdam** managed to limit the drop in its traffic to 8 %. Dry bulk goods traffic fell 29 % to 67 million tonnes. Ore traffic was cut in half to 23 million tonnes, and coal contracted by 12 %. Agricultural bulk goods lost just over one-fifth. Among liquid bulk goods, the drop in crude oil unloaded (-6 %) and other liquid bulk goods (-16 %) was offset by the increase in quantities of petroleum products handled (+23 %). Overall, liquid bulk goods rose by 1 % to 196 million tonnes. General cargo fell by 8 % to 122 million tonnes. Container traffic fell 6 % but managed to remain above the 100 million tonnes mark. Measured in TEU, the decline was just under 10 %. Ro-ro traffic contracted by one-tenth to 16 million tonnes.

The **port of Amsterdam** experienced the least negative change in the range. Its excellent result was made possible by liquid bulk goods, whose volumes rose 13 % to 38.1 million tonnes on the back of strong refined products (+15 %). Dry bulk volumes handled, by contrast, fell 12 % to 30.9 million tonnes. Coal lost 15 % and animal feed dropped 7 %. Overall, bulk goods were relatively stable. General cargo plunged 38 % to 4.3 million tonnes. In this category, the number of containers expressed in TEU collapsed by more than 50 %.

In the **Zeeland Seaports** area, which includes the ports of Vlissingen and Terneuzen, traffic fell by just over 13 %, bringing volumes close to 2003 levels. The decline was more pronounced at Vlissingen (-18 %) than at Terneuzen (-7 %). The volume of petroleum products handled rose by 4 %. By contrast, agricultural products lost more than one-quarter of their traffic, and solid fuels, 11 %. Transshipment of chemical products fell by 5 %, and that of fertilisers by 16 %.

Like most ports, the **port of Le Havre** experienced diminished traffic in 2009. However, the downturn was relatively limited, with transhipped volumes down just over 8 % to 73.8 million. Dry bulk goods suffered the most, down nearly 18 %. Apart from coal, which fell only 11 %, other types of bulk goods lost more than 20 %, led by a 48 % decline in animal feed. Transshipment of general cargo fell by 9 %. Within this category, container traffic was down 11 %. Lastly, liquid bulk goods lost 7 %, and unloading of crude oil, which represents two-thirds of this traffic, fell 9 %.

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

TABLE 2 TOTAL MARITIME TRAFFIC IN THE HAMBURG - LE HAVRE RANGE (INCLUDING OSTEND, TERNEUZEN AND VLISSINGEN)

(in millions of tonnes, unless otherwise stated)

Port	2004	2005	2006	2007	2008	2009	Annual average change from 2004 to 2009 (in p.c.)	Change from 2008 to 2009 (in p.c.)	Average share in the range from 2004 to 2009 (in p.c.)	Share in 2009 (in p.c.)
Antwerp	152.3	160.1	167.4	182.9	189.4	157.8	+ 0.7	- 16.7	16.2	15.6
Ghent	25.0	22.2	24.1	25.1	27.0	20.8	- 3.6	- 23.1	2.3	2.1
Ostend	7.5	7.7	7.8	8.0	8.5	5.4	- 6.6	- 36.7	0.7	0.5
Zeebrugge	31.8	34.6	39.5	42.1	42.0	44.9	+ 7.1	+ 6.8	3.8	4.4
Total Flemish ports	216.6	224.5	238.8	258.1	266.9	228.8	+ 1.1	- 14.3	23.0	22.7
Amsterdam ²²	51.9	53.8	61.0	65.4	75.8	73.2	+ 7.1	- 3.5	6.1	7.2
Bremen	52.3	54.2	64.6	69.1	74.5	63.1	+ 3.8	- 15.3	6.0	6.2
Dunkirk	51.0	53.4	56.6	57.1	57.7	45.0	- 2.5	- 22.0	5.1	4.5
Hamburg	114.5	125.7	134.9	140.4	140.4	110.4	- 0.7	- 21.4	12.3	10.9
Le Havre	76.2	75.0	73.9	78.8	80.5	73.8	- 0.6	- 8.4	7.3	7.3
Rotterdam	352.6	370.3	381.8	409.1	421.1	387.0	+ 1.9	- 8.1	37.2	38.3
Zeeland Seaports ²³	30.0	30.5	30.2	33.0	33.3	28.8	- 0.8	- 13.5	3.0	2.9
<i>Total for the 12 ports</i>	<i>945.1</i>	<i>987.5</i>	<i>1,041.8</i>	<i>1,110.9</i>	<i>1,150.3</i>	<i>1,010.0</i>	<i>+ 1.3</i>	<i>- 12.2</i>		
<i>Total world traffic</i>	<i>6,846</i>	<i>7,109</i>	<i>7,682</i>	<i>7,984</i>	<i>8,210</i>	<i>7,843</i>	<i>+ 2.8</i>	<i>- 4.5</i>		
Share for the 12 ports in world traffic (in p.c.)	13.8	13.9	13.6	13.9	14.0	12.9				

Sources: For the traffic in the range: port authority data - including the port of Rotterdam statistics - and *Jaaroverzicht Vlaamse havens 2009* of Vlaamse Havencommissie; for world traffic: Unctad, *Review of Maritime Transport 2010*.

Overall, the Hamburg-Le Havre range therefore felt the impact of the global crisis of 2009, with the volume of transshipments down by 8.6 %. Only three ports in the range, Amsterdam, Le Havre and Rotterdam, saw their traffic decline by less than 10 %. In the other ports, traffic diminished by more than a tenth, and was actually down by a fifth at the ports of Dunkirk and Hamburg.

The year 2009 was a tough one for German ports, and the **port of Duisburg** was no exception. The port's water traffic fell from 51 million to 34.5 million tonnes, a 32 % drop. Total trade (by ship, railroad or truck) for the port was a bit better, down 19 % to 44 million tonnes. The volume of crude oil and chemical products contracted by 3 %. Coal and steel traffic, however, plunged. The number of containers handled, expressed in TEU, declined by 4 %.

The Ports of Paris saw their traffic increase by 3 % to 20 million tonnes despite the economic slowdown that plagued 2009. Growth was seen in loading, whereas unloading decreased somewhat. Transshipped volumes of food products, cereals, flours and crude oil rose by 16 %, and that of scrap metals and building debris by respectively 23 % and 24 %. Building materials traffic was fairly stable, holding steady at just under 15 million tonnes. The number of containers increased by one-fifth in 2009 to 138,919 TEU.

Table 3 reveals the major impact of the crisis on traffic at the inland ports. Except at the Ports of Paris, traffic volumes have dropped to levels well below those recorded in 2003. The port of Brussels experienced the smallest decline, with an average fall of 1.3 % over five years, whereas traffic at the port of Duisburg declined on average by 6.9 % per year. In contrast, at the Ports of Paris, traffic increased by 2.2 % on average over the past five years, despite the falls in 2007 and 2008.

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

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

(in millions of tonnes, unless otherwise stated)

Port	2004	2005	2006	2007	2008	2009	Annual average change from 2004 to 2009 (in p.c.)	Change from 2008 to 2009 (in p.c.)
Duisburg ²⁴	49,200	49,100	50,300	52,900	51,000	34,500	- 6.9	- 32.4
Paris	19,597	20,781	22,257	21,921	19,778	20,214	+ 0.6	+ 2.2
Liège ²⁵	22,134	20,461	19,932	20,033	20,578	16,484	- 5.7	- 19.9
Brussels	4,279	4,191	4,200	4,317	4,889	4,011	- 1.3	- 18.0

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

1.3 Direct and indirect value added in the Belgian ports

Following the 2008 financial crisis, economic activity in Belgium contracted in 2009. Value added was down in all sectors of market activity, but industry and construction were the worst affected. The economic situation had repercussions on employment: around 16,000 jobs were lost in 2009. This decline was more marked in industry, but was also evident in construction. In services, growth slackened pace. As a consequence the volume of both exports and imports declined by more than 10 % in 2009.

The value added created in the Belgian ports fell by 11 % in 2009. The biggest fall was seen at the port of Antwerp, where value added was 14.8 % down. In the port's maritime cluster, value added slumped by almost 33 %. In the non-maritime cluster, the decline in the value added of fuel production had a big influence on the overall result. In the same cluster, the decline in trade which had begun in 2005 persisted. The ports of Zeebrugge and Liège recorded a reduction in value added of 7.3 % each. At Zeebrugge, the maritime cluster contracted sharply while the non-maritime cluster achieved variable results, with a decline for industry and land transport and a slight increase for the other sectors. In the port of Liège, though the maritime cluster is also shrinking, it is the sharp contraction in the sectors of the non-maritime cluster, more specifically chemicals and metalworking, that is decisive for the overall picture. The value added of the port of Ghent was down in both the maritime cluster and the non-maritime cluster, but it was the latter that saw the biggest changes, with a steep decline in value added in chemicals and car manufacturing. The value added in metalworking, already hard hit in 2008, continued to fall. At Ostend, the maritime cluster remained stable, but the decline in the non-maritime cluster dragged total value added down with it. Despite a contracting maritime cluster, the port of Brussels succeeded in maintaining value added growth, mainly thanks to its chemicals sector, which made good the 2008 losses.

For the first time in five years, indirect value added recorded a fall. This was due to the reduction in value added produced in the ports combined with a contraction in the value added created at national level. However, this decline was limited to 2.3 % and was not concentrated on a few branches of activity but instead was spread across the majority of branches.

Value added of the firms located outside the ports declined in 2009, driven down mainly by the shipping company segment which lost almost half of its profits. Several firms in this segment suffered a loss of turnover, either because of a sharp reduction in their activities after two years of sustained growth, or because of the decline in freight rates owing to the strong competition in the sector at the time.

By volume, the direct value added of the Belgian ports was down by 12.1 %. The total value added of the ports was 7 % lower, disregarding the price effect. In volume, the reduction was 8.1 %. The volume of indirect value added showed a smaller decline than the direct figures, and thus moderated the fall. The share of direct value added in Belgium's GDP was down by 0.5 % at 4.4 %. Total value added represented 8.5 % of Belgium's GDP (-0.5 %).

²⁴ The traffic considered here is the total of the cargo handled in all Duisburg Ports, thus, totalling the duisport Group and the private company ports.

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

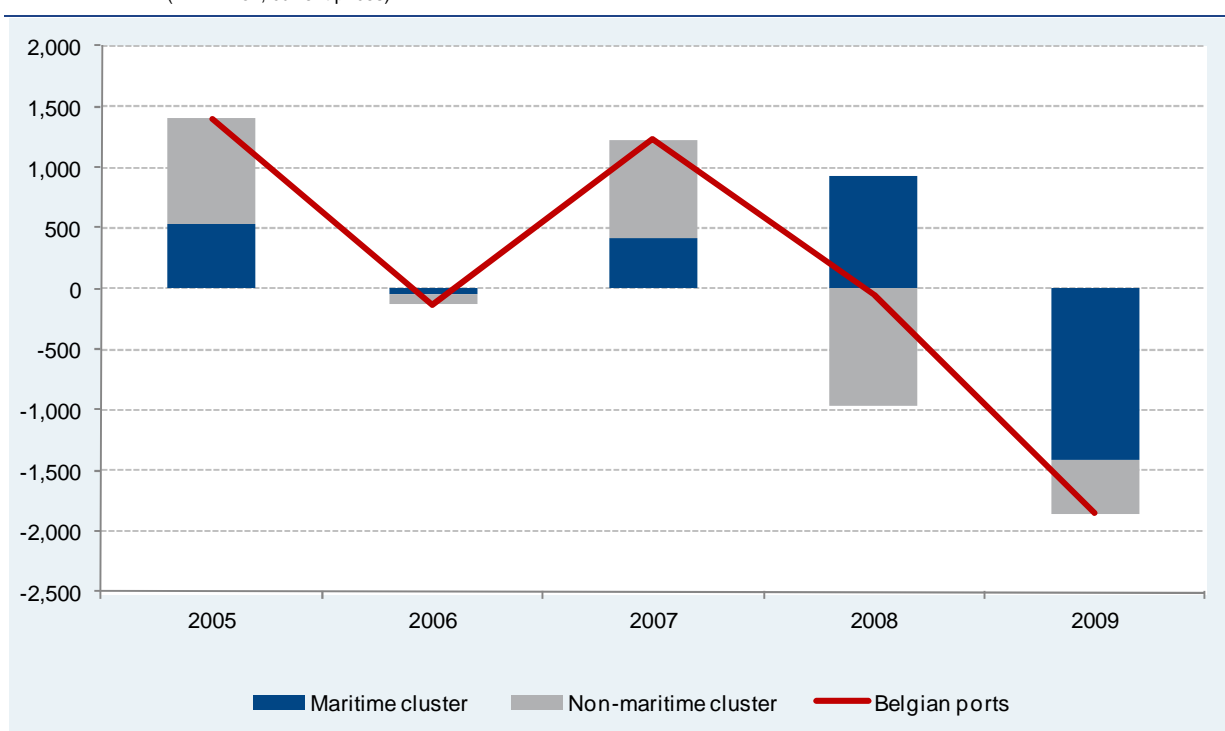
TABLE 4 VALUE ADDED IN THE BELGIAN PORTS

(in € million - current prices)

	2004	2005	2006	2007	2008	2009	Relative share in 2009 (in p.c.)	Change from 2008 to 2009 (in p.c.)	Annual average change from 2004 to 2009 (in p.c.)
1. DIRECT EFFECTS	14,380.5	15,782.2	15,649.3	16,880.4	16,826.1	14,972.6	100.0	- 11.0	+ 0.8
Antwerp	8,257.3	9,352.4	9,091.4	9,825.7	10,086.6	8,590.9	57.4	- 14.8	+ 0.8
Ghent	3,251.5	3,383.3	3,456.9	3,744.7	3,258.2	3,093.6	20.7	- 5.1	- 1.0
Ostend	354.9	393.6	408.6	436.2	477.3	457.2	3.1	- 4.2	+ 5.2
Zeebrugge	795.5	793.9	840.3	895.1	947.7	878.7	5.9	- 7.3	+ 2.0
Liège	1,203.7	1,256.5	1,276.7	1,381.1	1,444.4	1,338.9	8.9	- 7.3	+ 2.2
Brussels	517.7	602.5	575.4	597.6	611.8	613.4	4.1	+ 0.3	+ 3.5
Outside the ports (p.m.) ²⁶ ...	91.0	112.7	76.8	83.4	124.2	104.3	-	- 16.0	+ 2.8
2. INDIRECT EFFECTS	11,845.1	12,307.8	12,905.9	13,687.8	14,273.4	13,952.1	-	- 2.3	+ 3.3
TOTAL VALUE ADDED	26,225.6	28,090.0	28,555.2	30,568.2	31,099.4	28,924.7	-	- 7.0	+ 2.0

Source: NBB (calculations based on the Belgian accounts filed with the Central Balance Sheet Office, and the Belgian IOTs)²⁷.**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).

²⁶ 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.)".

²⁷ This methodological framework entails that some data, such as those related to foreign firms, are not taken into account.

1.4 Direct and indirect employment in the Belgian ports

Direct employment was down by 3 % in 2009 and total employment including indirect effects dropped by 5 %. Indirect employment therefore declined faster than direct employment. This fall in indirect employment was more marked in the fuel production sector, chemicals, metalworking, car manufacturing and other supporting transport activities.

As in 2008, direct employment in the port of Antwerp suffered mainly from a marked decline in car manufacturing. There was also a significant fall in the case of cargo handling and shipping agents and forwarders. In the port of Ghent, car manufacturing, metalworking and to a lesser extent chemicals had a very negative impact on employment. In the port of Ostend, the expansion of employment in the non-maritime cluster made up for the decline in the maritime cluster. In the port of Zeebrugge, cargo handling, other industries and road transport were the sectors with the biggest job losses, though many activities were affected. In the Liège port complex, the slump in metalworking depressed total employment. In the port of Brussels, employment declined in 2009. Job losses were most significant in cargo handling and chemicals.

TABLE 5 EMPLOYMENT IN THE BELGIAN PORTS
(FTE)

	2004	2005	2006	2007	2008	2009	Relative share in 2009 (in p.c.)	Change from 2008 to 2009 (in p.c.)	Annual average change from 2004 to 2009 (in p.c.)
1. DIRECT EFFECTS	119,970	120,670	121,034	122,805	123,853	120,097	100.0	- 3.0	+ 0.0
Antwerp	61,931	62,550	63,275	64,156	64,054	62,577	52.1	- 2.3	+ 0.2
Ghent	27,038	27,203	27,109	27,385	27,643	26,733	22.3	- 3.3	- 0.2
Ostend	4,441	4,445	4,634	4,839	5,025	5,079	4.2	+ 1.1	+ 2.7
Zeebrugge	10,390	10,162	10,492	10,483	10,889	10,480	8.7	- 3.8	+ 0.2
Liège	11,729	11,568	11,016	11,375	11,581	10,670	8.9	- 7.9	- 1.9
Brussels	4,442	4,743	4,509	4,567	4,662	4,559	3.8	- 2.2	+ 0.5
<i>Outside the ports (p.m.)²⁸ ..</i>	<i>1,860</i>	<i>1,979</i>	<i>2,605</i>	<i>2,617</i>	<i>2,752</i>	<i>2,787</i>	<i>-</i>	<i>+ 1.3</i>	<i>+ 8.4</i>
2. INDIRECT EFFECTS	142,013	141,263	144,722	150,879	156,893	146,572	-	- 6.6	+ 0.6
TOTAL EMPLOYMENT	261,982	261,932	265,756	273,684	280,747	266,669	-	- 5.0	+ 0.4

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

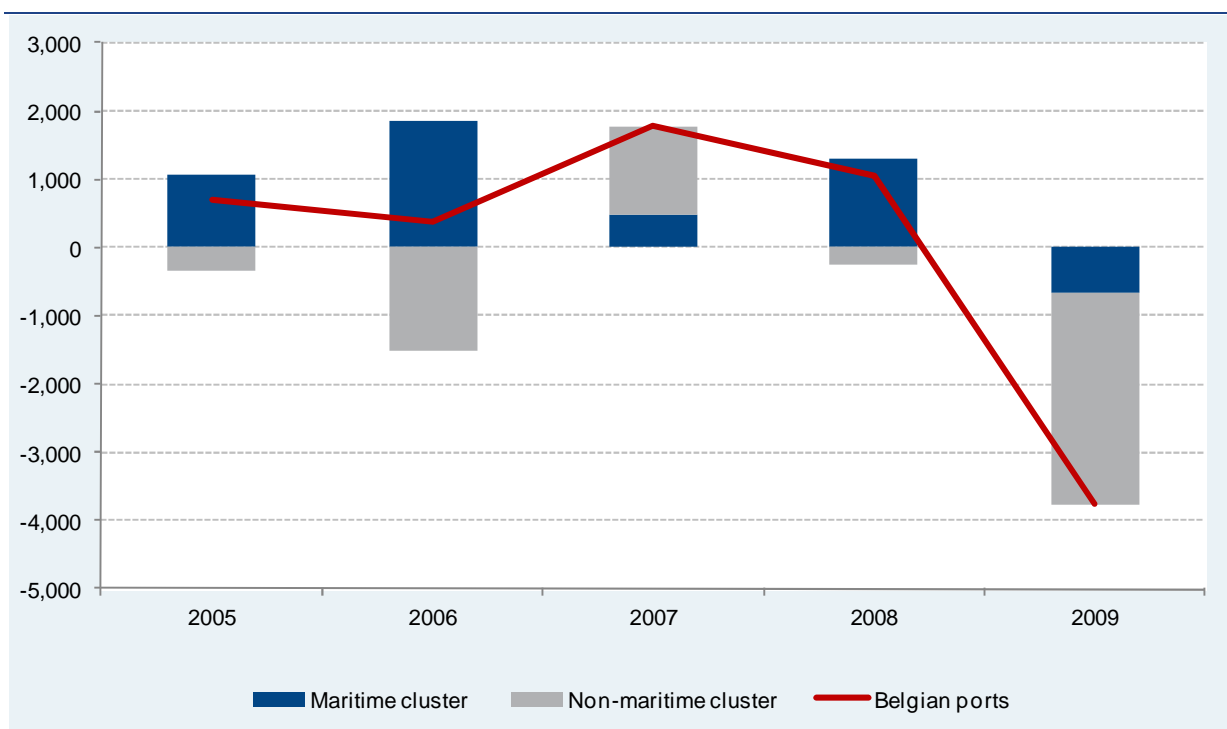
In 2009, the workers employed in the Belgian ports represented 3.1 % of Belgian domestic employment²⁹. That is the same as the 2008 figure. Altogether (including indirect employment), the Flemish ports accounted for 10.4 % of employment in Flanders, and the Belgian ports represented 6.8 % of employment in Belgium. These last two figures are down against 2008.

In companies outside the ports, employment declined again in the fishing segment, but also in shipping companies. It expanded in shipbuilding and repair, and shipping agents and forwarders. Finally, it remained stable in cargo handling.

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

²⁹ Source: National Accounts Institute (2010), *National accounts. Detailed accounts and tables 2000-2009*.

CHART 3 CHANGE IN DIRECT EMPLOYMENT
(FTE)



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

1.5 Investment in the Belgian ports

Direct investment in the ports was down by 15 %. Only the Liège port complex recorded higher investment; in the other ports, investment declined. The port of Ghent saw the smallest reduction. In the maritime cluster, investment remained relatively stable. However, it declined in the non-maritime cluster where all sectors of activity were affected. In industry, the growth in energy and construction did not entirely offset the contraction in the other segments. In the port of Antwerp, both the maritime and the non-maritime cluster recorded a fall. Shipping companies, cargo handling and chemicals saw the biggest reductions in value terms. Conversely, there was a strong increase in investment in energy and other services. In the port of Zeebrugge, investment increased in the maritime cluster, but in the non-maritime cluster it was slashed by more than a third in value. In industry, it was down by over 40 %, in land transport the reduction came to almost two-thirds and in other logistic services investment was down by a third. Trade alone recorded an increase, doubling its investment. In the port of Ostend, investment fell in the maritime cluster and in most of the sectors in the non-maritime cluster. However, other logistic services did record an increase thanks to the public sector. In the port of Brussels, investment was down by about a quarter in the maritime cluster and practically 30 % in the non-maritime cluster. It was strongest in the trade sector. Finally, investment in the Liège port complex was up by 28.4 % despite a steep decline in the maritime cluster. In the non-maritime cluster, industry was hard hit by the slowdown in fuel production and metalworking, but thanks to a dramatic expansion in other services the total for the cluster showed a strong increase.

Investment in companies outside the ports increased in 2009. This growth was due mainly to the waterway transport auxiliary services with, in particular, a big rise in investment by the Waterwegen en Zeekanaal company, including renovation of the Evergem lock. The company also inaugurated a bridge over the Scheldt between Temse and Bornem, and carried out work on the Lys, including work to enlarge the draught.

TABLE 6 INVESTMENT IN THE BELGIAN PORTS

(in € million - current prices)

	2004	2005	2006	2007	2008	2009	Relative share in 2009 (in p.c.)	Change from 2008 to 2009 (in p.c.)	Annual average change from 2004 to 2009 (in p.c.)
Antwerp	2,645.6	3,925.9	2,603.5	3,341.3	3,638.2	2,970.1	66.0	- 18.4	+ 2.3
Ghent	336.4	350.6	392.6	687.8	701.8	595.7	13.2	- 15.1	+ 12.1
Ostend	84.7	98.6	76.9	155.6	184.1	116.3	2.6	- 36.8	+ 6.5
Zeebrugge	199.6	409.4	305.5	305.7	256.3	201.3	4.5	- 21.4	+ 0.2
Liège	142.5	140.6	158.7	341.9	436.6	560.8	12.5	+ 28.4	+ 31.5
Brussels	130.8	77.7	94.3	60.8	79.0	56.4	1.3	- 28.6	- 15.5
<i>Outside the ports (p.m.)³⁰ ..</i>	<i>77.8</i>	<i>129.2</i>	<i>156.6</i>	<i>243.6</i>	<i>216.1</i>	<i>278.5</i>	<i>-</i>	<i>+ 28.8</i>	<i>+ 29.0</i>
DIRECT INVESTMENT	3,539.6	5,002.8	3,631.5	4,893.2	5,296.0	4,500.5	-	- 15.0	+ 4.9

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

1.6 Breakdown of the variables by company size³¹

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 2009, large firms represented 38 % of the total number of firms, 95 % of value added and 94 % of investment. In terms of jobs, they employ 92 % of workers. The representativeness of large firms for these three figures has therefore hardly changed at all over a year.

TABLE 7 BREAKDOWN OF FINDINGS IN THE BELGIAN PORTS IN 2009

Ports	Number of firms ³²		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	784	979	8,084.3	297.6	54,793	3,447	2,547.9	131.5
Ghent	261	314	2,957.6	107.0	25,068	1,290	540.3	40.1
Ostend	51	170	354.9	48.6	3,381	740	66.3	8.9
Zeebrugge	132	258	670.0	93.7	7,139	1,406	140.0	22.7
Liège	99	73	1,312.0	27.0	10,278	392	557.1	3.7
Brussels	93	198	552.6	56.8	3,659	818	43.1	13.3
Outside the ports	40	372	42.2	62.1	2,176	611	250.2	28.3
TOTAL	1,460	2,364	13,973.6	692.7	106,495	8,704	4,144.9	248.5

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

1.7 Social balance sheet in the Belgian ports³³

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, standard of education, working time, labour costs, job promotion measures and training efforts. The results presented below

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

³¹ Enterprises are deemed large if they use the full model to file their annual accounts.

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

³³ The national data mentioned were taken from P. Heuse and H. Zimmer (2010). The comparisons are merely an indication, since only firms filling their social balance sheet for a period of 12 months ending on 31 December were taken into account in that study. This is a smaller population.

concerning direct employment in the six Belgian ports are not exhaustive. The figures are based on a constant sample³⁴ relating to the period 2007 - 2009. The detailed figures for 2009 are shown in Annex 1.

1.7.1 Working time and labour costs

The average number of workers entered in the staff register is declining, as is the number of hours actually worked. The average number of hours worked per FTE therefore fell again in 2009, but much more dramatically than in 2008. This corresponds to the similar but slower trend evident at national level. The average number of hours worked per FTE declined in all the ports. The figures exceed the average at three ports: Ostend, Zeebrugge and Brussels. Examination of the statistics for all the ports shows that the shipping companies and the port construction and dredging sector record significantly higher average figures. The same applies to Antwerp. At Ghent, the average hours worked per FTE in the construction sector and the food industry are particularly high. At Ostend, port construction and dredging again tops the list, accompanied by trade. At Zeebrugge, the figure has slumped in the case of metalworking and other industries. At the Liège port complex, it is cargo handling that has the highest average. At the port of Brussels, the level of the index is in inverse proportion to the number of FTEs employed in the activity.

After increasing in 2008, staff costs were down in 2009. The analysis of annual staff expenses per full-time equivalent reveals a 2.6 % decline in 2009³⁵. It was at Ostend that these costs were lowest. The fishing and food industry sectors recorded particularly low figures, driving down the figures for the port. At Antwerp, the second port in terms of average annual staff expenses per FTE, in the case of the non-maritime cluster these costs were highest in the energy sector, chemicals and fuel production, and in the maritime cluster in the sectors with the highest average number of hours worked, i.e. shipping companies and port construction and dredging. In the Liège port complex, the food industry had particularly high average annual staff expenses³⁶. In the port of Brussels, the chemicals segment dominates the statistics, so that this port recorded the highest figure in the series.

Average staff costs per hour worked increased again overall between 2008 and 2009. That trend is also evident for the economy as a whole, but the average is lower. For the ports, this ratio is particularly low in the fishing sector and in road transport. Conversely, the ratio is highest in fuel production.

TABLE 8 HOURS WORKED AND ASSOCIATED COSTS OF INTERNAL HUMAN RESOURCES

(reduced population: constant population)
(percentage change compared with the previous year, unless otherwise stated)

	2007	2008	2009
Change in the average number of employees on the staff register (p.c.)		+ 0.7	- 3.6
Change in the number of hours actually worked (p.c.)		+ 0.4	- 8.5
Change in staff costs (p.c.)		+ 3.5	- 5.8
Average number of hours worked per annum per full-time equivalent (<i>hours</i>)	1,537	1,533	1,455
Average annual staff costs per full-time equivalent (<i>euros</i>)	67,544	69,486	67,896
Average staff costs per hour worked (<i>euros</i>)	44	45	47

Source: NBB (full presentation accounts only).

1.7.2 Composition of the workforce

The representativeness of white-collar workers in the staff of firms at the Belgian port sites remained stable in 2009. It is still the shipping agents and forwarders, port trade and fuel production sectors which have the highest proportion of white-collar staff. The proportion of blue-collar staff is highest in shipbuilding and repair, and in car manufacturing. There was no significant change in the proportion of blue-collar and white-collar staff in the various ports in 2009. In the Flemish ports and the Liège port

³⁴ The constant sample was determined on the basis of the firms which filed full-format accounts throughout the period 2007 - 2009, and completed the items in the social balance sheet required for this study. The constant sample comprises 930 firms and 102,758 FTE's, or 24.9 % of the firms considered for this study in 2009 and 85.6 % of the direct employment calculated in this study.

³⁵ Note that these are amounts at current prices.

³⁶ Note that staff costs may also include the costs relating to restructuring or reorganisation.

complex, blue-collar staff make up the majority of the workforce: 51.4 % in Antwerp, 64.2 % in Ghent, 64.1 % in Ostend, 54.7 % in Zeebrugge and 52.6 % in the Liège port complex. Conversely, in the port of Brussels, white-collar workers make up the majority of the manpower (62.2 %).

The percentage of women working at the port sites has been stable for the past three years, and is well below the national average. The percentage of part-time workers is still low, but did increase in 2009. The same trend is evident at national level. The proportion of full-time workers is between 91.8 % and 93 % in the ports of Antwerp, Ghent, Ostend and Brussels; it is higher in Liège (96 %) and lower in Zeebrugge (89 %). Port construction and dredging, port authorities and cargo handling are the sectors of activity with the highest proportion of full-time workers.

Some adjustments were apparent in the information reported for the level of education. That is probably because this item was only introduced recently in the social balance sheets. The results for the past two years therefore need to be treated with some caution. The proportion of workers holding higher education qualifications, whether or not graduated of a university, among the staff of firms at the Belgian port sites increased for both women and men in 2009, at the expense of persons holding certificates of primary and secondary education.

TABLE 9 INTERNAL WORKFORCE AT THE END OF THE FINANCIAL YEAR
(reduced population: constant population)
(share as percentage of the total)

	2007	2008	2009
By professional category			
White-collar	41	42	42
Blue-collar	56	55	54
Other staff	3	3	3
By sex			
Males	84	84	84
Females	16	16	16
By working time			
Full-time	91.9	91.6	90.5
Part-time	8.1	8.4	9.5
By educational level			
Males			
Primary education (p.c.)		20.0	17.9
Secondary education (p.c.)		58.7	58.4
Higher non-university education (p.c.)		15.2	16.1
University education (p.c.)		6.2	7.6
Females			
Primary education (p.c.)		9.6	7.6
Secondary education (p.c.)		50.9	50.0
Higher non-university education (p.c.)		28.6	30.1
University education (p.c.)		10.9	12.3

Source: NBB (full presentation accounts only).

1.7.3 External staff

In parallel with the development at national level, the proportion of external staff declined in 2009. Of all the segments in the study, cargo handling made logically the most use of external staff in 2009, followed by shipping agents and forwarders and the food industry. As in 2008, it was the port of Zeebrugge that used the most external staff, and the port of Brussels that used the fewest.

Port trade, fuel production and the metalworking industry are the sectors with the highest average hourly cost of external staff. Conversely, the cost is lowest in fishing and the energy industry, but the latter sector of activity makes little use of hired staff. The ports of Ostend and Brussels have the lowest average hourly cost for external staff, the highest figure being recorded in the port of Zeebrugge.

TABLE 10 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)

	2007	2008	2009
Share of external staff in total employment (on the basis of the number of hours actually worked) (share as percentage of the total)	14.5	14.2	12.6
Change in the number of hours actually worked		- 2.4	- 17.9
Change in costs		+ 2.5	- 26.3

Source: NBB (full presentation accounts only).

1.7.4 Staff turnover

Net staff recruitment declined in 2009. The same was true at national level. During 2009, net recruitment was negative in the great majority of sectors of activity. Fishing, port authorities, fuel production, the food industry and other land transport were the only activities where the workforce expanded.

All the ports recorded negative net recruitment. In the port of Antwerp, cargo handling, shipping agents and forwarders, car manufacturing and chemicals industry were the segments where the workforce contracted the most. In the port of Ghent, the number of staff leaving significantly outweighed the number taken on in car manufacturing and metalworking, whereas the opposite applied in cargo handling. The port of Ostend recorded a particularly high net outflow of workers in chemicals, road transport and shipping companies. In the port of Zeebrugge net job losses were particularly high in electronics and shipping agents and forwarders. In the Liège port complex, metalworking dominates all the statistics, with net job losses exceeding 1,500 units. In Brussels, the chemical industry formed the sector with the highest net job losses.

Among the reasons cited for termination of the employment contract, there was a big increase in the proportion of voluntary departures and retirement, including early retirement. At national level the situation remained unchanged for early retirement, with an increase in normal retirement, redundancies and termination of temporary contracts.

TABLE 11 STAFF TURNOVER
(reduced population: constant population)
(share as percentage of the total, unless otherwise stated)

	2007	2008	2009
Net number of staff hired during the year (FTE)	+ 2,159	+ 241	- 5,765
Staff leaving, by reason for termination of contract			
Retirement	4.0	3.8	4.6
Early retirement	6.4	10.1	12.5
Dismissal	14.8	13.6	21.9
Other reason	74.7	72.5	61.4

Source: NBB (full presentation accounts only).

1.7.5 Training³⁷

The percentage of firms reporting training in the social balance sheet continued to grow. As in previous years, the rate of participation in training at the ports is still higher than the national training ratio³⁸. The cost of an hour's training is also above the national average.

The Liège port complex has the highest participation rate, and the port of Zeebrugge the lowest. In the ports as a whole, the number of hours of training per person is declining. It is particularly high in land transport, energy, port construction and dredging. Fishing has the lowest figure. There was a decline in the percentage of the number of hours worked devoted to training. That is contrary to the national trend. However, the average for the ports is still higher than the national average.

³⁷ 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 the social balance sheet.

³⁸ See "The 2009 social balance sheet", Heuse P. and H. Zimmer, NBB, Economic review, December 2010, Brussels.

As in 2008, an hour of training cost more in fuel production, the energy industry and shipping companies. Road transport, shipbuilding and repair, car manufacturing and port trade were the segments where the cost was lowest. At the ports of Antwerp and Liège, the average cost of an hour's training is considerably higher than the average in other ports. In the port of Antwerp, the cost of an hour's training is highest in energy and fuel production. In the port of Ghent, other services and the food industry are the sectors with the highest costs for an hour's training. For the port of Ostend, hourly training costs are highest in metalworking and in shipbuilding and repair. In the port of Zeebrugge, road transport and energy rank first and second in terms of the cost of an hour's training. In the Liège port complex, energy and food again head the ranking. In the port of Brussels, training costs per hour are highest in car manufacturing and chemicals.

TABLE 12 EFFORTS DEVOTED TO FORMAL TRAINING
(reduced population: constant population)
(share as percentage of the total, unless otherwise stated)

	2007	2008	2009
P.c. of firms reporting training on the social balance sheet	46.2	54.7	57.0
Participation rate	55.6	52.8	54.4
<i>Males</i>	56.8	54.5	55.3
<i>Females</i>	49.5	44.5	49.9
Number of hours' training per person (<i>hours</i>)	39.1	47.5	34.9
<i>Males (hours)</i>	40.5	48.2	35.8
<i>Females (hours)</i>	31.1	43.3	30.1
Training costs per hour (euros)	54.3	56.1	58.9
<i>Males (euros)</i>	54.1	55.4	59.2
<i>Females (euros)</i>	55.9	60.9	56.9
P.c. of the number of hours worked devoted to training	1.4	1.7	1.3
Training costs as a percentage of total staff costs	1.8	2.1	1.6

Source: NBB (full presentation accounts only).

1.8 Financial ratios in the Belgian ports

The ratios presented below show the net return on equity after tax, liquidity in the broad sense, and solvency. The first ratio concerns the firms' ability to generate profits, and to give shareholders an idea of the firm's return after tax. The second ratio shows the firm's ability to mobilise in due time the cash resources that it needs in order to meet its short-term liabilities. Finally, the third ratio gives an idea of the firm's ability to honour all its financial commitments in the short and long term. This section gives information on the movement in the ratios for the six Belgian ports together³⁹.

The study of the financial ratios is based on a constant sample⁴⁰ composed for the years 2004 to 2006. 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 corporations, the same calculation method – namely globalisation – was used.

The net return on equity of firms in the Belgian ports declined again in 2009. Nevertheless, the fall was not as steep as in 2008. The ports' net return on equity still far exceeds the national average. The picture varies from port to port. The net profitability ratio declined slightly in the port of Antwerp, to approach its 2007 value. In the port's maritime cluster, the ratio collapsed. Apart from fishing, all

³⁹ 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.

⁴⁰ The constant sample composed for the study of the ratios includes all firms which filed their annual accounts in 2007, 2008 and 2009 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. This constant sample covers 2,411 firms, € 13,400.2 million of value added and 100,692 FTEs, or 64.4 % of the firms considered for the Belgian ports in 2009, 89.5 % of the direct value added and 83.8 % of the direct employment examined here.

activities were affected by this fall. In the non-maritime cluster, industry was the only sector to record an increase. In land transport the ratio dipped slightly, but in other services it was halved, and in trade it plummeted following the huge losses generated by a number of firms in the sector. In the port of Ghent, after the fall seen in 2008, the ratio picked up slightly. In trade it was well up, whereas industry and the maritime cluster suffered a decline. Overall, the non-maritime cluster is relatively stable. The ratio calculated for firms in the port of Ostend is continuing to fall slowly. Trade, road transport and other logistic services saw a deterioration in their ratio. In the port of Zeebrugge, the ratio slumped. A number of sectors participated in that decline: the maritime cluster, industry and land transport. In the Liège port complex, the ratio was also down, mainly following the steep fall in the maritime cluster. The other services sector saw a sharp decline, while industry, underpinned by the food industry, energy and construction, recorded an increase. In contrast, in the port of Brussels the ratio was dragged down by the non-maritime cluster: all the sectors of activity in that cluster recorded a steep decline.

After remaining steady for two years, the weighted average ratio of liquidity in the broad sense increased in 2009. The same applies at national level, where the ratio increased in 2009. While the liquidity ratio was down slightly in the maritime cluster at the port of Antwerp, it began rising again in the non-maritime cluster, essentially in the industry sector. In trade, it edged downwards and in land transport and other services it approached the higher value recorded in 2007. In the port of Ghent, the ratio deteriorated slightly in both the maritime and the non-maritime clusters. The main losers were other services. The liquidity ratio of firms in the port of Ostend remained stable, with only industry and land transport being down a bit. In the port of Zeebrugge, the liquidity ratio was up in the non-maritime cluster, particularly thanks to industry, and declined in the maritime cluster. At the Liège port complex, the ratio increased, partly on account of the maritime cluster, trade and industry. The liquidity ratio of the port of Brussels deteriorated, driven down mainly by the other services sector.

TABLE 13 FINANCIAL RATIOS IN THE BELGIAN PORTS FROM 2007 TO 2009

Ports	Return on equity after taxes (in p.c.)			Liquidity in the broad sense			Solvency (in p.c.)		
	2007	2008	2009	2007	2008	2009	2007	2008	2009
Antwerp	17.3	19.7	17.4	0.82	0.69	0.85	32.6	31.9	35.7
Ghent	27.2	3.8	4.0	1.64	2.87	2.43	53.0	66.4	64.6
Ostend	11.4	9.4	8.9	1.60	1.56	1.57	54.0	50.3	51.8
Zeebrugge	8.7	9.5	3.5	1.14	1.06	1.24	45.5	47.6	51.5
Liège	34.2	9.3	7.7	0.91	0.89	0.98	30.3	35.4	35.2
Brussels	11.3	9.2	5.6	1.67	1.51	1.44	53.4	52.5	51.6
Weighted average	19.8	13.2	11.6	1.01	1.01	1.11	37.2	39.6	42.0
Non-financial corporations⁴¹	9.9	5.9	6.4	1.32	1.27	1.38	45.3	46.7	48.9

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

The solvency ratio increased for firms in the Belgian ports. That trend was also evident at national level. Four out of six ports have a liquidity ratio which is above the average for non-financial corporations. Antwerp and Liège are below the average. The ratios for all sectors of activity at Antwerp are lower than those for the ports as a whole, whereas in the Liège port complex the maritime cluster and trade record a higher ratio. Examination of the movement in the solvency ratio for each port shows that it is increasing at the ports of Antwerp, Ostend and Zeebrugge but falling in the other three ports. At the port of Antwerp, the ratio is up for both clusters. In the non-maritime cluster, only the ratio for the trade sector is down. In the port of Ghent, the ratios are falling for both clusters. In the non-maritime cluster, the ratios for trade and industry are down whereas they are rising in the other sectors of activity. In the port of Ostend, despite the erosion of the ratio in the case of shipping companies, the ratio is up at the level of the maritime cluster. In the non-maritime cluster, all sectors record an increase in the ratio. The same applies in the non-maritime cluster of the port of Zeebrugge, while in the maritime cluster the ratio is falling for several activities. In the Liège port complex, the ratio of the maritime cluster is up, in contrast to that of the non-maritime cluster which saw this ratio fall sharply in other services. However, in trade the ratio is well up for the second year running. In the port of Brussels, with the exception of other services, the ratios are down in all sectors of activity.

⁴¹ See "Results and financial structure of firms in 2009", Vivet D. NBB, Economic review, Decembre 2010, Brussels.

2 PORT OF ANTWERP

2.1 Port developments⁴²

The port of Antwerp was not spared by the world crisis and its impact on maritime transport. Volumes unloaded fell by more than 22 % in 2009, and volumes loaded by just under 10 %. All in all, volumes handled amounted to 157.8 million tonnes, or 16.7 % less than in 2008. The volume of transshipped liquid bulk goods was stable at 39.5 million tonnes. The volume of dry bulk, by contrast, was down significantly, -36.4 %, due to unloading, as the volumes loaded were up slightly. Overall, the port handled 17.3 million tonnes of dry bulk in 2009. General cargo traffic, with 100.9 million tonnes transshipped, fell by 17 %. Within this cargo category, container traffic dropped by close to 14 %. However, the decline in iron and steel traffic was even more severe, at -44.7 %. As a proportion of overall traffic, container traffic represented 55.3 %, and other general cargo, 8.6 %.

If we look at bulk traffic by category of goods, we see that the quantity of crude oil loaded and unloaded fell by 12 %, whereas petroleum derivative products rose slightly, up 3.6 %. With respect to chemical products, incoming traffic fell but outgoing traffic rose slightly. The volume of coal and ore unloaded plunged by respectively 40 % and 73 %. Fertiliser traffic dropped by 21 %.

Container traffic measured in TEU was also affected, down just under 16 %. Trade with the Middle East and Asia was the hardest hit⁴³. In 2009, the largest share of trade was with the Middle East, followed by Europe and North and Central America. These three destinations make up practically 70 % of transshipments.

Lastly, the volumes handled by ro-ro traffic excluding containers fell by more than one-quarter; the number of vehicles dropped by one-fifth, with 238,041 cars imported and 532,278 cars exported in 2009.

In April 2009, the arrival of the "MSC Beatrice", one of the world's largest container carriers, demonstrate that the port of Antwerp was able to welcome Ultra Large Container Ships (ULCS). Despite the recession, the port community continued to look at the future. The Antwerp Port Authority took the initiative for a "Total plan for a more competitive port" which has brought together the entire port community.

Further investments were made in improvements and innovation. The cases cited below are just a few examples. Antwerp Stevedoring International put into operation an all-weather terminal on the right bank of the Scheldt. The fully-automated fruit terminal from Belgian New Fruit Wharf became operational. Evonik Degussa expanded its methionine and feedstock capacity. It also set up a new production plant for isobutene, and began the construction of a second cogeneration unit. The joint-venture of Dow Chemical and BASF for the production of HPPO on the site of BASF became operational.

In 2009, direct value added declined by 14.8 %, representing a volume reduction of 15.9 %. Total value added (direct and indirect) was down by 8.5 %. Direct value added represented 4.4 % of the GDP of the Flemish region, 0.7 % less than in 2008; total value added represented 9.1 %, a reduction of 0.6 %. The respective figures in relation to Belgian GDP were 2.5 and 5.2 %.

Direct employment in the port of Antwerp fell by 2.3 % in 2009. In the year under review, direct and total employment represented respectively 2.8 and 6.6 % of employment in the Flemish Region. Employment represented 1.6 (direct) and 3.8 % (total) of Belgian employment. This last figure was down by 0.2 % compared to 2008.

⁴² Sources: *Jaaroverzicht Vlaamse havens 2009* of the Vlaamse Havencommissie and *Annual Report 2009* of the Antwerp Port Authority.

⁴³ Traffic measured in TEU. Empty containers are not taken in consideration.

CHART 4 CHANGE IN DIRECT VALUE ADDED
(in € million, current prices)

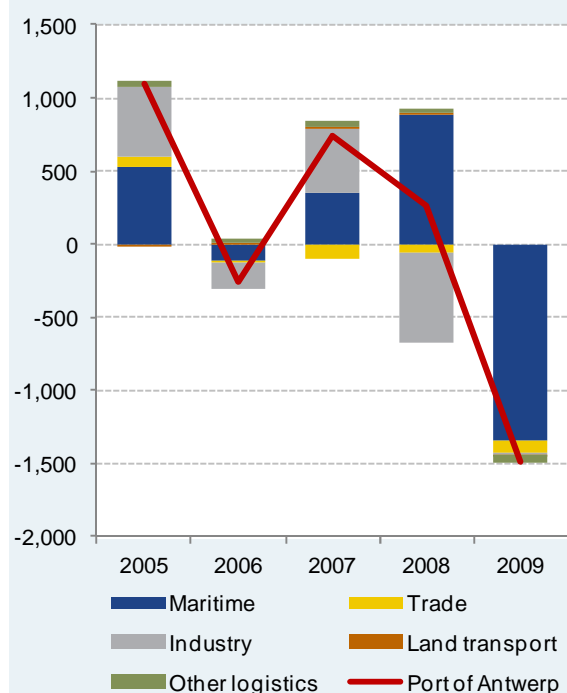
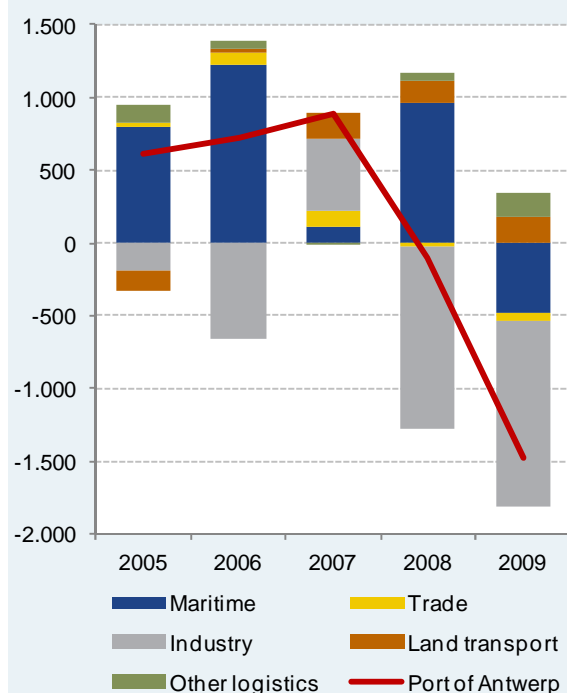


CHART 5 CHANGE IN DIRECT EMPLOYMENT
(FTE)



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

2.2 Value added

Unsurprisingly, maritime activities were affected by the international economic crisis and the contraction of world trade. More specifically, most shipping companies – suffering from the surplus supply of sea freight services and the slackening of demand – recorded a sharp fall in profits. Moreover, the bad conditions on the freight transport market had repercussions on the secondhand ships market. The shipping companies segment thus recorded its worst results for five years. This decline affected all types of transport represented at Antwerp. The reduction in sea traffic obviously had implications for the other sectors such as cargo handling and shipping agents.

In the non-maritime cluster, the decline in direct value added was less marked. The trade sector was down for the fifth year running. In industry, value added stabilised in 2009 following a sharp fall in 2008. However, that masks wide variations between sectors of activity. The fuel production industry, car manufacturing, metalworking and food saw a significant fall while the energy industry, chemicals and electronics were well up. Thus, the fuel production sector and car manufacturing industry recorded their worst result for six years⁴⁴. Land transport was unable to maintain the growth of the past four years and was down slightly, while the value added of other services fell by 10.2 %.

Highlights in the maritime cluster in 2009⁴⁵:

- Owing to the low margins and smaller volumes, most shipping agents and forwarders saw a significant decline in turnover.
- Shipping companies such as Euronav, Bocimar International, Bocimar Belgium, Safmarine Container Lines, Cobelfret Bulk Carriers, Cobelfret Ferries and Conti-Lines felt the downward pressure on freight rates resulting from the decline in demand for sea transport.
- Most cargo handlers saw a decline in the volumes handled. The container transshipment firms PSA Antwerp, Antwerp Gateway and DP World Antwerp, in particular, suffered a significant fall in their operating income in 2009. Despite the crisis, MSC Home Terminal and the tank storage firms Oiltanking Stolthaven Antwerp and Sea-Tank Terminal Antwerp nevertheless succeeded in creating more value added.
- Since fewer ships entered the port of Antwerp, and since shipping companies were reluctant to have their ships repaired and maintained, activity declined at Antwerp Ship Repair.

⁴⁴ Note that the General Motors group decided to close the Opel plant at Antwerp the following year.

⁴⁵ Commentary based on annual accounts filed and published annual reports.

- The Benelux activities of Dredging International remained steady. This marine and waterway contractor made a significant contribution to the construction of the wind farm at Thorntonbank off the coast of Belgium. There was a decline in value added at Dredging International, and consequently in the port construction and dredging sector, because a significant amount of other operating income was recorded in 2008.
- The port authority's value added was down as a result of a fall in shipping and inland navigation fees and the decline in the number of towing jobs because fewer ships called the port of Antwerp in 2009.

Highlights in the non-maritime cluster in 2009:

- The operating result at Kuwait Petroleum⁴⁶ was down as a result of stock reductions due to lower oil prices.
- Turnover at Pioneer Europe⁴⁷ was depressed by the fierce international competition and declining demand for plasma television screens.
- At Electrabel, turnover and operating costs declined as a result of the transfer of the Walloon natural gas and electricity distribution to Ores at the beginning of 2009. The increase in the other operating income boosted the operating profit. The results of this electricity producer were still heavily influenced in 2008 by the implementation of a new collective labour agreement.
- Turnover at ExxonMobil Petroleum & Chemicals was down sharply as a result of lower prices and volumes.
- Declining demand and selling prices for chemical products at BASF Antwerp were more than offset by lower commodity prices.
- Income from the sale of cars and assembly activities diminished at General Motors Belgium and GM Automotive Services.
- At the tractor assembly firm of New Holland Tractor Belgium the crisis also affected value added.
- Lower turnover at Stork Mec and Constructiebedrijf Ivens, among others, plus the bankruptcy of Climt Belgium, caused a decline in value added in the metalworking industry.
- The economic crisis and the process of consolidation in the brewery sector led to lower operating results at Boortmalt⁴⁸.
- Cargill⁴⁹ recorded an increase in turnover, but its operating results declined as a result of the fall in the item "services and miscellaneous goods" of the annual accounts.
- Many road transport firms felt the negative impact of the decline in goods transshipment in the port of Antwerp.
- As a result of BAM's assumption of the Flemish government's claim on Tunnel Liefkenshoek in 2004, BAM became the owner of Tunnel Liefkenshoek. On the basis of the concession agreement, BAM is entitled to 85 % of the gross profit of Tunnel Liefkenshoek from the middle of 2009. That reimbursement reduced the value added of Tunnel Liefkenshoek.
- The restructuring of the Chiquita group in Antwerp also had a negative impact on value added in the other services sector.
- The increased presence of the BNRC group boosted value added in the other land transport sector.

⁴⁶ The annual accounts of Kuwait Petroleum cover part of the year 2008.

⁴⁷ The annual accounts of Pioner Europe cover part of the year 2008.

⁴⁸ The annual accounts of Boortmalt cover part of the year 2008.

⁴⁹ The annual accounts of Cargill cover part of the year 2008.

TABLE 14 VALUE ADDED AT THE PORT OF ANTWERP FROM 2004 TO 2009

(in € million - current prices)

Sectors	2004	2005	2006	2007	2008	2009	Share in 2009 (in p.c.)	Change from 2008 to 2009 (in p.c.)	Annual average change from 2004 to 2009 (in p.c.)
1. DIRECT EFFECTS	8,257.3	9,352.4	9,091.4	9,825.7	10,086.6	8,590.9	100.0	- 14.8	+ 0.8
MARITIME CLUSTER	2,437.7	2,968.6	2,857.8	3,213.1	4,099.0	2,756.4	32.1	- 32.8	+ 2.5
Shipping agents and forwarders	509.9	515.3	523.9	539.5	616.4	558.5	6.5	- 9.4	+ 1.8
Cargo handling	1,046.5	1,122.0	1,183.2	1,307.9	1,352.4	1,164.8	13.6	- 13.9	+ 2.2
Shipping companies	524.0	973.7	762.6	930.7	1,592.6	588.2	6.8	- 63.1	+ 2.3
Shipbuilding and repair	31.8	39.3	43.4	41.8	58.6	55.0	0.6	- 6.0	+ 11.6
Port construction and dredging	126.4	100.2	113.2	151.7	221.5	147.2	1.7	- 33.5	+ 3.1
Fishing	0.6	0.6	1.3	1.0	1.2	1.9	0.0	+ 56.4	+ 27.7
Port trade	12.9	13.8	14.0	14.1	20.4	21.1	0.2	+ 3.2	+ 10.3
Port authority	185.7	203.8	216.2	226.4	236.0	219.6	2.6	- 7.0	+ 3.4
Public sector	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Allocation (p.m.).....	56.8	80.7	46.6	50.8	90.0	72.3	-	- 19.7	+ 4.9
NON-MARITIME CLUSTER ...	5,819.6	6,383.9	6,233.7	6,612.5	5,987.6	5,834.5	67.9	- 2.6	+ 0.1
TRADE	849.5	916.2	894.0	787.8	734.0	649.5	7.6	- 11.5	- 5.2
INDUSTRY	4,256.5	4,735.3	4,566.1	4,992.2	4,376.1	4,357.0	50.7	- 0.4	+ 0.5
Energy	178.1	191.9	223.0	261.2	349.4	447.8	5.2	+ 28.2	+ 20.3
Fuel production	1,051.6	1,126.0	1,026.6	1,061.1	1,054.9	744.5	8.7	- 29.4	- 6.7
Chemicals	2,270.2	2,663.4	2,514.2	2,600.0	2,246.8	2,536.2	29.5	+ 12.9	+ 2.2
Car manufacturing	487.3	483.0	519.4	734.8	375.5	306.3	3.6	- 18.4	- 8.9
Electronics	6.6	7.1	6.0	8.5	8.5	15.7	0.2	+ 85.1	+ 19.0
Metalworking industry	132.1	128.4	134.2	160.3	169.4	146.6	1.7	- 13.5	+ 2.1
Construction	83.0	76.9	83.4	96.3	94.7	91.7	1.1	- 3.2	+ 2.0
Food industry	26.4	34.6	40.4	48.6	54.8	49.1	0.6	- 10.4	+ 13.2
Other industries	21.2	24.0	18.9	21.2	22.1	19.2	0.2	- 13.3	- 2.0
LAND TRANSPORT	222.1	206.7	217.8	233.1	248.7	246.3	2.9	- 0.9	+ 2.1
Road transport	103.6	102.3	107.5	118.2	128.8	115.9	1.3	- 10.0	+ 2.3
Other land transport	118.5	104.4	110.2	114.8	119.8	130.4	1.5	+ 8.8	+ 1.9
OTHER LOGISTIC SERVICES	491.6	525.7	555.8	599.5	628.8	581.8	6.8	- 7.5	+ 3.4
Other services	386.7	411.0	434.5	473.8	495.4	445.0	5.2	- 10.2	+ 2.8
Public sector	104.8	114.7	121.3	125.7	133.4	136.8	1.6	+ 2.5	+ 5.5
2. INDIRECT EFFECTS	7,344.9	7,970.3	8,424.3	8,849.3	9,261.6	9,119.5	-	- 1.5	+ 4.4
MARITIME CLUSTER	2,659.0	2,943.2	3,075.8	3,293.7	3,485.9	3,237.0	-	- 7.1	+ 4.0
NON-MARITIME CLUSTER ...	4,685.9	5,027.1	5,348.5	5,555.6	5,775.8	5,882.6	-	+ 1.8	+ 4.7
TOTAL VALUE ADDED	15,602.2	17,322.8	17,515.7	18,675.0	19,348.2	17,710.4	-	- 8.5	+ 2.6

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

TABLE 15 VALUE ADDED TOP 10 AT THE PORT OF ANTWERP IN 2009⁵⁰

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	ANTWERP PORT AUTHORITY	Port authority
6	TOTAL RAFFINADERIJ ANTWERPEN	Fuel production
7	BAYER ANTWERPEN	Chemicals
8	GENERAL MOTORS BELGIUM	Car manufacturing
9	EVONIK DEGUSSA ANTWERPEN	Chemicals
10	PSA ANTWERP	Cargo handling

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

2.3 Employment

In the port of Antwerp, employment suffered proportionately less than value added from the economic recession in 2009. Total direct employment at the port was down by 2.3 % year-on-year, bringing it close to the 2005 figure. The non-maritime cluster declined more than the maritime cluster. In the latter, shipping agents and cargo handlers were unable to prevent the reduction in port traffic from influencing employment. The expansion of employment in the port construction and dredging sector bears witness to the vigour of activity in this sector.

In the non-maritime cluster, direct employment is at its lowest for six years. That is due mainly to industry. While employment increased in the energy, electronics and food segments, it declined everywhere else except in the fuel production industry, where it remained stable. The biggest fall occurred in car manufacturing, but construction is also at its lowest for six years. The metalworking industry was down by over 8 % in two years. Land transport, supported by the BNRC group, recorded an increase, as did other logistic services. These two segments are at their highest level for six years. Conversely, employment in trade was down for the second year running.

Highlights in the maritime cluster in 2009:

- Most shipping agents and forwarders recorded a stable or reduced workforce.
- The decline in employment in cargo handling firms is attributable to the reduction in the number of dockers.
- Cobelfret Bulk Carriers and NYK Bulkship (Atlantic) account for the expansion of employment in shipping companies.
- In the port construction and dredging sector, new jobs were created by a number of firms in the DEME group and at the marine and waterway contractor Herbosch-Kiere.

⁵⁰ The top ten tables are based on information from annual accounts, surveys, annual reports and allocation formulas based on regional statistics. In this edition, no individual figures are published as accurate 2009 data could not be obtained for all companies.

TABLE 16 EMPLOYMENT AT THE PORT OF ANTWERP FROM 2004 TO 2009
(FTE)

Sectors	2004	2005	2006	2007	2008	2009	Share in 2009 (in p.c.)	Change from 2008 to 2009 (in p.c.)	Annual average change from 2004 to 2009 (in p.c.)
1. DIRECT EFFECTS	61,931	62,550	63,275	64,156	64,054	62,577	100.0	- 2.3	+ 0.2
MARITIME CLUSTER	24,388	25,181	26,407	26,521	27,479	27,000	43.1	- 1.7	+ 2.1
Shipping agents and forwarders	6,499	6,795	6,980	6,987	7,242	6,876	11.0	- 5.1	+ 1.1
Cargo handling	13,929	14,253	15,109	15,143	15,453	15,135	24.2	- 2.1	+ 1.7
Shipping companies	595	769	887	1,012	1,109	1,150	1.8	+ 3.7	+ 14.1
Shipbuilding and repair	604	651	656	593	779	809	1.3	+ 3.9	+ 6.0
Port construction and dredging	953	887	930	956	1,060	1,136	1.8	+ 7.2	+ 3.6
Fishing	11	15	21	17	18	25	0.0	+ 35.0	+ 17.0
Port trade	179	167	178	174	186	209	0.3	+ 12.6	+ 3.2
Port authority	1,619	1,646	1,647	1,640	1,631	1,659	2.7	+ 1.7	+ 0.5
Public sector	0	0	0	0	0	0	0.0	n.	n.
<i>Allocation (p.m.)</i>	<i>1,245</i>	<i>1,491</i>	<i>2,059</i>	<i>2,054</i>	<i>2,205</i>	<i>2,283</i>	-	+ 3.5	+ 12.9
NON-MARITIME CLUSTER ...	37,542	37,369	36,867	37,635	36,575	35,577	56.9	- 2.7	- 1.1
TRADE	2,206	2,237	2,312	2,425	2,399	2,335	3.7	- 2.7	+ 1.1
INDUSTRY	26,369	26,181	25,522	26,010	24,760	23,484	37.5	- 5.2	- 2.3
Energy	858	949	914	946	1,036	1,101	1.8	+ 6.3	+ 5.1
Fuel production	2,658	2,676	2,597	2,641	2,650	2,651	4.2	+ 0.1	- 0.0
Chemicals	10,998	11,099	10,876	10,901	10,869	10,616	17.0	- 2.3	- 0.7
Car manufacturing	7,091	6,826	6,608	6,730	5,424	4,542	7.3	- 16.3	- 8.5
Electronics	127	127	100	130	128	200	0.3	+ 56.9	+ 9.5
Metalworking industry	2,587	2,543	2,512	2,776	2,770	2,541	4.1	- 8.3	- 0.4
Construction	1,324	1,190	1,178	1,145	1,142	1,095	1.8	- 4.1	- 3.7
Food industry	452	483	469	453	459	478	0.8	+ 4.1	+ 1.2
Other industries	274	287	269	287	282	260	0.4	- 7.8	- 1.1
LAND TRANSPORT	3,605	3,459	3,488	3,675	3,837	4,022	6.4	+ 4.8	+ 2.2
Road transport	1,561	1,565	1,584	1,708	1,805	1,811	2.9	+ 0.3	+ 3.0
Other land transport	2,044	1,894	1,904	1,967	2,031	2,211	3.5	+ 8.9	+ 1.6
OTHER LOGISTIC SERVICES	5,362	5,492	5,545	5,526	5,579	5,736	9.2	+ 2.8	+ 1.4
Other services	3,382	3,499	3,536	3,494	3,573	3,683	5.9	+ 3.1	+ 1.7
Public sector	1,980	1,993	2,009	2,032	2,007	2,054	3.3	+ 2.3	+ 0.7
2. INDIRECT EFFECTS	81,113	84,524	86,819	90,164	92,968	86,749	-	- 6.7	+ 1.4
MARITIME CLUSTER	28,303	32,279	32,401	33,217	34,701	32,678	-	- 5.8	+ 2.9
NON-MARITIME CLUSTER ...	52,810	52,245	54,417	56,948	58,267	54,071	-	- 7.2	+ 0.5
TOTAL EMPLOYMENT	143,043	147,073	150,094	154,320	157,021	149,326	-	- 4.9	+ 0.9

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

Highlights in the non-maritime cluster in 2009:

- Chemtura Belgium terminated its chemical wholesaling activities.
- The Electrabel workforce at the Doel and Kalo nuclear power stations increased by 66 full-time employees.
- At a number of large chemical firms, such as Bayer Antwerp, 3M Belgium, Lanxess, Lanxess Rubber and Basf Antwerp, the workforce declined.
- Owing to the reduction in assembly activities at General Motors Belgium, the ensuing impact on GM Automotive Services, and lower production at New Holland Tractor Belgium, the workforce employed in car manufacturing declined.
- Fabricom Maintenance set up an operating establishment in the Antwerp port area.
- The bankruptcy of Climt Belgium and staff cuts in a number of major installation firms led to a decline in the numbers employed in the metalworking industry
- The BNRC group stepped up its presence in the port by 175 employees.
- Schenk Tanktransport Belgium took over the bankrupt firm of Duintransport, in De Haan.
- In the other services sector, the decline in employment at the Chiquita group was offset, in particular, by the arrival of PDM Industrial Management Services.

TABLE 17 EMPLOYMENT TOP 10 AT THE PORT OF ANTWERP IN 2009

Ranking	Company name	Sector
1	B.A.S.F. ANTWERPEN	Chemicals
2	GENERAL MOTORS BELGIUM	Car manufacturing
3	PUBLIC ADMINISTRATION	Public sector
4	BNRC group	Other land transport
5	PSA ANTWERP	Cargo handling
6	ANTWERP PORT AUTHORITY	Port authority
7	EXXONMOBIL PETROLEUM & CHEMICAL	Fuel production
8	ELECTRABEL	Energy
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.

2.4 Investment

Investment in the port of Antwerp declined in 2009 in both the maritime cluster (-19.4 %) and the non-maritime cluster (-16.3 %). The maritime cluster represented two-thirds of investment in the port. The port authority cut its investment by half, while shipping agents and forwarders, port trade and shipping companies cut theirs by more than a quarter. However, investment in this cluster has reverted to a level fairly similar to the 2007 figure.

In the non-maritime cluster, other logistic services was the only segment to expand. Trade, industry and land transport declined. The energy sector doubled its investments, and the fuel production industry – though down slightly – invested more in 2009 than during the years 2004 to 2007. However, investment in chemicals was down to its lowest level for six years. The same applies to trade, where Kuwait Petroleum Belgium accounted for just under half of the investment. In land transport, the investment reflects the slowdown in economic activity and consumption.

Highlights in the maritime cluster in 2009:

- Sea-Tank Terminal Antwerp brought the Total Euro Hub into service. This terminal has 30 tanks for storing miscellaneous oil products for the Total group.
- ITC Rubis Terminal Antwerp invested in a terminal for the storage and handling of bulk liquid chemicals.
- PSA Antwerp invested in six container cranes and straddle carriers for the terminal at the Deurganckdok.
- MSC Home Terminal invested in flooring for its premises and straddle carriers.
- The tank storage capacity of Oiltanking Stolthaven Antwerp was increased.
- Belgian New Fruit Wharf brought the automated fruit terminal at the Albertdok into service.
- Euronav's Suezmax fleet has been expanded by the delivery of the vessels "Felicity" (157,667 dwt) and "Fraternity" (157,714 dwt).

- Bocimar International added its new bulk carriers "Mineral Dalian" and "Mineral Ningbo" to the official list of Belgian sea-going vessels.
- The Express shipping company became the owner of the gas tanker "Express". The ship was used by Exceleate Energy LP under a time charter contract.
- The DEME group dominates the port construction and dredging sector. The trailing suction hopper dredger "Artevelde", the water injection dredger "Dhamra", the cutter dredger "Ganga" and the self-propelled split and hopper barges "Sloeber" and "Pagadder" were delivered.
- The Antwerp Port Authority invested in tugs and in its docks and quay walls.

Highlights in the non-maritime cluster in 2009:

- Kuwait Petroleum Belgium invested in a new tank farm with 24 new storage tanks on the site of its lubricant blending plant on the banks of river Scheldt in Antwerp. This tank farm is Kuwait Petroleum International's biggest plant in Europe.
- Electricity producer Electrabel investments included the new turbine for its Doel 4 power station and replacement of the steam generators in its Doel 1 power station.
- ExxonMobil Petroleum & Chemicals expanded its refinery with a High Pressure HydroTreater (HPHT), an installation which desulphurises diesel with hydrogen under high pressure. The installation will enable the Antwerp refinery to produce more low-sulphur diesel, much of it destined for export.
- Basf Antwerp invested in the elimination of bottlenecks and optimisation at the Performance Polymers division, the new sulphuric acid plant and the Deacon project (plant for recycling HCl into chlorine).
- Lanxess Rubber invested in a cogeneration power plant.
- The BNRC group invested in the second rail link beneath the Scheldt, maintenance of the tracks on the Left and Right Banks and the expansion of various rail fans in the port.
- The Flemish Region's main investments in the port of Antwerp concerned the Amoras sludge processing plant and the Deurganckdok.

TABLE 18 INVESTMENT AT THE PORT OF ANTWERP FROM 2004 TO 2009

(in € million - current prices)

Sectors	2004	2005	2006	2007	2008	2009	Share in 2009 (in p.c.)	Change from 2008 to 2009 (in p.c.)	Annual average change from 2004 to 2009 (in p.c.)
MARITIME CLUSTER	1,526.4	2,835.9	1,456.6	1,918.1	2,473.0	1,994.3	67.1	- 19.4	+ 5.5
Shipping agents and forwarders	38.7	41.3	56.2	63.9	110.1	70.3	2.4	- 36.1	+ 12.7
Cargo handling	352.2	670.2	368.9	589.5	701.0	636.1	21.4	- 9.3	+ 12.5
Shipping companies	1,022.2	2,021.4	889.2	1,018.8	1,360.1	1,035.5	34.9	- 23.9	+ 0.3
Shipbuilding and repair	5.7	3.0	4.0	4.6	7.7	6.5	0.2	- 15.1	+ 2.6
Port construction and dredging	13.4	48.4	94.6	177.4	199.6	198.9	6.7	- 0.3	+ 71.5
Fishing	0.1	0.0	0.1	0.2	0.3	0.3	0.0	+ 4.7	+ 18.5
Port trade	5.9	1.0	1.0	2.0	2.7	1.9	0.1	- 29.5	- 20.5
Port authority	88.2	50.5	42.7	61.9	91.6	44.7	1.5	- 51.2	- 12.7
Public sector	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
<i>Allocation (p.m.)</i>	<i>57.6</i>	<i>113.8</i>	<i>134.5</i>	<i>208.7</i>	<i>186.9</i>	<i>249.3</i>	-	+ 33.4	+ 34.0
NON-MARITIME CLUSTER	1,119.2	1,090.0	1,147.0	1,423.2	1,165.2	975.7	32.9	- 16.3	- 2.7
TRADE	55.1	42.5	49.5	52.6	57.9	37.6	1.3	- 35.0	- 7.4
INDUSTRY	896.2	861.7	927.9	1,214.0	899.0	713.4	24.0	- 20.7	- 4.5
Energy	61.0	99.5	74.1	42.6	60.0	131.9	4.4	+ 119.9	+ 16.7
Fuel production	170.8	174.4	144.1	166.3	200.2	185.4	6.2	- 7.4	+ 1.7
Chemicals	517.2	506.4	643.9	939.3	570.9	352.7	11.9	- 38.2	- 7.4
Car manufacturing	99.5	59.1	35.1	30.6	21.9	11.2	0.4	- 48.8	- 35.4
Electronics	0.1	0.0	1.2	0.4	0.3	2.0	0.1	+ 645.6	+ 68.3
Metalworking industry	9.3	3.9	6.9	5.7	7.1	9.0	0.3	+ 27.5	- 0.5
Construction	13.6	8.4	11.7	13.0	14.1	6.0	0.2	- 57.3	- 15.1
Food industry	20.0	7.8	8.3	12.6	20.8	11.1	0.4	- 46.5	- 11.1
Other industries	4.8	2.2	2.5	3.6	3.8	4.0	0.1	+ 5.3	- 3.3
LAND TRANSPORT	39.6	48.3	42.3	40.9	56.4	34.8	1.2	- 38.4	- 2.6
Road transport	18.1	14.7	16.0	20.3	35.5	12.4	0.4	- 65.0	- 7.2
Other land transport.....	21.5	33.6	26.3	20.6	20.9	22.3	0.8	+ 6.8	+ 0.7
OTHER LOGISTIC SERVICES	128.3	137.6	127.1	115.6	151.8	190.0	6.4	+ 25.1	+ 8.2
Other services	46.2	65.3	75.9	88.4	110.4	148.6	5.0	+ 34.7	+ 26.3
Public sector	82.1	72.2	51.3	27.2	41.5	41.4	1.4	- 0.3	- 12.8
DIRECT INVESTMENT	2,645.6	3,925.9	2,603.5	3,341.3	3,638.2	2,970.1	100.0	- 18.4	+ 2.3

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

TABLE 19 INVESTMENT TOP 10 AT THE PORT OF ANTWERP IN 2009

Ranking	Company name	Sector
1	EURONAV	Shipping companies
2	BOCIMAR INTERNATIONAL	Shipping companies
3	B.A.S.F. ANTWERPEN	Chemicals
4	SAFMARINE CONTAINER LINES	Shipping companies
5	DREDGING, ENVIRONMENTAL AND MARINE ENGINEERING	Port construction and dredging
6	ELECTRABEL	Energy
7	EXXONMOBIL PETROLEUM & CHEMICAL	Fuel production
8	KLEIMAR	Shipping companies
9	EXQUISITE	Shipping companies
10	SEA-TANK TERMINAL ANTWERP	Cargo handling

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

3 PORT OF GHENT

3.1 Port developments⁵¹

Despite limited losses in the fourth quarter, maritime traffic at the port of Gand fell by 23 % in 2009. Both bulk and general cargo fell by one-fifth. Bulk goods account for 80 % of traffic. Dry bulk goods, however, fell sharply, by 28 %, whereas liquid bulk goods managed to limit their decline to under 3 %. The decline did not prevent bulk goods from remaining the principal type of goods handled, with three-fifths of traffic. As for general cargo, the volume of containers loaded and unloaded shrank by 5 %. In 2009 it represented 2 % of total maritime traffic. Conventional general cargo and ro-ro traffic fell by more than 20 %. These poor results are principally attributable to weak conditions in the automobile industry and the metalworking industry. The biodiesel production industry, conversely, bolstered traffic.

The categories of goods most affected by the drop in volumes include agricultural products (-45 %), chemical products (-42 %), solid mineral fuel (-39 %) and ore and metal residues (-35 %). Only crude minerals and building materials, along with agricultural products and foodstuffs managed to hold their ground. The categories of ore and metal residues and agricultural products and foodstuffs each represent 18 % of goods handled. They are followed by solid mineral fuels and petroleum products, each with 12 % of traffic.

Inland waterway transport held up somewhat better, at slightly more than 16 million tonnes, an 18 % drop. Dry bulk goods, the principal type of transshipped cargo, was hit the hardest, down 26 %, whereas liquid bulk goods, notably petroleum products, actually rose slightly. As a result crude minerals and building materials are no longer the top category of transshipped goods, losing that distinction to petroleum products. Together, these two categories represent 52 % of traffic.

The port of Gand gets some hope for an improvement in the situation as the economy gets back on its feet and industrial production resumes.

On January 2009 the Stakeholders Advice Forum unanimously advised to build a new sealock within the existing lock complex for improving the maritime accessibility of the canal zone. Besides this, an exploratory study gave the Flemish and Dutch administrators enough information to decide on the follow-up of this project. On September 2009 the Flemish Government and the Dutch Government started financial negotiations for the construction of this new lock.

At the end of 2009 the infrastructure works and dredging works in and around the Kluizendok were almost finished. This project added 400 hectares of industrial space to the Ghent port area. At the northern side of the Kluizendok, a quay wall was built with a length of 440 metres and a depth of 8 metres. This completed - for the time being - the construction of quay walls. The accessibility of this port area was improved with the completion of the road network especially with the connection from Ghent to Zelzate by way of the left bank of the canal.

The Ghent Port Authority has also invested in a new water boat, the Aquarius, which is able to deliver drinking water in a more efficient way and enhances the comfort and safety of the crew. The rebuilding of the Singel was finished in 2009 and the Ghent Port Authority has continued its investments in ICT and the demolition works for the development of the industrial area Rieme-North.

The direct value added of the port of Ghent declined by 5.1 % (-6.2 % by volume). With the indirect effects, total value added was down by 1.4 % In 2009, the share of direct value added in Flemish GDP amounted to 1.6 %, and that of total value added came to 3.6 %. That figure is a little higher than in 2008. The share in Belgian GDP was unchanged, at 0.9 % for direct value added and 2 % for total value added.

Direct employment in firms in the port of Ghent declined by 3.3 % in 2009. That movement was amplified by a steeper fall among their subcontractors. In 2009, the proportion of direct and total employment in Flemish employment stood at 1.2 % and 2.9 % respectively, the latter figure being down by 0.1 % against 2008. In relation to employment in Belgium, the figures are unchanged at 0.7 % and 1.7 % respectively.

⁵¹ Sources: *Jaaroverzicht Vlaamse havens 2009* of the Vlaamse Havencommissie and *Annual Report 2009* of the Ghent Port Authority.

CHART 6 CHANGE IN DIRECT VALUE ADDED
(in € million, current prices)

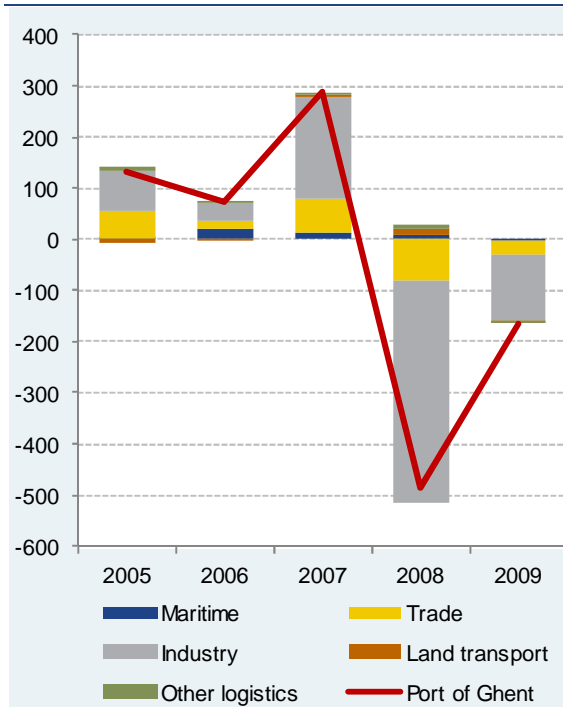
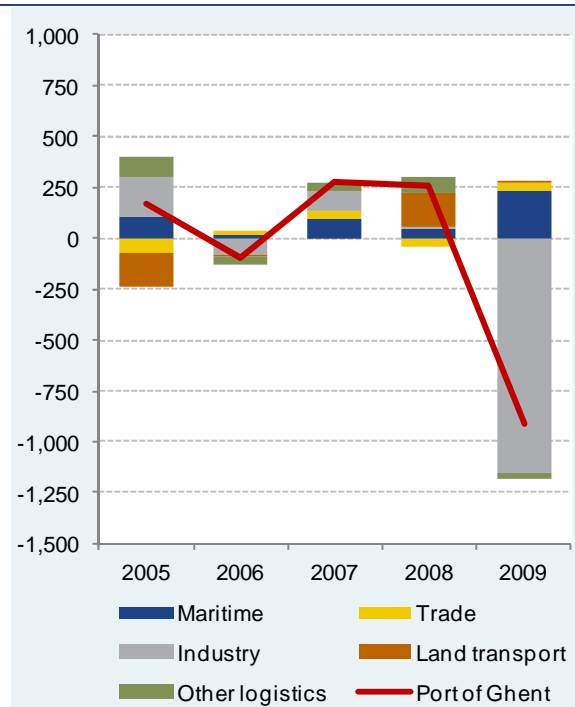


CHART 7 CHANGE IN DIRECT EMPLOYMENT
(FTE)



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

3.2 Value added

Direct value added at the port of Ghent fell by 5.1 % between 2008 and 2009. That decline is due mainly to the non-maritime cluster, as the maritime cluster stood up relatively well (-1.4 %) to the bad international economic situation and the ensuing reduction in traffic at the port of Ghent. Surprisingly, the cargo handling segment actually expanded, but that was due essentially to restructuring in the Katoen Natie group. Sectors in the non-maritime cluster are either stagnating or declining. Trade, particularly affected by the poor results in the petroleum trade branch, was down by 3.6 %. Industry, in which cars and metalworking hold a key position, declined by 6.2 %. In addition, the chemicals, car manufacturing and metalworking segments recorded their lowest value added for six years. Other services were down by 8.7 %.

Highlights in the maritime cluster in 2009:

- The developments in the various sectors were influenced by the reorganisation of a number of firms belonging to the Katoen Natie group.
- The distribution centre launched by DSV Solutions (Automotive) during 2008 was operating for a whole year in 2009, thus recording more value added. DSV Solutions (Automotive) was the largest firm in terms of value added, along with the Ghent Port Authority.
- The Ghent Port Authority recorded value added totalling 23.6 million. The decline in port fees as a result of the reduction in cargo transshipment had a negative impact on turnover. Conversely, entry into service of the Kluizendok sites and the associated concession fees augmented turnover.

Highlights in the non-maritime cluster in 2009:

- Owing to the slowdown in economic activity, many trading companies were confronted by a reduction in both turnover and operating results. Honda Europe and Delphi Europe felt the impact of lower sales volumes and the pressure on prices in car manufacturing. Belgian Shell achieved lower value added as a result of the movement in prices on the international petroleum market.
- At Electrabel, turnover and operating expenses were down as a result of the transfer of the Walloon natural gas and electricity distribution to Ores at the beginning of 2009. The increase in other operating income had a positive impact on the operating profit. In 2008, this electricity producer's results were still heavily influenced by the implementation of a new collective labour agreement.

- SPE's operating results were up as a result of various factors, including the expansion of nuclear capacity from the end of February 2009, the impact of restructuring on prices, the greater availability of the electricity generating stations compared to 2008, and the reduction in costs via self-sufficiency in gas.
- 2009 was the first fully operational year for Alco Bio Fuel. In the second half of the year, in particular, Alco Bio Fuel benefited from strengthening European demand which drove up the market price of ethanol, and the change in the law which made it compulsory to add biofuels to petrol. Alco Bio Fuel also benefited from lower energy and grain prices.
- Bioro also saw an increase in value added as a result of the change in the law on biofuels and the depreciation of its new production unit. Since entry into force of the compulsory use of biofuels on 1 July 2009, sales on the Belgian market have really taken off. As a result of exemption from excise duty for quota holders, lower logistics costs and stronger demand, they produce a reasonable operating margin on top of the firm's expenses.
- The Oleon production units were operating at low level or shut down owing to the lack of demand.
- Kronos Europe, which makes titanium dioxide, a product very sensitive to the business cycle, was hard hit by the economic crisis.
- CRI Catalyst Company Belgium also posted a decline in the operating result and turnover.
- The increase in value added at Taminco compensated to some extent for the reduction at the other chemical firms. Taminco achieved an increase in its operating profit as a result of the successful integration of the activities taken over in previous years.
- The car manufacturing sector suffered in 2009. Production volumes were down at Volvo Trucks and Volvo Cars. Suppliers such as Plastal and Tower Automotive Belgium recorded lower turnover.
- ArcelorMittal Gent used 50 % of its capacity in the first half of 2009, with only one furnace operating in Ghent. The Sidgal galvanising line was closed down. Since the beginning of August, the factory has returned to "normal" production levels. To improve performance in terms of delivery times, a number of finishing lines were restarted in the fourth quarter.
- Most firms in the other services sector saw a reduction in value added.

TABLE 20 VALUE ADDED AT THE PORT OF GHENT FROM 2004 TO 2009

(in € million - current prices)

Sectors	2004	2005	2006	2007	2008	2009	Share in 2009 (in p.c.)	Change from 2008 to 2009 (in p.c.)	Annual average change from 2004 to 2009 (in p.c.)
1. DIRECT EFFECTS	3,251.5	3,383.3	3,456.9	3,744.7	3,258.2	3,093.6	100.0	- 5.1	- 1.0
MARITIME CLUSTER	208.2	210.2	229.0	241.0	248.3	244.8	7.9	- 1.4	+ 3.3
Shipping agents and forwarders	41.5	44.5	50.9	59.8	55.6	51.5	1.7	- 7.4	+ 4.4
Cargo handling	127.2	129.0	140.6	136.6	144.1	149.2	4.8	+ 3.6	+ 3.3
Shipping companies	12.0	9.5	8.3	11.1	15.7	11.8	0.4	- 24.8	- 0.3
Shipbuilding and repair	3.9	4.0	4.2	4.8	4.4	4.7	0.2	+ 6.2	+ 4.1
Port construction and dredging	0.0	0.0	0.0	-0.1	-0.1	-1.1	0.0	n.	n.
Fishing	0.0	0.0	0.0	0.0	0.0	0.4	0.0	n.	n.
Port trade	5.5	6.6	6.5	6.7	4.6	4.6	0.1	+ 0.9	- 3.3
Port authority	18.3	16.6	18.6	22.3	24.0	23.6	0.8	- 1.4	+ 5.3
Public sector	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Allocation (p.m.)	6.0	5.5	4.9	5.9	10.6	9.1	-	- 13.7	+ 8.9
NON-MARITIME CLUSTER ...	3,043.3	3,173.1	3,227.9	3,503.7	3,009.9	2,848.8	92.1	- 5.4	- 1.3
TRADE	726.0	778.8	794.7	862.9	782.1	753.9	24.4	- 3.6	+ 0.8
INDUSTRY	2,162.5	2,240.9	2,279.1	2,477.0	2,041.3	1,914.4	61.9	- 6.2	- 2.4
Energy	59.4	48.7	61.3	71.5	84.4	114.6	3.7	+ 35.7	+ 14.0
Fuel production	7.8	6.6	5.8	11.0	9.3	32.9	1.1	+ 254.6	+ 33.3
Chemicals	224.4	245.4	255.2	274.9	271.9	215.4	7.0	- 20.8	- 0.8
Car manufacturing	632.2	611.3	636.2	646.0	628.6	555.3	18.0	- 11.7	- 2.6
Electronics	47.6	41.6	59.3	60.7	59.0	62.8	2.0	+ 6.6	+ 5.7
Metalworking industry	955.7	1,027.8	944.5	1,109.5	678.3	630.4	20.4	- 7.1	- 8.0
Construction	69.7	69.0	77.5	78.2	88.7	88.4	2.9	- 0.3	+ 4.9
Food industry	57.8	61.1	65.3	73.0	64.0	60.4	2.0	- 5.6	+ 0.9
Other industries	107.8	129.5	174.0	152.1	157.1	154.2	5.0	- 1.9	+ 7.4
LAND TRANSPORT	62.2	53.5	52.0	56.9	68.3	68.3	2.2	- 0.0	+ 1.9
Road transport.....	38.2	37.9	37.5	43.4	51.6	49.0	1.6	- 5.0	+ 5.1
Other land transport	24.0	15.6	14.5	13.5	16.7	19.2	0.6	+ 15.3	- 4.3
OTHER LOGISTIC SERVICES	92.7	99.9	102.2	106.9	118.3	112.2	3.6	- 5.1	+ 3.9
Other services	80.8	87.8	87.2	91.5	101.2	92.4	3.0	- 8.7	+ 2.7
Public sector	11.9	12.2	15.0	15.4	17.1	19.8	0.6	+ 16.0	+ 10.8
2. INDIRECT EFFECTS	3,494.0	3,430.9	3,464.8	3,743.9	3,719.9	3,784.8	-	+ 1.7	+ 1.6
MARITIME CLUSTER	334.1	372.4	378.5	384.8	361.4	364.9	-	+ 0.9	+ 1.8
NON-MARITIME CLUSTER ...	3,159.8	3,058.5	3,086.3	3,359.0	3,358.5	3,419.9	-	+ 1.8	+ 1.6
TOTAL VALUE ADDED	6,745.5	6,814.2	6,921.8	7,488.6	6,978.2	6,878.4	-	- 1.4	+ 0.4

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

TABLE 21 VALUE ADDED TOP 10 AT THE PORT OF GHENT IN 2009

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	S.P.E.	Energy
9	HONDA EUROPE	Trade
10	ELECTRABEL	Energy

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

3.3 Employment

Direct employment in the port of Ghent contracted by 3.3 %, falling to its lowest level for six years. Despite a reduction in traffic, employment in the maritime cluster expanded by 10.1 %, essentially on account of a reorganisation in the Katoen Natie group and the growth of the workforce of DSV Solutions (Automotive). Conversely, employment in the non-maritime cluster was down by 4.5 %. Employment in trade expanded slightly, but industry – which represents just under three-quarters of employment in the port – contracted by 5.6 %, mainly on account of the car manufacturing, metalworking and chemicals sectors, all three reaching their lowest level for six years. Land transport remained stable, in contrast to other services which declined by 2.9 %.

Compared to the figures published last year, employment in the energy segment showed a marked fall for all the years considered. Following a survey at Electrabel, it emerged that jobs in independent administrative services of the port of Ghent had been included in our previous studies. In this edition, only the production plants are taken into consideration.

Highlights in the maritime cluster in 2009:

- The developments in the various sectors were influenced by the internal reorganisation of a number of firms belonging to the Katoen Natie group. Thus, in the shipping agents and forwarders sector, Flanders Logistics suffered a sharp reduction in turnover following the takeover of part of its activity by Ghent Handling & Distribution in the cargo handling segment.
- The distribution centre launched by DSV Solutions (Automotive) during 2008 was operating for a whole year in 2009, so that the workforce increased by 220 full-time employees.

Highlights in the non-maritime cluster in 2009:

- The bankruptcy of Nilefos Chemie and its subsidiary Misa Eco caused the loss of 107 full-time jobs.
- Volvo Cars and Volvo Group Belgium cut their workforce in line with the lower production volumes. Both assembly firms introduced a system of temporary reductions in working time for white-collar workers. Volvo Cars introduced a system of temporary lay-offs on economic grounds for blue-collar workers. At Volvo Group Belgium, the number of temporary contracts was reduced and permanent staff retiring in 2009 were not replaced.
- The volume of production was also down at ArcelorMittal Belgium. One furnace and several production lines were temporarily closed down. The steel producer ArcelorMittal Belgium cut its workforce in line with the lower production volumes. It introduced lay-offs on economic grounds for blue-collar workers and a similar system for white-collar workers. The "Plan 2009" was applied to all blue and white-collar workers employed in Ghent. "Plan 2009" entails a workforce reduction amounting to 987 full-time equivalents and will be implemented over a three-year period using (early) retirement schemes and a voluntary redundancy programme.
- The growth of employment in the construction segment is largely attributable to Denys.
- In the electronics industry, all firms reduced their staff, but it was the job cuts at GE Industrial Belgium that had the biggest impact on the segment.
- Other logistics services were hard hit by the reduction in employment at Geo Measuring & Analyses.

TABLE 22 EMPLOYMENT AT THE PORT OF GHENT FROM 2004 TO 2009
(FTE)

Sectors	2004	2005	2006	2007	2008	2009	Share in 2009 (in p.c.)	Change from 2008 to 2009 (in p.c.)	Annual average change from 2004 to 2009 (in p.c.)
1. DIRECT EFFECTS	27,038	27,203	27,109	27,385	27,643	26,733	100.0	- 3.3	- 0.2
MARITIME CLUSTER	2,075	2,179	2,194	2,287	2,332	2,569	9.6	+ 10.1	+ 4.4
Shipping agents and forwarders	530	559	599	666	620	567	2.1	- 8.6	+ 1.4
Cargo handling	1,178	1,264	1,273	1,287	1,370	1,648	6.2	+ 20.3	+ 6.9
Shipping companies	103	92	58	64	77	69	0.3	- 10.8	- 7.7
Shipbuilding and repair	73	71	72	78	66	74	0.3	+ 11.6	+ 0.3
Port construction and dredging	0	0	0	0	0	0	0.0	n.	n.
Fishing	0	0	0	0	0	5	0.0	n.	n.
Port trade	42	45	43	42	50	51	0.2	+ 2.0	+ 4.1
Port authority	150	148	150	150	150	155	0.6	+ 3.5	+ 0.6
Public sector	0	0	0	0	0	0	0.0	n.	n.
<i>Allocation (p.m.)</i>	<i>66</i>	<i>65</i>	<i>78</i>	<i>77</i>	<i>99</i>	<i>108</i>	<i>-</i>	<i>+ 9.0</i>	<i>+ 10.4</i>
NON-MARITIME CLUSTER ...	24,963	25,024	24,915	25,097	25,310	24,164	90.4	- 4.5	- 0.6
TRADE	2,186	2,111	2,130	2,169	2,128	2,166	8.1	+ 1.8	- 0.2
INDUSTRY	20,595	20,795	20,709	20,809	20,816	19,661	73.5	- 5.6	- 0.9
Energy	224	225	289	277	320	327	1.2	+ 2.1	+ 7.9
Fuel production	63	59	52	59	79	87	0.3	+ 10.4	+ 6.8
Chemicals	1,898	1,884	1,860	1,953	1,950	1,786	6.7	- 8.4	- 1.2
Car manufacturing	8,345	8,708	8,565	8,577	8,564	7,909	29.6	- 7.7	- 1.1
Electronics	923	790	732	728	708	647	2.4	- 8.6	- 6.9
Metalworking industry	6,478	6,535	6,509	6,456	6,354	5,990	22.4	- 5.7	- 1.6
Construction	1,069	980	1,021	1,050	1,125	1,270	4.8	+ 12.9	+ 3.5
Food industry	488	501	502	518	554	560	2.1	+ 1.2	+ 2.8
Other industries	1,107	1,113	1,179	1,190	1,162	1,084	4.1	- 6.7	- 0.4
LAND TRANSPORT	944	782	774	777	945	947	3.5	+ 0.3	+ 0.1
Road transport	473	486	505	542	669	649	2.4	- 2.9	+ 6.6
Other land transport	471	295	270	235	276	298	1.1	+ 7.9	- 8.8
OTHER LOGISTIC SERVICES	1,238	1,337	1,301	1,343	1,422	1,390	5.2	- 2.2	+ 2.3
Other services	970	1,078	1,041	1,083	1,157	1,123	4.2	- 2.9	+ 3.0
Public sector	268	259	261	260	265	267	1.0	+ 0.8	- 0.1
2. INDIRECT EFFECTS	38,723	36,629	37,334	39,278	41,184	38,537	-	- 6.4	- 0.1
MARITIME CLUSTER	3,855	4,422	4,155	4,285	4,298	4,336	-	+ 0.9	+ 2.4
NON-MARITIME CLUSTER ...	34,867	32,207	33,178	34,993	36,886	34,201	-	- 7.3	- 0.4
TOTAL EMPLOYMENT	65,760	63,832	64,443	66,662	68,826	65,270	-	- 5.2	- 0.1

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

TABLE 23 EMPLOYMENT TOP 10 AT THE PORT OF GHENT IN 2009

Ranking	Company name	Sector
1	ARCELORMITTAL BELGIUM	Metalworking industry
2	VOLVO CARS	Car manufacturing
3	VOLVO GROUP BELGIUM	Car manufacturing
4	DENYS	Construction
5	HONDA EUROPE	Trade
6	DSV SOLUTIONS(AUTOMOTIVE)	Cargo handling
7	GE INDUSTRIAL BELGIUM	Electronics
8	STORA ENSO LANGERBRUGGE	Other industries
9	TOWER AUTOMOTIVE BELGIUM	Car manufacturing
10	TAMINCO	Chemicals

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

3.4 Investment

Investment in the maritime cluster of the port of Ghent was relatively stable in 2009, as the decline among shipping companies was offset by the increase in cargo handling. Conversely, in the non-maritime cluster investment was down by 17.2 %. This fall affected all sectors, the decline ranging between 16.7 % for industry and 28 % for land transport. Nonetheless, the value of total investment for the non-maritime cluster was still well above the figures for 2006 and previous years.

Highlights in the maritime cluster in 2009:

- Tailormade Logistics took out a lease on a warehouse and an office building.
- The main investment by Louis Dreyfus Commodities Belgium concerned the creation of a new NFC (not-from-concentrate) terminal for receiving, processing and distributing fruit juices.
- Ghent Transport and Storage invested in the renovation of the Middendok Terminal and the construction of additional storage capacity at the Kluizendok.
- Sabeen, part of the Katoen Natie group, invested in its depot complex in the Desteldonk zone.
- The Ghent shipping company Danca-Shipping bought the "San Remo", an inland waterway vessel.
- The Ghent Port Authority invested in the "Aquarius", a vessel supplying drinking water in the port area, reconstruction of the Singel road, the electronic information system Enigma, expansion of the camera network, and renovation of the radio communication network.

Highlights in the non-maritime cluster in 2009:

- At Oiltanking Ghent, new tank storage capacity totalling 220,000 cubic metres came into service. This additional capacity is used mainly for strategic storage.
- Electrabel continued construction at its Knippegroen steam power station. This power station with a capacity of 350 MW converts blast furnace gas from the steel producer ArcelorMittal Belgium into electricity. The power station entered into operation during 2010.
- Owing to the completion of several large investment projects, mainly in biofuels, there was a decline in investment in the fuel production sector.
- Most chemical firms cut their investment. Oleon and Taminco invested substantial sums respectively in the fatty acid factory in Ertvelde and a combined heat and power station.
- Volvo Cars invested large amounts in modifying the plant for the new S60 model. Investment declined at most firms in the car manufacturing sector.
- ArcelorMittal Belgium made various investments in Ghent, including linking its gas network to Electrabel's Knippegroen power station, a coal grinding plant and a new portal crane.
- In the food industry, the biggest investors were Cargill and Algist Bruggeman. Cargill⁵² invested in the conversion of its Ghent site to a multi-crush plant. Algist Bruggeman invested in a combined heat and power plant which is to become operational in 2010.
- In the other industries sector, the dominant investor was Stora Enso Langerbrugge. This paper producer made further investments in a multi-fuel combined heat and power station and an automated sorting line for recycled waste. Both projects are scheduled to become operational in 2010.
- DFDS Logistics (formerly Hallens) acquired 300 new trailers.

⁵² The annual accounts of Cargill cover part of the year 2008.

- The Flemish Region invested mainly in the Kluizendok and the Ghent-Terneuzen canal.

TABLE 24 INVESTMENT AT THE PORT OF GHENT FROM 2004 TO 2009

(in € million - current prices)

Sectors	2004	2005	2006	2007	2008	2009	Share in 2009 (in p.c.)	Change from 2008 to 2009 (in p.c.)	Annual average change from 2004 to 2009 (in p.c.)
MARITIME CLUSTER	40.8	57.2	54.4	95.8	80.3	80.8	13.6	+ 0.7	+ 14.6
Shipping agents and forwarders	7.3	2.3	2.4	9.7	5.6	3.1	0.5	- 44.6	- 15.8
Cargo handling	13.3	24.9	27.1	47.3	34.3	44.7	7.5	+ 30.3	+ 27.5
Shipping companies	2.4	9.0	7.6	11.3	20.4	10.6	1.8	- 48.3	+ 34.3
Shipbuilding and repair	1.1	0.2	0.4	0.5	0.5	0.8	0.1	+ 44.7	- 7.3
Port construction and dredging	0.0	0.0	0.0	0.0	0.1	0.0	0.0	n.	n.
Fishing	0.0	0.0	0.0	0.0	0.0	0.1	0.0	n.	n.
Port trade	0.0	0.1	0.1	0.2	0.0	0.0	0.0	n.	n.
Port authority	16.6	20.8	16.8	27.0	19.3	21.6	3.6	+ 11.6	+ 5.3
Public sector	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
<i>Allocation (p.m.)</i>	<i>3.3</i>	<i>4.2</i>	<i>8.0</i>	<i>11.9</i>	<i>9.8</i>	<i>7.5</i>	<i>-</i>	<i>- 22.9</i>	<i>+ 17.8</i>
NON-MARITIME CLUSTER ...	295.6	293.4	338.2	592.0	621.5	514.8	86.4	- 17.2	+ 11.7
TRADE	30.6	33.5	26.7	40.9	52.5	42.7	7.2	- 18.7	+ 6.9
INDUSTRY	228.3	219.2	244.4	488.2	518.8	431.9	72.5	- 16.7	+ 13.6
Energy	1.9	8.6	4.8	61.1	125.4	179.2	30.1	+ 42.9	+ 147.6
Fuel production	1.1	1.4	31.7	72.0	55.9	11.7	2.0	- 79.0	+ 60.0
Chemicals	25.3	29.9	38.9	72.5	61.8	34.6	5.8	- 44.0	+ 6.5
Car manufacturing	61.7	78.6	54.4	111.2	94.8	52.3	8.8	- 44.9	- 3.3
Electronics	4.9	4.4	3.2	5.2	6.3	3.0	0.5	- 51.7	- 9.3
Metalworking industry	91.1	64.2	61.8	113.6	74.9	55.3	9.3	- 26.2	- 9.5
Construction	5.1	6.8	13.8	12.4	13.9	17.5	2.9	+ 25.4	+ 27.7
Food industry	10.6	6.0	21.5	19.8	27.6	20.1	3.4	- 27.3	+ 13.7
Other industries	26.6	19.4	14.3	20.5	58.1	58.2	9.8	+ 0.2	+ 17.0
LAND TRANSPORT	11.6	6.1	15.0	14.5	15.0	10.8	1.8	- 28.0	- 1.4
Road transport	9.4	3.7	11.9	12.2	11.5	9.7	1.6	- 16.0	+ 0.6
Other land transport	2.2	2.5	3.0	2.3	3.5	1.2	0.2	- 67.4	- 12.2
OTHER LOGISTIC SERVICES	25.1	34.6	52.2	48.4	35.2	29.4	4.9	- 16.5	+ 3.2
Other services	10.5	17.8	31.6	22.3	21.5	21.6	3.6	+ 0.9	+ 15.6
Public sector	14.7	16.7	20.6	26.2	13.7	7.7	1.3	- 43.6	- 12.1
DIRECT INVESTMENT	336.4	350.6	392.6	687.8	701.8	595.7	100.0	- 15.1	+ 12.1

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

TABLE 25 INVESTMENT TOP 10 AT THE PORT OF GHENT IN 2009

Ranking	Company name	Sector
1	ELECTRABEL	Energy
2	S.P.E.	Energy
3	STORA ENSO LANGERBRUGGE	Other industries
4	ARCELORMITTAL BELGIUM	Metalworking industry
5	VOLVO CARS	Car manufacturing
6	GHENT PORT AUTHORITY	Port authority
7	SABEEN	Cargo handling
8	OILTANKING GHENT	Trade
9	TAMINCO	Chemicals
10	OLEON	Chemicals

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

4 PORT OF OSTEND

4.1 Port developments⁵³

The port of Ostend was hit by the full brunt of the economic crisis and the resulting decrease in maritime transport. Traffic slumped by nearly 37 % between 2008 and 2009. Due to the severe economic slowdown, the Dart Line services to Killinghome and Purfleet were suspended. At end-June, Cobelfret shut down its TerminalCo subsidiary. TerminalCo ran the top-performing ro-ro operation in the port. The closure put an end to the connection with Ipswich. TransEuropa Ferries was the only company that operated a service to Ramsgate in the UK continuously throughout the year. This service catered principally to accompanied trailers, which represent 85 % of its clientele. The service provided by TransEuropa Ferries varied little over the course of the year. All in all, the Ostend port's ro-ro traffic fell from 6.7 million tonnes to 3.9 million, a decrease of practically 42 %. Tourist cars and passenger traffic fell by more than one-fifth.

The number of cruise ships docking at the port of Ostend was fairly consistent. Port managers hope that the new pier will attract a category of passenger ships previously unable to dock at the port. Because the operators of these ships try their best to vary the routes they take, expanding the range of ships that can make a call at the port is necessary to keep these visits coming.

In general cargo, the excellent result of 2008 – with 1.7 million tonnes – was obviously not repeated. The volume of dry bulk goods loaded and unloaded in 2009 was 1.4 million tonnes, mostly sand and aggregates.

Faced with this steep drop in activity, especially in ro-ro traffic, the Port of Ostend decided to invest in the renewable energy sector. This sector, which admittedly generates little traffic, is developing briskly, generating value added and jobs. Naturally, certain investments, notably to shore up the soundness of the quays, are needed. However, the port of Ostend is not abandoning its other maritime activities. When the port conducted a review of its strategic goals, it decided to continue to prioritise ro-ro transport, sand and gravel, fishing and cruise ships.

Improvements to the entry of the port of Ostend are clearly critically important. However, work has been delayed by the discovery of unexploded ordnance. Work on the eastern pier was able to start. But the port also has to deal with a shortage of land. To make up for this shortage, it plans to fill in a portion of the Visserijdok. Another project involves moving the pilotage fleet of the Flemish Government to give it access to more adequate infrastructure.

The direct value added produced by the port of Ostend was down by 4.2 % in 2009 (5.4 % by volume). Total value added, which includes the part generated upstream of the firms under review, declined by 3.5 %. In relation to the GDP of the Flemish Region, direct value added represented 0.2 % in 2009 and total value added represented 0.5 %. These two percentages are the same as in 2008. In 2009, direct value added and total value added amounted to 0.1 % and 0.3 % respectively of Belgian GDP.

Direct employment in the port of Ostend was up by 1.1 %. The total of direct and indirect employment, adversely affected by the national situation, was down by 3.4 %. 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 0.4 % of Flemish employment. In 2009, direct and total employment represented 0.1 and 0.3 % respectively of Belgian employment.

⁵³ Sources: *Jaaroverzicht Vlaamse havens 2009* of the Vlaamse Havencommissie and *Annual Report 2009* of the Ostend Port Authority.

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

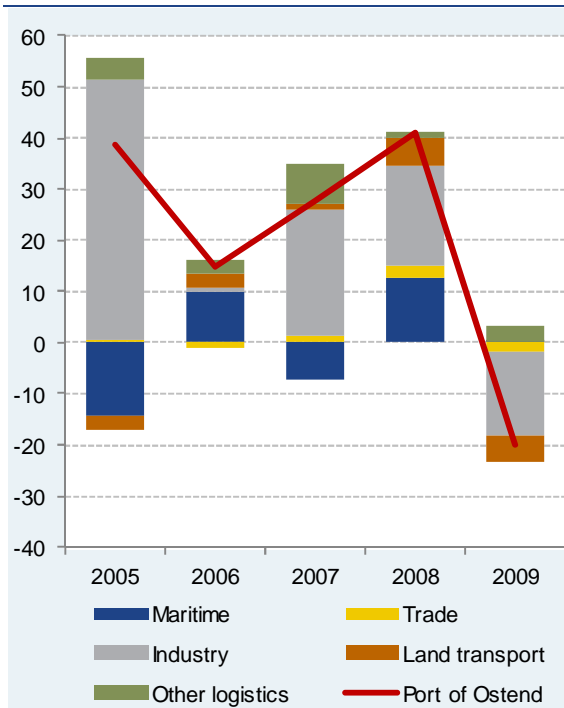
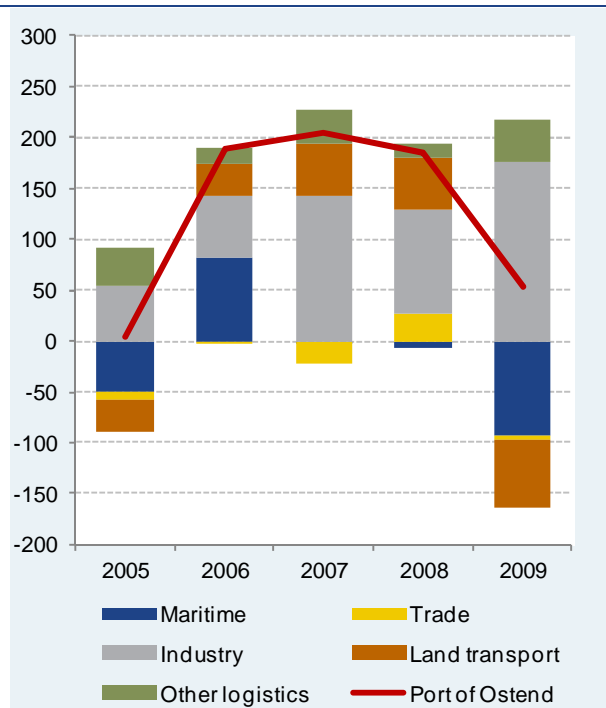


CHART 9 CHANGE IN DIRECT EMPLOYMENT
(FTE)



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

4.2 Value added

In the port of Ostend, direct value added was down by 4.2 %. The value added produced in the maritime cluster remained stable, while the increase in port construction and dredging offset the decline in cargo handling and shipping companies. In the case of shipping companies, the decline is due to the departure of a company operating on the route to Great Britain. In the non-maritime cluster value added was 5.8 % down. The fall was felt mainly in the metalworking industry, where value added declined by 23.6 %. Trade was down by 8.8 %, but the figure achieved was still above that for 2007 and previous years. The same is true for land transport, despite a 17.2 % decline. Other logistic services recorded 5.4 % growth.

Highlights in the maritime cluster in 2009:

- The port construction and dredging sector was supported by the excellent results of Baggerwerken Decloedt en Zoon. This company also raised the beach at Mariakerke, as well as carrying out dredging work for the new fairway into Ostend and widening of the Pas Van Zand. Routine dredging was also carried out at the Blankenberge yacht harbour and at Ostend.
- The decline in value added among cargo handlers is due to TerminalCo which had to close its business down following the loss of its single customer.
- The collapse of value added among shipping companies is due to the departure of Dart Line to Zeebrugge

Highlights in the non-maritime cluster in 2009:

- In the energy sector, Electrawinds-Biomassa saw its turnover increase as a result of the renewal of the engines installed at the beginning of 2009, which put an end to its production problems, but also thanks to a better return on the refining of used oils.
- Electrawinds Biostoom also posted an increase in turnover.
- At Daikin Europe, turnover was down as a result of falling demand, particularly in the construction sector which was hit by the economic recession.
- Algemene Ondernemingen Soetaert transferred its headquarters to the port area.
- At Transport Maenhout, the financial year brought a decline in the number of consignments plus a serious reduction in turnover and results. The fall in turnover is due partly to a reduction in services to clients, but also to cuts in selling prices.

TABLE 26 VALUE ADDED AT THE PORT OF OSTEND FROM 2004 TO 2009

(in € million - current prices)

Sectors	2004	2005	2006	2007	2008	2009	Share in 2009 (in p.c.)	Change from 2008 to 2009 (in p.c.)	Annual average change from 2004 to 2009 (in p.c.)
1. DIRECT EFFECTS	354.9	393.6	408.6	436.2	477.3	457.2	100.0	- 4.2	+ 5.2
MARITIME CLUSTER	125.3	111.1	121.2	114.0	126.6	126.8	27.7	+ 0.1	+ 0.2
Shipping agents and forwarders	2.8	3.2	3.3	3.9	3.9	4.3	0.9	+ 11.2	+ 8.8
Cargo handling	8.5	7.7	8.1	5.9	7.3	2.9	0.6	- 60.5	- 19.3
Shipping companies	3.4	2.9	0.8	-0.6	9.0	0.2	0.0	- 97.7	- 42.7
Shipbuilding and repair	14.5	13.9	13.3	15.0	12.4	13.3	2.9	+ 7.5	- 1.7
Port construction and dredging	47.5	31.8	39.7	30.2	41.9	55.4	12.1	+ 32.0	+ 3.1
Fishing	32.2	34.9	39.8	42.3	36.3	37.2	8.1	+ 2.5	+ 3.0
Port trade	0.2	0.2	0.2	0.2	0.3	0.4	0.1	+ 27.8	+ 10.7
Port authority	4.8	5.2	4.3	4.7	4.6	3.0	0.7	- 35.1	- 9.1
Public sector	11.3	11.3	11.6	12.3	10.8	10.1	2.2	- 6.4	- 2.3
Allocation (p.m.)	11.3	10.3	13.3	14.7	10.9	11.1	-	+ 2.3	- 0.3
NON-MARITIME CLUSTER ...	229.6	282.4	287.3	322.2	350.7	330.4	72.3	- 5.8	+ 7.6
TRADE	16.6	17.0	15.9	17.4	19.7	18.0	3.9	- 8.8	+ 1.7
INDUSTRY	152.8	203.6	204.2	228.6	248.1	231.6	50.7	- 6.6	+ 8.7
Energy	0.2	1.4	5.0	3.3	-6.5	13.6	3.0	n.	+ 131.1
Fuel production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Chemicals	35.8	37.2	33.6	33.5	34.7	36.6	8.0	+ 5.5	+ 0.5
Car manufacturing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Electronics	0.7	0.7	0.6	0.7	1.0	1.0	0.2	- 5.1	+ 7.0
Metalworking industry	98.3	150.6	152.1	176.3	203.5	155.5	34.0	- 23.6	+ 9.6
Construction	5.1	5.3	5.6	6.2	6.8	16.0	3.5	+ 136.8	+ 25.6
Food industry	9.7	8.2	7.4	8.0	7.2	7.3	1.6	+ 0.9	- 5.5
Other industries	3.0	0.3	-0.1	0.6	1.4	1.7	0.4	+ 22.7	- 10.8
LAND TRANSPORT	22.7	19.8	22.4	23.7	29.2	24.1	5.3	- 17.2	+ 1.3
Road transport	17.6	18.2	21.6	22.9	28.9	24.1	5.3	- 16.5	+ 6.5
Other land transport	5.1	1.6	0.8	0.7	0.3	0.0	0.0	- 100.0	- 100.0
OTHER LOGISTIC SERVICES	37.6	42.1	44.8	52.5	53.7	56.7	12.4	+ 5.4	+ 8.6
Other services	17.1	16.6	18.3	23.3	22.6	24.1	5.3	+ 6.4	+ 7.0
Public sector	20.4	25.5	26.5	29.2	31.1	32.6	7.1	+ 4.7	+ 9.8
2. INDIRECT EFFECTS	339.2	357.2	387.5	397.9	446.0	433.5	-	- 2.8	+ 5.0
MARITIME CLUSTER	149.9	133.1	146.7	129.1	148.1	146.8	-	- 0.9	- 0.4
NON-MARITIME CLUSTER ...	189.2	224.0	240.8	268.7	297.9	286.7	-	- 3.8	+ 8.7
TOTAL VALUE ADDED	694.0	750.7	796.0	834.0	923.4	890.7	-	- 3.5	+ 5.1

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

TABLE 27 VALUE ADDED TOP 10 AT THE PORT OF OSTEND IN 2009

Ranking	Company name	Sector
1	DAIKIN EUROPE	Metalworking industry
2	BAGGERWERKEN DECLOEDT EN ZOON	Port construction and dredging
3	PUBLIC ADMINISTRATION	Public sector
4	PROVIRON FUNCTIONAL CHEMICALS	Chemicals
5	MORUBEL	Fishing
6	BELGIAN NAVY	Public sector
7	ALGEMENE ONDERNEMINGEN SOETAERT	Construction
8	ELECTRAWINDS BIOMASSA	Energy
9	TRANSPORT MAENHOUT	Road transport
10	PROVIRON BASIC CHEMICALS	Chemicals

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

4.3 Employment

Despite a difficult year for cross-Channel traffic, there was no decline in employment at the port of Ostend in 2009. In the maritime cluster, 93 FTEs were lost whereas 146 jobs were created in the non-maritime cluster. In the maritime cluster, cargo handling, shipping companies, shipbuilding and repair and fishing were the main segments accounting for the decline. In the non-maritime cluster, trade and land transport were down while industry and other logistic services recorded an increase. Land transport was particularly affected, with FTEs down by 16 %.

Highlights in the maritime cluster in 2009:

- The activity of Dart Line consisted of the operation of 3 scheduled services from Ostend. The services in Ostend were terminated on 30 June 2009.
- Once TerminalCo's sole customer pulled out, the company decided to terminate the activities. In winding up the business, the necessary reorganisation was carried out, and no more staff are being employed.
- The Belgian Navy increased its presence in the port of Ostend.

Highlights in the non-maritime cluster in 2009:

- In July 2009 the power station owned by Electrawinds Biostoom came into operation. The electricity is sold to an energy company under a long-term contract.
- Algemene Ondernemingen Soetaert transferred its headquarters to the port area.
- The Proviron group cut its workforce when reorganising its activities.
- At Electrawinds, the workforce expanded by more than half.
- The transport firm Maenhout Logistics cut its workforce in view of the slackening of its activities.
- Natrajacali expanded its workforce.

TABLE 28 EMPLOYMENT AT THE PORT OF OSTEND FROM 2004 TO 2009
(FTE)

Sectors	2004	2005	2006	2007	2008	2009	Share in 2009 (in p.c.)	Change from 2008 to 2009 (in p.c.)	Annual average change from 2004 to 2009 (in p.c.)
1. DIRECT EFFECTS	4,441	4,445	4,634	4,839	5,025	5,079	100.0	+ 1.1	+ 2.7
MARITIME CLUSTER	1,609	1,558	1,640	1,639	1,632	1,539	30.3	- 5.7	- 0.9
Shipping agents and forwarders	43	50	47	53	58	60	1.2	+ 2.8	+ 6.8
Cargo handling	154	154	160	183	171	134	2.6	- 21.8	- 2.8
Shipping companies	18	21	25	7	35	3	0.1	- 90.8	- 29.2
Shipbuilding and repair	280	255	266	281	256	245	4.8	- 4.1	- 2.6
Port construction and dredging	396	353	350	328	352	348	6.9	- 1.0	- 2.6
Fishing	435	449	514	512	496	489	9.6	- 1.4	+ 2.4
Port trade	3	3	3	4	5	6	0.1	+ 9.6	+ 16.1
Port authority	41	42	42	47	46	44	0.9	- 4.3	+ 1.7
Public sector	239	231	233	225	213	211	4.2	- 0.9	- 2.4
<i>Allocation (p.m.)</i>	<i>196</i>	<i>164</i>	<i>192</i>	<i>198</i>	<i>175</i>	<i>153</i>	<i>-</i>	<i>- 12.6</i>	<i>- 4.8</i>
NON-MARITIME CLUSTER ...	2,832	2,886	2,994	3,200	3,394	3,540	69.7	+ 4.3	+ 4.6
TRADE	214	207	206	185	212	208	4.1	- 2.1	- 0.6
INDUSTRY	1,648	1,702	1,762	1,905	2,006	2,182	43.0	+ 8.8	+ 5.8
Energy	1	4	12	21	34	50	1.0	+ 50.4	+ 118.7
Fuel production	0	0	0	0	0	0	0.0	n.	n.
Chemicals	449	424	400	419	419	391	7.7	- 6.6	- 2.7
Car manufacturing	0	0	0	0	0	0	0.0	n.	n.
Electronics	12	10	10	11	12	12	0.2	+ 0.0	+ 0.9
Metalworking industry	942	1,069	1,135	1,230	1,302	1,332	26.2	+ 2.3	+ 7.2
Construction	102	104	113	114	118	232	4.6	+ 96.7	+ 17.9
Food industry	79	86	91	99	101	121	2.4	+ 19.9	+ 8.9
Other industries	64	6	1	10	20	43	0.8	+ 109.3	- 7.8
LAND TRANSPORT	316	285	317	369	421	354	7.0	- 16.0	+ 2.3
Road transport	224	240	268	320	385	354	7.0	- 8.2	+ 9.6
Other land transport	92	45	49	49	35	0	0.0	- 100.0	- 100.0
OTHER LOGISTIC SERVICES	653	692	709	742	754	796	15.7	+ 5.6	+ 4.0
Other services	158	164	150	167	189	202	4.0	+ 6.9	+ 5.0
Public sector	495	528	559	575	565	594	11.7	+ 5.1	+ 3.7
2. INDIRECT EFFECTS	4,337	4,499	4,624	4,587	5,295	4,893	-	- 7.6	+ 2.4
MARITIME CLUSTER	1,902	1,968	1,994	1,635	2,115	1,562	-	- 26.2	- 3.9
NON-MARITIME CLUSTER ...	2,435	2,532	2,630	2,951	3,180	3,331	-	+ 4.7	+ 6.5
TOTAL EMPLOYMENT	8,779	8,944	9,258	9,426	10,320	9,972	-	- 3.4	+ 2.6

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

TABLE 29 EMPLOYMENT TOP 10 AT THE PORT OF OSTEND IN 2009

Ranking	Company name	Sector
1	DAIKIN EUROPE	Metalworking industry
2	PUBLIC ADMINISTRATION	Public sector
3	BAGGERWERKEN DECLOEDT EN ZOON	Port construction and dredging
4	BELGIAN NAVY	Public sector
5	PROVIRON FUNCTIONAL CHEMICALS	Chemicals
6	CLEMACO CONTRACTING	Shipbuilding and repair
7	EUROPEAN FREIGHT SERVICES	Road transport
8	ALGEMENE ONDERNEMINGEN SOETAERT	Construction
9	NATRAJACALI	Food industry
10	MAENHOUT LOGISTICS	Road transport

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

4.4 Investment

Investment declined in the port of Ostend after two particularly good years. In the maritime cluster, it was down by 47.3 %, and in the non-maritime cluster by 29.7 %. Since Electrawinds Biostoom had completed its investment in a bio steam power station, investment in the energy sector showed a marked fall. Altogether, port enterprises invested just over € 116 million.

Highlights in the maritime cluster in 2009:

- Investment in the port construction and dredging sector was attributable mainly to Baggerwerken Decloedt en Zoon

Highlights in the non-maritime cluster in 2009:

- Most of the investment in the energy sector was carried out by Electrawinds-Biomassa.
- The arrival of Algemene Ondernemingen Soetaert gave a boost to the construction sector.
- Daikin Europe continued to invest in the metalworking industry.
- The main government investment concerns the dredging of the Bruges-Ostend canal at the port of Ostend, in order to improve access.

TABLE 30 INVESTMENT AT THE PORT OF OSTEND FROM 2004 TO 2009
(in € million - current prices)

Sectors	2004	2005	2006	2007	2008	2009	Share in 2009 (in p.c.)	Change from 2008 to 2009 (in p.c.)	Annual average change from 2004 to 2009 (in p.c.)
MARITIME CLUSTER	21.5	41.7	23.8	81.6	74.7	39.4	33.9	- 47.3	+ 12.9
Shipping agents and forwarders	1.5	0.8	0.9	1.8	1.5	1.3	1.1	- 13.8	- 2.9
Cargo handling	0.7	1.0	1.3	2.0	3.8	1.5	1.3	- 60.9	+ 14.9
Shipping companies	0.2	13.6	1.2	25.1	3.0	0.0	0.0	- 98.5	- 22.3
Shipbuilding and repair	1.8	0.8	1.7	2.0	2.1	1.2	1.0	- 43.8	- 8.2
Port construction and dredging	5.1	11.9	10.3	39.6	55.7	28.9	24.8	- 48.2	+ 41.5
Fishing	5.9	6.4	6.6	7.0	5.6	5.0	4.3	- 12.3	- 3.5
Port trade	0.1	0.1	0.1	0.0	0.0	0.0	0.0	- 26.1	- 23.6
Port authority	6.3	7.2	1.6	4.0	3.0	1.6	1.3	- 47.4	- 24.3
Public sector	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
<i>Allocation (p.m.)</i>	<i>3.7</i>	<i>2.0</i>	<i>2.5</i>	<i>4.8</i>	<i>4.5</i>	<i>4.1</i>	<i>-</i>	<i>- 7.8</i>	<i>+ 2.2</i>
NON-MARITIME CLUSTER ...	63.2	56.9	53.1	74.0	109.4	76.9	66.1	- 29.7	+ 4.0
TRADE	20.0	6.2	3.8	5.1	4.0	2.5	2.1	- 37.5	- 34.0
INDUSTRY	20.3	36.4	24.8	47.7	78.1	29.8	25.6	- 61.9	+ 8.0
Energy	1.0	16.7	2.3	6.6	54.7	8.9	7.6	- 83.7	+ 55.2
Fuel production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Chemicals	5.9	7.8	7.5	25.5	7.1	1.6	1.4	- 77.9	- 23.1
Car manufacturing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Electronics	0.0	0.1	0.0	0.1	0.0	0.1	0.1	+ 168.6	+ 20.5
Metalworking industry	9.2	10.5	10.1	11.4	13.1	14.3	12.3	+ 9.1	+ 9.3
Construction	0.7	0.6	1.3	1.3	1.1	3.8	3.3	+ 245.0	+ 39.1
Food industry	2.6	0.7	3.4	0.7	0.7	0.3	0.2	- 61.8	- 36.1
Other industries	0.8	0.1	0.1	2.0	1.3	0.8	0.7	- 39.8	- 0.8
LAND TRANSPORT	2.6	5.4	5.6	8.7	4.4	1.6	1.4	- 63.6	- 9.3
Road transport	1.9	3.4	3.3	7.2	4.2	1.6	1.4	- 62.3	- 3.3
Other land transport	0.7	2.0	2.3	1.5	0.2	0.0	0.0	- 100.0	- 100.0
OTHER LOGISTIC SERVICES	20.3	9.0	18.9	12.6	22.9	43.0	37.0	+ 87.8	+ 16.2
Other services	9.3	4.9	4.8	7.7	8.8	6.0	5.2	- 30.9	- 8.2
Public sector	11.1	4.1	14.1	4.9	14.1	37.0	31.8	+ 161.2	+ 27.3
DIRECT INVESTMENT	84.7	98.6	76.9	155.6	184.1	116.3	100.0	- 36.8	+ 6.5

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

TABLE 31 INVESTMENT TOP 10 AT THE PORT OF OSTEND IN 2009

Ranking	Company name	Sector
1	PUBLIC ADMINISTRATION	Public sector
2	BAGGERWERKEN DECLOEDT EN ZOON	Port construction and dredging
3	DAIKIN EUROPE	Metalworking industry
4	ELECTRAWINDS BIOMASSA	Energy
5	ALGEMENE ONDERNEMINGEN SOETAERT	Construction
6	ELECTRAWINDS	Other services
7	OSTEND PORT AUTHORITY	Port authority
8	DE BRUYCKER	Trade
9	TRANSPORT MAENHOUT	Road transport
10	SYTECH	Metalworking industry

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

5 PORT OF ZEEBRUGGE

5.1 Port developments⁵⁴

Even though fewer vessels called at Zeebrugge in 2009, the tonnage transshipped increased by 6.8 %, a real accomplishment in a tough year. The port achieved a new record of 44.9 million tonnes of cargo handled. The biggest increase was in volume unloaded, which rose 10.6 % to more than 23 million tonnes.

Passenger numbers were relatively stable. By contrast, tourist vehicle traffic fell by more than 18 %. The decline was felt in both vehicles loaded and vehicles unloaded. The number of heavy trucks fell by more than 11 %. And the number of new cars unloaded fell by just under 38 %, while the number of new cars loaded slumped by more than 41 %.

Expressed in TEU, container traffic rose by more than 5 %. The biggest increase was in containers loaded. Expressed in volumes, containers represented over 55 % of the Zeebrugge port's traffic. The highlight of 2009 was the fact that container traffic increased by more than 17 % over 12 months. The strongest growth was in containers either from or headed to other continents; they now represent a little under 43 % of container traffic. The port of Zeebrugge now welcomes several of the major global operators' intercontinental lines. These lines are operated through the use of Ultra Large Container Carriers (ULCC), and the transshipment of merchandise to or from other ports in northeast Europe is growing.

Liquid bulk goods represent just under 18 % of the port's traffic. Natural gas transshipment has risen strongly, whereas that of refined petroleum products slipped by nearly 22 %. Dry bulk goods also fell sharply, down 18 %, due notably to the 19 % drop in construction materials.

As indicated earlier, ro-ro traffic fell by nearly one-fifth. There were two principal reasons for the decline. The economic crisis caused household consumption to shrink, which led to fewer car sales in 2009. The port of Zeebrugge dominates the market for handling and receiving new vehicles bound for the European market. The second explanation is the slowing of the UK economy, which began in 2008, resulting in stagnant real GDP growth. As a result, the port of Zeebrugge saw its ferry traffic with the UK diminish considerably despite the return of Cobelfret's service from Ostend and resumption of the Zeebrugge-Rosyth route.

The port of Zeebrugge continued to carry out a variety of projects designed to improve its port infrastructures in 2009. For example, construction began on a new commercial landing stage in the Britannia dock. Work continued on the Verbindings dock jetty and the Bastenaken quay. The extension of the Canada quay with a jetty is finished. The port authority has also contracted out various roadway infrastructure projects to improve access to different areas of the port: for example, a bridge linking the Bastenaken terminal to the maritime logistics area by passing above the Verbindings dock. In 2009 the URS company⁵⁵ received delivery of the "Union Onyx" and "Union Topaz", two tug boats, that completed the renovation of its Zeebrugge tug fleet. The new inspection post for the Customs Administration and the Federal Agency for the Safety of the Food Chain, financed by the Port of Zeebrugge, the Customs Administration and the Buildings Agency, was inaugurated in September. Private companies continued to develop their operations at the port. ICO opened a cleaning and inspection centre for cars destined for Ireland and the UK, among other markets. Wallenius Wilhemsen invested in a new 7,600 square metres vehicle processing centre. And Seabridge Logistics started up a new 20,000 square metres distribution centre equipped with solar panels. This company is part of the Efico group, a coffee trader. Lastly, a new fresh produce centre, Zeebrugge Food Logistics (ZFL), designed to handle refrigerated and deep-frozen goods and provide cold store services, was opened in 2009. This facility covers 5,000 square metres and has 80,000 cubic metres of storage capacity. It was specially designed to facilitate the handling of pallets. It has six loading docks. Four of them offer direct access to the cold storage through an air lock, and two are equipped to receive containers.

⁵⁴ Sources: *Annual Report 2009* of the Zeebrugge Port Authority and Lloyd Special Report "*Port of Zeebrugge*".

⁵⁵ Unie van Redding- en Sleepdienst nv

The direct value added of the port of Zeebrugge was 7.3 % down against 2008 (-8.4 % by volume). Total value added, the sum of direct and indirect effects, declined by 5.3 %. As in previous years, direct and total value added represented 0.5 and 0.9 % respectively of Flemish GDP. In relation to Belgian GDP, the figures were 0.3 and 0.5 % respectively. These percentages are the same as in 2008.

Direct employment at the port of Zeebrugge was down by 3.8 % in 2009. Indirect employment dropped by 2.8 %. The proportion of direct employment in Flemish and Belgian employment has been unchanged for six years, at 0.5 % and 0.3 % respectively. In terms of total employment (direct and indirect), the respective proportions of Flemish and Belgian employment came to 1.1 % and 0.6 %, and have been stable for the past four years.

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

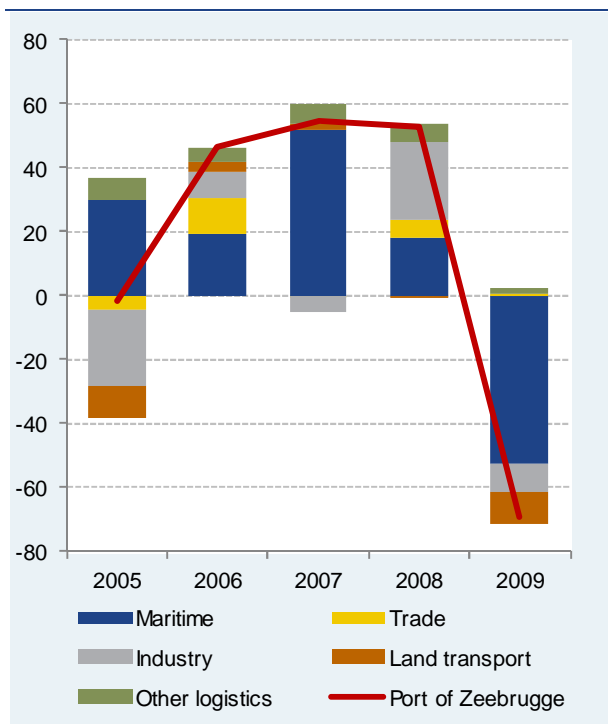
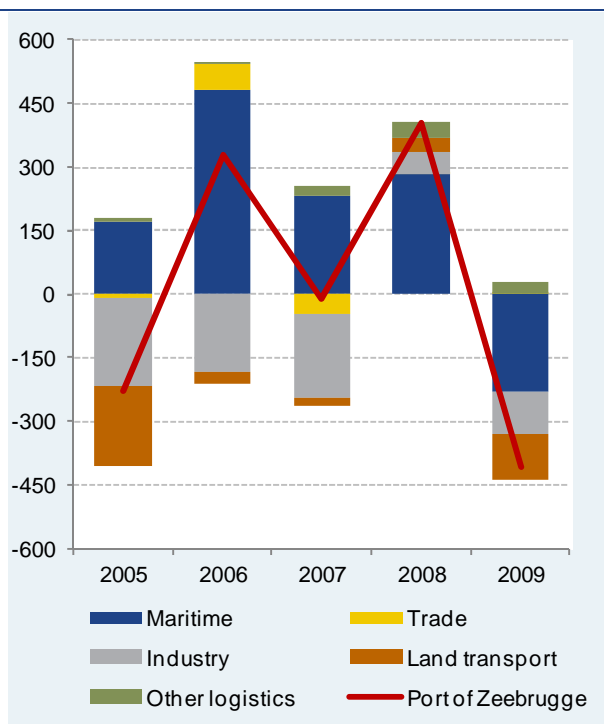


CHART 11 CHANGE IN DIRECT EMPLOYMENT
(FTE)



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

5.2 Value added

Value added in the port of Zeebrugge was down by 7.3 %. The decline was attributable to the maritime cluster, where value added was down by more than € 50 million. The biggest falls occurred in the shipping company, cargo handling and fishing segments, which were hit by the crisis and the reduction in volumes. In the non-maritime cluster, the picture varied from one sector to another. The trade sector stood up well and actually saw a small increase in its value added, as did other logistic services. In contrast, despite the good performance in the energy sector, value added declined in industry, and the same applied to land transport.

Highlights in the maritime cluster in 2009:

- Most shipping agents and forwarders achieved value added of less than or equal to the 2008 figure. The exceptions included Inter Ferry Boats and UECC Belgium.
- Most cargo handlers and related services had to contend with lower cargo volumes and fewer ships arriving. It was particularly the firms involved in the transshipment of cars that saw their value added decline.
- The value added of Sea-Ro Terminal fell significantly as a result of the sale of the activities at the Wielingendok to PSA Wielingen Zeebrugge.
- Cobelfret Ferries, as the biggest company, accounts for the large decline in the shipping company sector. The turnover of Cobelfret Ferries declined dramatically as a result of the reduced supply of transport and lower rates.

- The fishing sector was hit by the closure of a number of shippers and the operating loss at Seafood Incorporation⁵⁶.

Highlights in the non-maritime cluster in 2009:

- The growth of value added in the energy sector was due to Fluxys and Fluxys LNG. Entry into service of the new LNG plants in 2008 had a positive effect on the result. Modification of the fairway in Zeebrugge made the moorings accessible to larger LNG vessels. In 2009, 22 Q-Flex vessels moored. Q-Flex vessels have a capacity of 217,000 cubic metres of LNG. The maximum capacity of the LNG vessels used to be 155,000 cubic metres of LNG. In 2009 a total of 82 ships called at the Fluxys LNG terminal.
- The restructuring of Pemco Brugge had a negative impact on the value added of the chemical industry. Pemco Brugge specialises in the development, production and sale of enamel and related products. Those products are used mainly in industrial applications, such as the extrusion of steel tubes, and in the domestic appliances sector, such as boilers, ovens, pots and pans.
- In the metalworking industry, Werkhuizen Landuyt, a manufacturer of woodworking machinery, felt the impact of the crisis. Value added was down as a result of lower sales and profitability. As in many other firms, economy measures were implemented and use was made of the measures to combat the crisis.
- The markets in flat glass and windscreens, where AGC Flat Glass Europe operates, were affected by the economic crisis. Lower production volumes and sharp price cuts resulted in lower value added in the construction sector.
- At PBI Fruit Juice Company, part of the Pepsi group, sales were organised at group level from 2009. Since the operating income still consisted solely of production payments, turnover and operating results were down. As PBI Fruit Juice Company is the biggest company in the food industry, less value added was created in this sector.
- The value added of the other industries sector was almost halved by the closure of Walleyne Graphics (printing of manuals for large multinationals) and Uco Yarns (industrial spinning).
- The road transport sector was seriously affected in the crisis year of 2009. Carriers suffered from substantial excess capacity and low transport rates.

⁵⁶ Seafood Incorporation was declared bankrupt on 4 February 2011.

TABLE 32 VALUE ADDED AT THE PORT OF ZEEBRUGGE FROM 2004 TO 2009

(in € million - current prices)

Sectors	2004	2005	2006	2007	2008	2009	Share in 2009 (in p.c.)	Change from 2008 to 2009 (in p.c.)	Annual average change from 2004 to 2009 (in p.c.)
1. DIRECT EFFECTS	795.5	793.9	840.3	895.1	947.7	878.6	100.0	- 7.3	+ 2.0
MARITIME CLUSTER	305.4	335.5	354.7	406.7	425.1	372.7	42.4	- 12.3	+ 4.1
Shipping agents and forwarders	38.7	40.0	45.5	48.1	54.3	54.9	6.3	+ 1.2	+ 7.3
Cargo handling	120.2	128.4	140.2	172.2	178.6	161.0	18.3	- 9.8	+ 6.0
Shipping companies	10.3	25.8	22.5	32.6	43.5	11.0	1.3	- 74.8	+ 1.2
Shipbuilding and repair	7.7	7.8	8.4	8.4	8.7	8.7	1.0	- 0.8	+ 2.5
Port construction and dredging	12.4	11.1	11.2	13.3	14.3	14.5	1.7	+ 1.8	+ 3.2
Fishing	24.5	25.9	20.5	21.4	17.6	13.7	1.6	- 22.0	- 11.0
Port trade	0.5	0.4	0.4	0.5	0.6	0.6	0.1	+ 5.1	+ 2.5
Port authority	21.3	22.1	26.1	29.1	31.1	31.8	3.6	+ 2.1	+ 8.3
Public sector	69.8	73.8	79.9	81.1	76.4	76.5	8.7	+ 0.0	+ 1.9
<i>Allocation (p.m.)</i>	<i>16.9</i>	<i>16.2</i>	<i>12.1</i>	<i>12.0</i>	<i>12.8</i>	<i>11.8</i>	<i>-</i>	<i>- 7.8</i>	<i>- 7.0</i>
NON-MARITIME CLUSTER ...	490.0	458.4	485.6	488.4	522.6	506.0	57.6	- 3.2	+ 0.6
TRADE	64.9	60.4	72.0	71.8	77.3	78.1	8.9	+ 1.1	+ 3.8
INDUSTRY	278.1	254.6	262.3	257.5	282.1	272.7	31.0	- 3.3	- 0.4
Energy	63.6	56.6	56.3	53.0	80.1	95.0	10.8	+ 18.7	+ 8.4
Fuel production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Chemicals	26.0	23.6	27.2	28.9	28.3	26.2	3.0	- 7.3	+ 0.2
Car manufacturing	0.1	0.2	0.2	0.2	0.2	0.2	0.0	+ 10.0	+ 7.5
Electronics	83.7	77.8	89.9	74.7	71.8	71.9	8.2	+ 0.1	- 3.0
Metalworking industry	23.4	19.7	13.4	12.8	12.2	10.5	1.2	- 13.7	- 14.7
Construction	38.0	37.8	38.3	44.0	44.4	39.5	4.5	- 11.1	+ 0.8
Food industry	28.8	27.0	24.1	30.0	32.3	22.4	2.6	- 30.6	- 4.9
Other industries	14.6	11.8	12.9	14.0	12.8	6.9	0.8	- 45.7	- 13.8
LAND TRANSPORT	87.0	76.6	79.7	81.7	80.7	71.2	8.1	- 11.8	- 3.9
Road transport	68.6	63.2	65.0	68.2	63.8	54.7	6.2	- 14.2	- 4.4
Other land transport.....	18.4	13.3	14.7	13.5	16.9	16.4	1.9	- 2.8	- 2.3
OTHER LOGISTIC SERVICES	60.0	66.9	71.6	77.5	82.6	84.0	9.6	+ 1.7	+ 7.0
Other services	41.8	47.6	50.7	54.8	57.1	57.3	6.5	+ 0.4	+ 6.5
Public sector	18.1	19.4	21.0	22.6	25.5	26.6	3.0	+ 4.4	+ 8.0
2. INDIRECT EFFECTS	674.1	712.9	749.5	819.7	800.2	776.4	-	- 3.0	+ 2.9
MARITIME CLUSTER	309.1	371.5	389.6	452.9	419.4	387.3	-	- 7.7	+ 4.6
NON-MARITIME CLUSTER ...	365.1	341.4	359.9	366.8	380.8	389.1	-	+ 2.2	+ 1.3
TOTAL VALUE ADDED	1,469.6	1,506.8	1,589.8	1,714.8	1,747.9	1,655.1	-	- 5.3	+ 2.4

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

TABLE 33 VALUE ADDED TOP 10 AT THE PORT OF ZEEBRUGGE IN 2009

Ranking	Company name	Sector
1	BELGIAN NAVY	Public sector
2	PHILIPS INNOVATIVE APPLICATIONS	Electronics
3	FLUXYS LNG	Energy
4	ZEEBRUGGE PORT AUTHORITY	Port authority
5	CONTAINER HANDLING ZEEBRUGGE	Cargo handling
6	COMBINED TERMINAL OPERATORS	Cargo handling
7	PUBLIC ADMINISTRATION	Public sector
8	MARINE HARVEST PIETERS	Trade
9	SEA-RO TERMINAL	Cargo handling
10	FLUXYS	Energy

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

5.3 Employment

For the first time in six years, there was a fall in employment in the maritime cluster at the port of Zeebrugge. This decline was attributable mainly to the shipping agents and forwarders, cargo handling, and public sector sectors. In the non-maritime cluster, the trade sector was stable, while employment in other logistic services expanded by 2.3 %. There was a decline in employment in industry, with a steep fall in the other industries segment. Land transport was affected by the decline in the volume of freight.

Highlights in the maritime cluster in 2009:

- Only a few shipping agents and forwarders were able to expand their workforce. Most firms in this sector cut jobs.
- The number of dockers was down by over 5 %.
- The restructuring of Sea-Ro Terminal also affected employment in the cargo handling sector. PSA Wielingen Zeebrugge, which took over some of Sea-Ro Terminal's activities, took on fewer staff than the number leaving Sea-Ro Terminal.
- Dart Line closed its services from Ostend. In mid-2009 the Zeebrugge-Ipswich shipping line was launched⁵⁷. The operation of this new line increased the number of jobs in the shipping companies sector at the port of Zeebrugge.

Highlights in the non-maritime cluster in 2009:

- At Philips Innovative Applications in Bruges, a social plan was approved at the end of 2009 to provide assistance for the closure of the pilot production of television sets. Around 170 employees are to leave the electronics company.
- It was mainly the larger road transport firms that laid off staff.
- In the other land transport sector, it was the BNRC group that reduced its presence in the port of Zeebrugge.

⁵⁷ Dart Line closed down its Zeebrugge-Ipswich scheduled service on 1 March 2010.

TABLE 34 EMPLOYMENT AT THE PORT OF ZEEBRUGGE FROM 2004 TO 2009
(FTE)

Sectors	2004	2005	2006	2007	2008	2009	Share in 2009 (in p.c.)	Change from 2008 to 2009 (in p.c.)	Annual average change from 2004 to 2009 (in p.c.)
1. DIRECT EFFECTS	10,390	10,162	10,492	10,483	10,889	10,480	100.0	- 3.8	+ 0.2
MARITIME CLUSTER	4,110	4,281	4,761	4,994	5,276	5,048	48.2	- 4.3	+ 4.2
Shipping agents and forwarders	395	422	565	568	543	507	4.8	- 6.6	+ 5.1
Cargo handling	1,594	1,757	2,029	2,263	2,419	2,281	21.8	- 5.7	+ 7.4
Shipping companies	70	67	124	168	212	232	2.2	+ 9.7	+ 27.1
Shipbuilding and repair	148	148	140	141	136	140	1.3	+ 3.0	- 1.2
Port construction and dredging	170	167	171	176	195	186	1.8	- 4.5	+ 1.8
Fishing	400	359	293	264	238	211	2.0	- 11.0	- 12.0
Port trade	8	8	8	9	10	9	0.1	- 11.5	+ 2.1
Port authority	150	145	141	144	141	138	1.3	- 2.4	- 1.7
Public sector	1,175	1,207	1,291	1,261	1,384	1,344	12.8	- 2.9	+ 2.7
<i>Allocation (p.m.)</i>	<i>353</i>	<i>258</i>	<i>277</i>	<i>287</i>	<i>272</i>	<i>243</i>	<i>-</i>	<i>- 10.6</i>	<i>- 7.2</i>
NON-MARITIME CLUSTER	6,280	5,881	5,730	5,489	5,613	5,432	51.8	- 3.2	- 2.9
TRADE	949	940	1,000	953	956	957	9.1	+ 0.1	+ 0.2
INDUSTRY.....	2,752	2,545	2,361	2,163	2,213	2,111	20.1	- 4.6	- 5.2
Energy	132	124	118	117	122	123	1.2	+ 0.6	- 1.4
Fuel production	0	0	0	0	0	0	0.0	n.	n.
Chemicals	277	240	232	244	252	245	2.3	- 2.9	- 2.4
Car manufacturing	2	2	2	1	2	1	0.0	- 45.0	- 7.2
Electronics	882	765	769	565	571	552	5.3	- 3.3	- 8.9
Metalworking industry	351	325	205	181	181	172	1.6	- 4.9	- 13.3
Construction	496	501	443	453	478	485	4.6	+ 1.3	- 0.5
Food industry	343	347	352	349	350	346	3.3	- 1.2	+ 0.2
Other industries	270	240	242	252	257	188	1.8	- 27.0	- 7.0
LAND TRANSPORT	1,515	1,325	1,296	1,278	1,312	1,206	11.5	- 8.1	- 4.5
Road transport	1,190	1,047	998	993	1,018	948	9.0	- 6.8	- 4.4
Other land transport.....	326	277	298	285	294	258	2.5	- 12.5	- 4.6
OTHER LOGISTIC SERVICES	1,064	1,071	1,073	1,095	1,132	1,158	11.1	+ 2.3	+ 1.7
Other services	768	778	776	782	805	811	7.7	+ 0.8	+ 1.1
Public sector	296	294	297	313	327	347	3.3	+ 6.1	+ 3.2
2. INDIRECT EFFECTS	11,227	11,503	12,783	13,477	14,475	14,073	-	- 2.8	+ 4.6
MARITIME CLUSTER	5,733	6,286	7,663	8,493	9,248	8,731	-	- 5.6	+ 8.8
NON-MARITIME CLUSTER	5,494	5,217	5,121	4,984	5,227	5,342	-	+ 2.2	- 0.6
TOTAL EMPLOYMENT	21,617	21,665	23,275	23,960	25,364	24,552	-	- 3.2	+ 2.6

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

TABLE 35 EMPLOYMENT TOP 10 AT PORT OF ZEEBRUGGE IN 2009

Ranking	Company name	Sector
1	BELGIAN NAVY	Public sector
2	PHILIPS INNOVATIVE APPLICATIONS	Electronics
3	PUBLIC ADMINISTRATION	Public sector
4	MARINE HARVEST PIETERS	Trade
5	COMBINED TERMINAL OPERATORS	Cargo handling
6	SEA-RO TERMINAL	Cargo handling
7	CONTAINER HANDLING ZEEBRUGGE	Cargo handling
8	BNRC group	Other land transport
9	BELGIAN NEW FRUIT WHARF	Cargo handling
10	I.V.B.O.	Other services

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

5.4 Investment

Investment in the port of Zeebrugge was down by € 55 million in 2009. In the maritime cluster, the decline in the shipping agents and forwarders, shipbuilding and repair, and port authority segments was offset by investments in cargo handling. Overall, investment increased in this cluster, in contrast to the non-maritime cluster where investment declined by € 60 million. While investment doubled in the trade sector, it declined in the other three sectors. It fell particularly sharply in the energy and road transport sectors, and in the other services sector.

Highlights in the maritime cluster in 2009:

- Huktra and New Class Shipping were the biggest investors in the shipping agents and forwarders sector. Huktra reinvested in tank containers and a maintenance centre. Most firms in this sector invested less than last year.
- In the cargo handling sector, investment was attributable to Seabridge. This subsidiary of the Antwerp coffee trader, Efico, built a new European distribution centre for coffee in Zeebrugge.
- Other significant investors in the cargo handling sector were 2XL (purchase of trailers and installation of solar panels) and Wallenius Wilhelmsen Logistics Zeebrugge (Vehicle Processing Centre).
- The Zeebrugge Port Authority (MBZ) invested in wharfs, quays, a bridge in the inner harbour, a border inspection post for the Customs and the FAVV⁵⁸, and acquisition of a ro-ro terminal.

Highlights in the non-maritime cluster in 2009:

- Marine Harvest Pieters is the biggest investor in the trade sector. The fishing company is currently conducting an investment project worth € 10 million. Over a three-year period, the production area for the handling and packing of fresh fish will be expanded and new loading quays will be built.
- In the energy sector, the companies in the Fluxys group are still the biggest investors. Fluxys is planning a new capacity extension at the LNG terminal.
- The increase in the tangible fixed assets of PBI Fruit Juice Company consisted mainly of a new PET production line and completion of the new palletisation and production hall.
- Most road transport firms scaled down their investment. The biggest investors were D.D. Trans (rolling stock, truck wash and brake test bed) and North Sea Express.
- The Flemish Region's biggest investment project concerned the construction of the new quay in the Zuidelijk Insteekdok of the inner harbour.

⁵⁸ Federal Agency for the Safety of the Food Chain FASFC.

TABLE 36 INVESTMENT AT THE PORT OF ZEEBRUGGE FROM 2004 TO 2009

(in € million - current prices)

Sectors	2004	2005	2006	2007	2008	2009	Share in 2009 (in p.c.)	Change from 2008 to 2009 (in p.c.)	Annual average change from 2004 to 2009 (in p.c.)
MARITIME CLUSTER	65.6	274.1	163.2	171.8	95.3	100.6	50.0	+ 5.6	+ 8.9
Shipping agents and forwarders	14.5	11.4	10.1	8.2	7.2	4.9	2.4	- 31.3	- 19.5
Cargo handling	28.7	126.3	127.7	75.8	44.2	57.6	28.6	+ 30.4	+ 15.0
Shipping companies	3.2	122.6	10.3	60.6	2.0	1.9	0.9	- 5.8	- 10.0
Shipbuilding and repair	1.6	0.9	0.5	0.4	4.8	1.3	0.7	- 72.3	- 3.5
Port construction and dredging	1.5	1.0	1.4	1.9	2.2	2.1	1.1	- 0.7	+ 7.2
Fishing	4.2	2.3	1.5	3.3	4.5	5.3	2.6	+ 18.2	+ 4.8
Port trade	0.1	0.1	0.1	0.0	0.1	0.1	0.0	- 25.0	+ 5.7
Port authority	11.8	9.5	11.4	21.6	30.4	27.3	13.6	- 10.0	+ 18.3
Public sector	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
<i>Allocation (p.m.)</i>	<i>13.2</i>	<i>9.3</i>	<i>11.5</i>	<i>18.3</i>	<i>15.0</i>	<i>17.6</i>	<i>-</i>	<i>+ 17.1</i>	<i>+ 6.0</i>
NON-MARITIME CLUSTER	134.1	135.3	142.3	133.9	161.0	100.7	50.0	- 37.4	- 5.6
TRADE	7.4	7.6	11.1	5.1	6.3	12.7	6.3	+ 100.4	+ 11.5
INDUSTRY	65.6	76.1	91.5	62.7	79.5	46.8	23.3	- 41.1	- 6.5
Energy	30.6	49.1	61.1	34.7	38.2	16.1	8.0	- 57.9	- 12.1
Fuel production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Chemicals	4.2	3.5	2.0	2.9	3.3	1.5	0.8	- 54.0	- 18.3
Car manufacturing	0.0	0.0	0.0	0.1	0.1	0.0	0.0	- 100.0	n.
Electronics	14.1	10.0	12.1	4.5	7.6	5.9	2.9	- 22.1	- 16.0
Metalworking industry	1.2	1.6	1.6	3.4	1.2	1.0	0.5	- 11.9	- 3.7
Construction	4.1	3.9	6.2	6.7	7.6	5.8	2.9	- 23.6	+ 7.1
Food industry	8.6	7.0	6.1	8.6	19.1	15.5	7.7	- 18.8	+ 12.6
Other industries	2.8	1.1	2.3	1.7	2.5	1.0	0.5	- 60.7	- 18.9
LAND TRANSPORT	19.9	24.7	20.1	27.1	28.2	10.0	5.0	- 64.4	- 12.8
Road transport	17.8	20.1	14.2	21.1	25.6	8.8	4.4	- 65.5	- 13.2
Other land transport.....	2.1	4.5	5.9	6.0	2.6	1.2	0.6	- 53.4	- 10.1
OTHER LOGISTIC SERVICES	41.1	26.9	19.6	39.0	46.9	31.1	15.5	- 33.6	- 5.4
Other services	24.4	13.2	11.6	18.3	17.4	10.1	5.0	- 41.8	- 16.1
Public sector	16.7	13.7	8.0	20.7	29.5	21.0	10.4	- 28.8	+ 4.6
DIRECT INVESTMENT	199.6	409.4	305.5	305.7	256.3	201.3	100.0	- 21.4	+ 0.2

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

TABLE 37 INVESTMENT TOP 10 AT THE PORT OF ZEEBRUGGE IN 2009

Ranking	Company name	Sector
1	SEABRIDGE	Cargo handling
2	ZEEBRUGGE PORT AUTHORITY	Port authority
3	PUBLIC ADMINISTRATION	Public sector
4	P.B.I. FRUIT JUICE COMPANY	Food industry
5	FLUXYS	Energy
6	PHILIPS INNOVATIVE APPLICATIONS	Electronics
7	BELGIAN NEW FRUIT WHARF	Cargo handling
8	FLUXYS LNG	Energy
9	AGC GLASS EUROPE	Construction
10	MARINE HARVEST PIETERS	Trade

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

6 PORT OF LIÈGE

6.1 Port developments⁵⁹

Water transport through the autonomous port of Liège fell by 2.8 million tonnes in 2009, a decline of more than 17 %. Non-metallic mineral products, the principal category of goods transported by water through the Liège port, fell by 0.9 million tonnes, or 17 %. This was attributable to weaker shipping of building materials. A similar drop was seen in metals. Coal and lignite volumes fell by one-quarter, or a half million tonnes. Ore traffic plummeted by more than 80 %, from 2.8 million tonnes to 0.5 million. The closure of the last Liège furnace and the Chertal steel factory unquestionably left a mark on port traffic, with a collapse in imports of ore and coal and exports of metal products. Naturally, fewer maritime vessels called at the port (78, down from 160). But there are some bright spots among the bad news. The ancillary raw materials and waste sector more than doubled due to slags⁶⁰ imported and used in the cement industry. Agricultural products also posted strong growth, up 64 %, due to the start-up of Biowanze. Wood products, notably for the pellet-fired power plant in Awirs, experienced a 10 % surge in 2009, greater than that of ore.

The top three categories for cargo transported by water – non-metallic mineral products, coke and refined petroleum products; and ancillary raw materials and waste – represented 70 % of traffic in 2009.

The Port is gratified that because of past diversification efforts, the closure of large metalworking sites in Liège had only a limited impact on the port. Completion of the Triligiport platform will help diversify the port even further.

The port of Liège is trying to reduce its dependence on steel industry traffic, not only by diversifying the type of merchandise it handles, but also by capitalising on its geographic location and its strengths to become an inland maritime port for the North Sea ports. To this end, it has increased its contacts with the ports of Dunkirk, Rotterdam, Antwerp and Le Havre to expand its role in this area.

The Triligiport project is also a part of the Liège region's diversification and economic redeployment strategy. This multimodal platform aims to attract new companies, including European distribution centres, and thus new traffic. The facility's urban planning permit application for the platform, its access roads and rail links was filed in 2010. The Minister of Public Works is expected to make a decision on the permit in the second quarter of this year.

The decline in the direct value added of the Liège port complex came to 7.3 % for firms in the port, and 5.3 % taking all effects together (-8.4 and -6.4 % by volume). The contribution of direct and total value added to the GDP of the Walloon Region was down by 0.1 %, at 1.7 and 3.4 % respectively. In the past five years the percentages in relation to national GDP have remained stable at 0.4 % (direct) and 0.8 % (total).

Direct employment in the Liège port complex recorded a decline of 7.9 %. It represented 1.0 % of domestic employment in the Walloon Region, i.e. 0.1 % less than in 2008. Total employment represented 2.5 % of Walloon employment. In relation to employment in Belgium, the figures are unchanged at 0.3 % (direct employment) and 0.7 % (total employment).

⁵⁹ Sources: Lloyd Special Report *Annuaire du Port Autonome de Liège 2009-2010* and Press release 8 February 2010 from the Liège Port Authority.

⁶⁰ Slag is a partially vitrious by-product of smelting ore to separate the metal from the unwanted fraction.

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

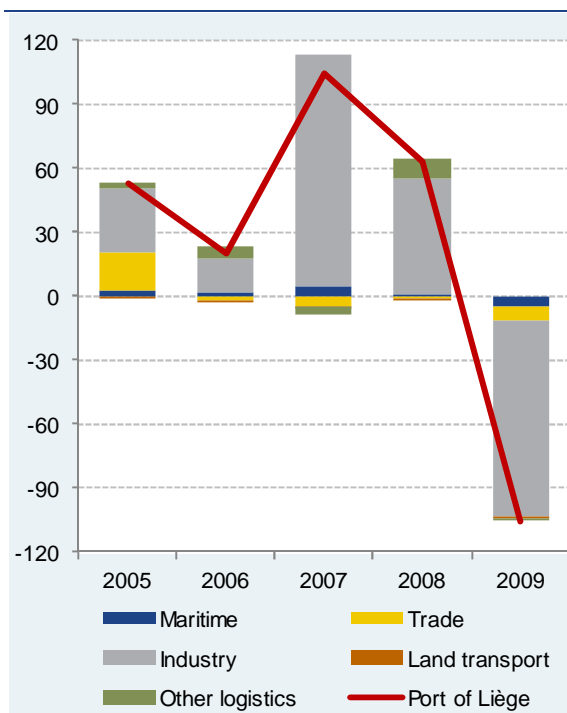
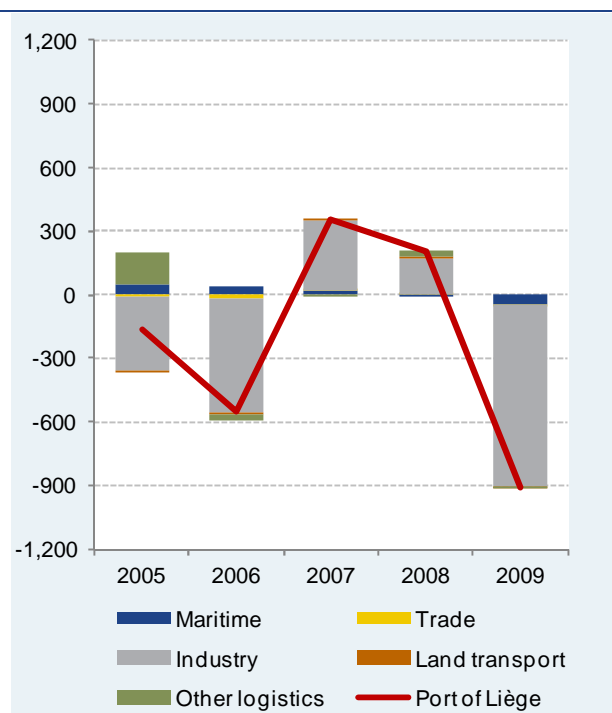


CHART 13 CHANGE IN DIRECT EMPLOYMENT
(FTE)



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

6.2 Value added

Value added was down in all segments of the maritime cluster at the port of Liège, except for the port authority. Overall, the value added of this cluster declined by 14.4 %. In the non-maritime cluster, all sectors were down, leading to a 7.1 % fall in value added. Trade was the sector recording the biggest decline, with an 8.4 % fall. Other logistic services suffered the least, with a reduction of 2.4 %. Between these two extremes, industry contracted by 7.3 % with a decline in the chemicals, fuel production and metalworking sectors, while land transport was 6.8 % down. The steel industry was at its lowest level for six years.

Highlights in the maritime cluster in 2009:

- Magetra saw a reduction in costs following the departure of some employees and the introduction of a time credit scheme.
- Magasins Généraux Manutention recorded a sharp fall in their gross operating margin and in their staff costs.
- SOMEF suffered a 64 % decline in turnover. It has experienced severe problems since the fourth quarter of 2008 as a result of the economic situation, especially the developments in the steel industry in the Liège basin and its dependence on its main customer, ArcelorMittal. The decline in turnover is due to the announcement by the ArcelorMittal group of the closure of furnace 6 at Seraing followed by furnace B at Ougrée. This reduction in activities began in September 2008 and continued during 2009.

TABLE 38 VALUE ADDED IN THE LIÈGE PORT COMPLEX FROM 2004 TO 2009

(in € million - current prices)

Sectors	2004	2005	2006	2007	2008	2009	Share in 2009 (in p.c.)	Change from 2008 to 2009 (in p.c.)	Annual average change from 2004 to 2009 (in p.c.)
1. DIRECT EFFECTS	1,203.7	1,256.5	1,276.7	1,381.1	1,444.4	1,338.9	100.0	- 7.3	+ 2.2
MARITIME CLUSTER	22.5	24.9	26.5	31.3	32.3	27.6	2.1	- 14.4	+ 4.2
Shipping agents and forwarders	5.5	5.5	6.7	8.5	8.1	7.6	0.6	- 5.8	+ 6.9
Cargo handling	11.6	12.6	13.2	15.4	15.9	14.1	1.1	- 10.9	+ 4.0
Shipping companies	3.1	4.3	4.1	4.5	5.7	3.4	0.3	- 40.7	+ 1.4
Shipbuilding and repair	0.6	0.6	0.5	0.6	0.6	0.4	0.0	- 29.6	- 5.2
Port construction and dredging	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Fishing	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	1.7	1.9	2.1	2.2	2.1	2.1	0.2	+ 2.2	+ 4.0
Public sector	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
NON-MARITIME CLUSTER	1,181.2	1,231.6	1,250.2	1,349.8	1,412.1	1,311.3	97.9	- 7.1	+ 2.1
TRADE	72.8	90.5	88.2	83.3	82.3	75.3	5.6	- 8.4	+ 0.7
INDUSTRY	1,060.4	1,090.5	1,106.6	1,215.0	1,269.2	1,177.1	87.9	- 7.3	+ 2.1
Energy	239.7	229.7	257.7	305.8	342.0	449.8	33.6	+ 31.5	+ 13.4
Fuel production	0.0	0.0	0.0	-2.7	-3.9	-10.7	-0.8	- 174.8	n.
Chemicals	99.2	110.1	100.9	104.8	192.4	61.0	4.6	- 68.3	- 9.3
Car manufacturing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	+ 0.5	n.
Electronics	5.1	6.3	6.3	3.0	3.9	2.7	0.2	- 30.4	- 11.8
Metalworking industry	526.3	558.0	509.1	601.3	512.0	461.3	34.5	- 9.9	- 2.6
Construction	150.0	142.9	192.6	161.1	171.3	172.1	12.9	+ 0.4	+ 2.8
Food industry	26.2	30.4	25.0	24.8	32.0	27.3	2.0	- 14.8	+ 0.8
Other industries	13.9	13.0	15.0	16.9	19.4	13.6	1.0	- 29.9	- 0.4
LAND TRANSPORT	8.1	7.4	6.4	6.4	6.3	5.9	0.4	- 6.8	- 6.0
Road transport	5.8	5.3	4.8	5.1	5.2	4.8	0.4	- 7.9	- 3.7
Other land transport.....	2.3	2.0	1.6	1.3	1.1	1.1	0.1	- 1.5	- 13.4
OTHER LOGISTIC SERVICES	40.0	43.2	48.9	45.2	54.3	53.0	4.0	- 2.4	+ 5.8
Other services	40.0	43.2	48.9	45.2	54.3	53.0	4.0	- 2.4	+ 5.8
Public sector	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
2. INDIRECT EFFECTS	1,061.1	1,144.7	1,151.2	1,265.7	1,400.4	1,355.7	-	- 3.2	+ 5.0
MARITIME CLUSTER	36.5	45.7	46.0	51.3	51.2	47.7	-	- 6.9	+ 5.5
NON-MARITIME CLUSTER	1,024.6	1,099.1	1,105.2	1,214.3	1,349.2	1,308.0	-	- 3.1	+ 5.0
TOTAL VALUE ADDED	2,264.8	2,401.3	2,427.9	2,646.8	2,844.8	2,694.6	-	- 5.3	+ 3.5

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

Highlights in the non-maritime cluster in 2009:

- Eagle Energy was unable to maintain the exceptionally strong results of 2008. Its gross operating margin and staff costs were down sharply.
- Terval recorded a steep decline in operating income.
- Intramet Metal Center suffered from the bad conditions on the market in stainless steel. At the end of May it gave up its special steel distribution activities.
- The increase in value added in the energy sector is due to Electrabel and S.P.E.
- Prayon's value added collapsed in 2009 to one-tenth of the 2008 figure. The first six months of 2009 saw an unprecedented decline in demand for Prayon products. In the second half of the year there was a gradual recovery.
- ArcelorMittal Liège Upstream plant saw a slowdown in its activities, notably on account of the closure of furnace 6 for the entire year, closure of the agglomeration plant, furnace B, the steel works and continuous casting from May onwards, the closure of the TLB-site⁶¹ from May to November, and the reduced rate of production at the coking plant.
- Oxycoupage had a particularly bad year in terms of both volumes and margins. The very sharp slowdown in activity which had begun in 2008 continued and actually worsened throughout 2009. The peeling activity had to be mothballed. In addition, selling prices plummeted.
- The other industries sector was hit by the bankruptcy of Alpha Gravure, Imprimerie Fortemps, and Alphagravic.
- George et Compagnie was affected by a sharp decline in volumes processed in both ferrous and non-ferrous metals.

TABLE 39 VALUE ADDED TOP 10 AT THE LIÈGE PORT COMPLEX IN 2009

Ranking	Company name	Sector
1	ELECTRABEL	Energy
2	ARCELORMITTAL BELGIUM	Metalworking industry
3	ARCELORMITTAL LIEGE UPSTREAM	Metalworking industry
4	S.P.E.	Energy
5	COCKERILL MAINTENANCE & INGENIERIE	Metalworking industry
6	CIMENTERIES CBR	Construction
7	CARRIERES ET FOURS A CHAUX DUMONT-WAUTIER	Construction
8	TOTAL BELGIUM	Trade
9	IMERYS MINERAUX BELGIQUE	Chemicals
10	INTRADEL	Other services

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

6.3 Employment

Direct employment in the Liège port complex was seriously affected by the decline in economic activity. Between 2008 and 2009 there was a 7.9 % fall. All sectors in the maritime cluster were in decline. Overall, this cluster recorded a 10.5 % fall. The non-maritime cluster was down by 7.8 %. While trade and other logistic services stood up relatively well, industry and land transport were hard hit. In industry, most of the decline (-8.4 %) was attributable to the metalworking industry, but electronics, food and other industries were also affected.

Highlights in the maritime cluster in 2009:

- Somef cut its staff by around 20 %. That was achieved by voluntary departures, redundancies for economic reasons in most cases, retirement and transfer to another group company.
- Magetra introduced time credit from 1 May, followed by crisis time credit.

⁶¹ Train à larges bandes

TABLE 40 EMPLOYMENT IN THE LIÈGE PORT COMPLEX FROM 2004 TO 2009
(FTE)

Sectors	2004	2005	2006	2007	2008	2009	Share in 2009 (in p.c.)	Change from 2008 to 2009 (in p.c.)	Annual average change from 2004 to 2009 (in p.c.)
1. DIRECT EFFECTS	11,729	11,568	11,016	11,375	11,581	10,670	100.0	- 7.9	- 1.9
MARITIME CLUSTER	313	361	401	418	415	371	3.5	- 10.5	+ 3.5
Shipping agents and forwarders	72	76	102	112	104	91	0.9	- 12.7	+ 4.8
Cargo handling	141	163	176	177	179	169	1.6	- 5.7	+ 3.7
Shipping companies	52	72	71	78	78	63	0.6	- 19.1	+ 4.1
Shipbuilding and repair	13	12	12	13	14	11	0.1	- 23.6	- 3.2
Port construction and dredging	0	0	0	0	0	0	0.0	n.	n.
Fishing	0	0	0	0	0	0	0.0	n.	n.
Port trade	0	0	0	0	0	0	0.0	n.	n.
Port authority	36	37	40	39	39	37	0.3	- 5.1	+ 0.5
Public sector	0	0	0	0	0	0	0.0	n.	n.
NON-MARITIME CLUSTER	11,415	11,207	10,615	10,957	11,166	10,298	96.5	- 7.8	- 2.0
TRADE	324	318	299	301	307	304	2.8	- 0.9	- 1.3
INDUSTRY	10,538	10,187	9,655	9,991	10,159	9,305	87.2	- 8.4	- 2.5
Energy	1,062	1,083	1,149	1,209	1,265	1,298	12.2	+ 2.6	+ 4.1
Fuel production	0	0	0	0	13	92	0.9	+ 590.2	n.
Chemicals	1,021	1,016	1,004	1,003	1,060	1,078	10.1	+ 1.8	+ 1.1
Car manufacturing	0	0	0	0	0	0	0.0	n.	n.
Electronics	74	83	92	89	73	62	0.6	- 15.5	- 3.4
Metalworking industry	6,639	6,260	5,765	6,035	6,128	5,208	48.8	- 15.0	- 4.7
Construction	1,347	1,371	1,283	1,278	1,245	1,245	11.7	- 0.0	- 1.6
Food industry	161	164	148	153	136	124	1.2	- 9.4	- 5.2
Other industries	232	212	215	223	239	199	1.9	- 16.9	- 3.1
LAND TRANSPORT	137	129	115	122	125	117	1.1	- 6.5	- 3.1
Road transport	98	93	90	99	106	99	0.9	- 6.8	+ 0.2
Other land transport.....	39	36	25	23	19	18	0.2	- 5.3	- 14.3
OTHER LOGISTIC SERVICES	417	573	545	543	575	573	5.4	- 0.4	+ 6.6
Other services	417	573	545	543	575	573	5.4	- 0.4	+ 6.6
Public sector	0	0	0	0	0	0	0.0	n.	n.
2. INDIRECT EFFECTS	16,590	16,276	16,239	17,039	17,155	16,001	-	- 6.7	- 0.7
MARITIME CLUSTER	617	766	822	863	860	716	-	- 16.7	+ 3.0
NON-MARITIME CLUSTER	15,973	15,510	15,417	16,176	16,295	15,285	-	- 6.2	- 0.9
TOTAL EMPLOYMENT	28,319	27,844	27,255	28,414	28,736	26,670	-	- 7.2	- 1.2

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

Highlights in the non-maritime cluster in 2009:

- Electrabel expanded its workforce at its Liège sites.
- To cope with the reduction in orders, CE+T introduced a system of economic lay-offs for blue-collar workers, and - from August 2009 – special crisis measures for white-collar workers, principally crisis time credit.
- Almost all firms in the metalworking industry reduced their staff. Obviously, the ArcelorMittal group was the biggest factor in that decline. In this group, various measures were taken to increase staff flexibility and adjust staff costs: economic lay-offs, time credit, time off in respect of overtime worked in the past, voluntary departures, mainly early retirement, shut-down periods for factories and offices, etc.
- BioWanze took on extra staff.
- In the other industries segment, the closure of Alpha Gravure, Imprimerie Fortemps, and Alphagravic due to bankruptcy had a negative impact on employment.
- Cuypers Logistics cut its workforce.
- TPF Utilities and Revatech reduced their staff as part of a cost-cutting exercise.

TABLE 41 EMPLOYMENT TOP 10 AT THE LIÈGE PORT COMPLEX IN 2009

Ranking	Company name	Sector
1	ARCELORMITTAL LIEGE UPSTREAM	Metalworking industry
2	ARCELORMITTAL BELGIUM	Metalworking industry
3	ELECTRABEL	Energy
4	COCKERILL MAINTENANCE & INGENIERIE	Metalworking industry
5	PRAYON	Chemicals
6	CIMENTERIES CBR	Construction
7	COFELY SERVICES	Construction
8	S.P.E.	Energy
9	INTRADEL	Other services
10	CARRIERES ET FOURS A CHAUX DUMONT-WAUTIER	Construction

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

6.4 Investment

Investment in the Liège port complex increased by 28.4 % in 2009, thanks to the other logistic services sector. In the maritime cluster, it was at its lowest level for six years, and the same applies to the shipping agents and forwarders and cargo handling segments. In the non-maritime cluster, investment in industry slumped, and declined sharply in transport. Conversely, it increased in trade, and particularly in other services.

Highlights in the non-maritime cluster in 2009:

- The three main investors in the maritime cluster in 2009 were Société Industrielle Renory, Petroleum Products Storage and Transport Company and CTB Magemon.

Highlights in the non-maritime cluster in 2009:

- In the chemicals sector, Prayon continued to invest, notably in the construction of a new sulphuric acid production plant called Sulfine.
- Electrabel carried out a periodic major overhaul at Tihange. It replaced the turbine rotors using technology which increases efficiency.
- In fuel production, construction of the BioWanze plant came to an end.
- In 2009, Intradel continued building the new energy recovery unit. It entered into industrial service in mid-2009.

TABLE 42 INVESTMENT IN THE LIÈGE PORT COMPLEX FROM 2004 TO 2009

(in € million - current prices)

Sectors	2004	2005	2006	2007	2008	2009	Share in 2009 (in p.c.)	Change from 2008 to 2009 (in p.c.)	Annual average change from 2004 to 2009 (in p.c.)
MARITIME CLUSTER	5.6	3.7	5.5	5.1	9.2	2.5	0.4	- 72.5	- 14.7
Shipping agents and forwarders	1.5	0.4	0.5	1.0	2.9	0.1	0.0	- 95.3	- 38.3
Cargo handling	3.3	2.6	4.1	3.0	4.6	2.1	0.4	- 53.5	- 8.6
Shipping companies	0.6	0.3	0.1	0.8	0.7	0.2	0.0	- 77.8	- 22.9
Shipbuilding and repair	0.1	0.0	0.1	0.1	0.1	0.0	0.0	- 82.6	- 30.7
Port construction and dredging	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Fishing	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	0.1	0.3	0.7	0.1	0.9	0.1	0.0	- 90.7	+ 3.6
Public sector	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
NON-MARITIME CLUSTER	136.9	136.9	153.1	336.8	427.5	558.2	99.6	+ 30.6	+ 32.5
TRADE	2.2	4.8	2.9	5.9	3.4	3.9	0.7	+ 12.6	+ 11.6
INDUSTRY	124.5	124.2	137.6	271.7	318.1	278.0	49.6	- 12.6	+ 17.4
Energy	11.2	19.9	36.7	55.5	41.5	131.0	23.4	+ 215.6	+ 63.6
Fuel production	0.0	0.0	11.8	91.1	142.8	51.8	9.2	- 63.7	n.
Chemicals	14.1	29.4	21.1	28.3	41.8	41.9	7.5	+ 0.1	+ 24.4
Car manufacturing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Electronics	0.2	0.6	0.9	0.6	0.5	0.3	0.1	- 38.1	+ 16.1
Metalworking industry	75.8	43.8	29.9	63.2	60.3	34.7	6.2	- 42.5	- 14.5
Construction	17.6	24.5	28.3	24.3	23.6	15.3	2.7	- 35.4	- 2.8
Food industry	3.2	2.9	3.4	4.7	4.2	1.5	0.3	- 62.8	- 13.6
Other industries	2.5	3.1	5.5	3.9	3.4	1.5	0.3	- 54.8	- 8.9
LAND TRANSPORT	2.5	1.8	1.3	1.4	3.3	0.9	0.2	- 73.5	- 19.0
Road transport	1.0	0.4	0.4	0.7	2.5	0.1	0.0	- 97.5	- 42.9
Other land transport.....	1.5	1.3	0.9	0.8	0.8	0.8	0.1	- 3.3	- 11.6
OTHER LOGISTIC SERVICES	7.7	6.2	11.3	57.8	102.6	275.5	49.1	+ 168.5	+ 104.5
Other services	7.7	6.2	11.3	57.8	102.6	275.5	49.1	+ 168.5	+ 104.5
Public sector	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
DIRECT INVESTMENT	142.5	140.6	158.7	341.9	436.6	560.8	100.0	+ 28.4	+ 31.5

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

TABLE 43 INVESTMENT TOP 10 IN THE LIÈGE PORT COMPLEX IN 2009

Ranking	Company name	Sector
1	INTRADEL	Other services
2	S.P.E.	Energy
3	ELECTRABEL	Energy
4	BIOWANZE	Fuel production
5	PRAYON	Chemicals
6	ARCELORMITTAL BELGIUM	Metalworking industry
7	ARCELORMITTAL LIEGE UPSTREAM	Metalworking industry
8	CARMEUSE	Construction
9	CIMENTERIES CBR	Construction
10	CARRIERES ET FOURS A CHAUX DUMONT-WAUTIER	Construction

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

7 PORT OF BRUSSELS

7.1 Port developments

The port of Brussels saw a sharp decrease in transport by water of its own traffic in 2009. Whereas transshipped volumes reached nearly 4.9 million tonnes in 2008, they fell back to 4 million tonnes in 2009, an 18 % drop. Building materials, which represented 55 % of traffic in 2009, suffered from both the economic slowdown and bad weather in January 2009, and fell 21 %. Petroleum products, which rank second in the breakdown of the own traffic between product categories, benefited from cold winter weather and limited their decline to 6 %. Together, these two categories represent more than 80 % of traffic. The transshipment of agricultural and food products shrank by more than one-fifth.

The container terminal, which had posted strong growth over the previous four years, was also hit by the crisis in 2009. The slump hurt trade with China and the USA, among others. All in all, container traffic in TEU fell by nearly one-quarter, from 17,900 to 13,500 TEU. Activity remains above what it was in 2006 but is well below the 2007 level.

The Netherlands confirmed its position as the privileged partner of the port of Brussels: just under 57 % of cargo loaded and unloaded came from or was destined for our northern neighbours. Trade with Germany was down, whereas trade with France rose slightly. Trade with Russia and the UK was reduced to a bare minimum.

The Port was pleased that there were no bankruptcies or closures among the companies operating in the port. It attributes the resilience to a series of measures taken to alleviate pressures on companies already forced to deal with weakening economic conditions.

Clean-up of soil on the Carcoke site continued throughout 2009 and was completed at the end of the year. Polluted soil was removed and transported by boat to a thermal treatment centre. Construction on the road bypassing the site continues and the treatment of underground water will not be completed for several years.

In January 2010 the government of the Brussels-Capital Region announced that the objections of several associations against the environmental permit granted to S.A. BILC had been upheld. The Brussels International Logistic Centre was intended to be a new logistic centre close to the existing TIR centre. The latter is old and a new, more modern warehouse offering more space would make it possible to meet companies' expectations. Abandoning the project revives the controversy over building a new logistic centre in the heart of the capital.

A regular weekly service between the ports of Brussels and Zeebrugge was also launched. This line, designed for containers, is intended to complement the existing line between the ports of Brussels and Antwerp.

The direct value added of the port of Brussels was up by 0.3 % in 2009. The direct value added represented 0.9 % of the GDP of the Brussels Capital Region, or 0.1 % less than the previous year. Similarly, the share of the total value added – direct plus indirect effects – in the GDP of the Brussels Region was down by 0.1 % at 1.8 % Expressed as a percentage of national GDP, direct and total value added came to 0.2 and 0.4 % respectively.

Employment in the port of Brussels declined by 2.2 % in 2009 against 2008. In 2009, direct and total employment respectively represented 0.8 and 1.8 % of employment in the Brussels Region. The share of Belgian domestic employment remained unchanged at 0.1 % for direct and 0.3 % for total employment.

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

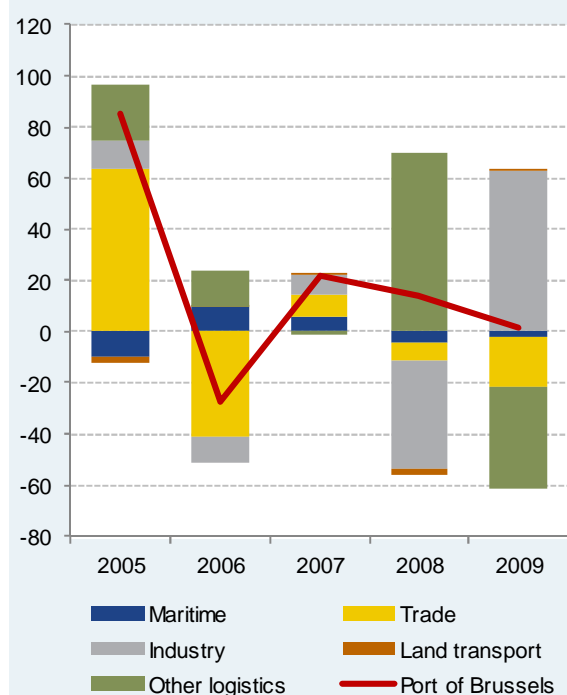
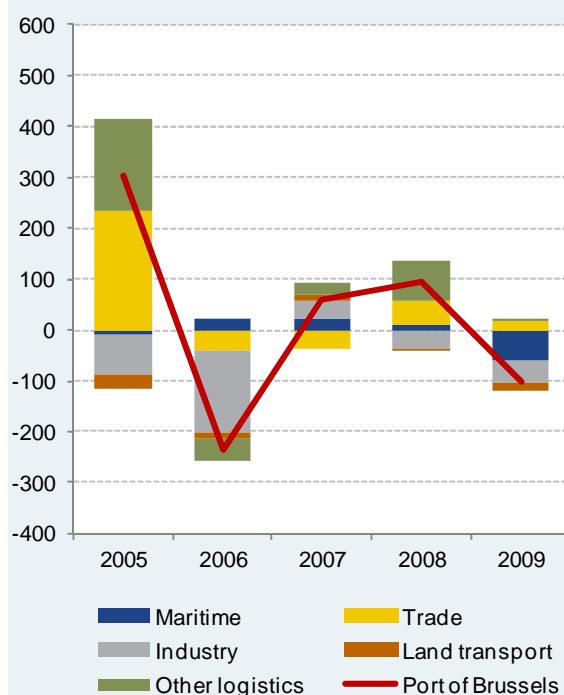


CHART 15 CHANGE IN DIRECT EMPLOYMENT
(FTE)



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

7.2 Value added

The direct value added of the port of Brussels remained stable between 2008 and 2009. It held up relatively well in a number of maritime cluster segments, but in the cargo handling and shipping company segments it was almost halved. Overall, the cluster's value added was down by 7.8 %. However, in the non-maritime cluster, it increased by 0.6 %. The trade sector reverted to figures close to the 2004 level after a 7.8 % contraction. Conversely, the industrial sector enjoyed exceptional expansion of 38 %. That growth was due mainly to chemicals which, after particularly low value added in 2008, recovered to levels close to those of 2007 and previous years. The value added of the land transport sector remained steady, in contrast to that of other logistic services which slumped by 27.1 %.

Highlights in the maritime cluster in 2009:

- Almost all firms in the shipping agents and forwarders sector saw a decline in value added as a result of the economic crisis. One exception was Reibel, which secured a big transport contract from the United Nations.
- TRW specialised in the management of combined transport wagons of the BNRC freight group and transferred its activities to Inter Ferry Boats at the port of Antwerp.
- Hanzevast Carisbrooke Shipping I, as the issuer of ships' certificates, had to contend with the decline in freight rates. Turnover and operating results were much lower than expected.
- The value added of the Brussels port authority recorded a significant increase as a result of the reduction in the goods and services item. In 2008 a substantial sum was recorded for dredging work and for cleaning up the Carcoke site.

TABLE 44 VALUE ADDED AT THE PORT OF BRUSSELS FROM 2004 TO 2009

(in € million - current prices)

Sectors	2004	2005	2006	2007	2008	2009	Share in 2009 (in p.c.)	Change from 2008 to 2009 (in p.c.)	Annual average change from 2004 to 2009 (in p.c.)
1. DIRECT EFFECTS	517.7	602.5	575.4	597.6	611.8	613.4	100.0	+ 0.3	+ 3.5
MARITIME CLUSTER	21.4	11.3	21.0	26.5	21.8	20.1	3.3	- 7.8	- 1.2
Shipping agents and forwarders	7.4	9.7	9.9	9.9	11.8	11.3	1.8	- 4.7	+ 8.7
Cargo handling	7.6	6.5	7.4	11.0	10.0	5.6	0.9	- 44.4	- 5.9
Shipping companies	0.0	0.0	0.0	0.0	1.5	0.8	0.1	- 47.4	n.
Shipbuilding and repair	0.0	0.0	0.1	0.1	0.1	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Port trade	2.6	0.8	0.7	0.6	0.6	0.7	0.1	+ 7.7	- 23.2
Port authority	3.8	-5.7	2.9	4.9	-2.3	1.8	0.3	n.	- 14.4
Public sector	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
NON-MARITIME CLUSTER	496.3	591.2	554.4	571.1	590.0	593.2	96.7	+ 0.6	+ 3.6
TRADE	231.0	294.9	253.9	262.9	256.1	236.1	38.5	- 7.8	+ 0.4
INDUSTRY	198.7	209.8	199.6	207.8	165.5	228.4	37.2	+ 38.0	+ 2.8
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	140.1	141.4	127.4	138.1	85.8	149.7	24.4	+ 74.5	+ 1.3
Car manufacturing	10.6	13.1	16.5	17.1	18.2	14.8	2.4	- 18.8	+ 6.9
Electronics	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Metalworking industry	0.7	1.1	0.9	1.2	1.0	1.0	0.2	+ 2.2	+ 7.0
Construction	28.9	29.8	33.9	35.7	36.1	34.7	5.7	- 4.0	+ 3.7
Food industry	13.8	19.4	14.9	8.8	15.4	21.5	3.5	+ 40.4	+ 9.3
Other industries	4.6	4.9	5.9	7.1	9.1	6.7	1.1	- 26.4	+ 7.8
LAND TRANSPORT	24.2	22.4	22.7	23.4	21.2	21.4	3.5	+ 1.2	- 2.4
Road transport	23.6	21.7	22.1	22.8	20.7	21.1	3.4	+ 1.8	- 2.2
Other land transport.....	0.6	0.7	0.6	0.6	0.4	0.3	0.1	- 23.5	- 11.7
OTHER LOGISTIC SERVICES	42.4	64.2	78.2	77.1	147.1	107.3	17.5	- 27.1	+ 20.4
Other services	38.4	60.2	74.0	72.7	143.4	103.4	16.9	- 27.9	+ 21.9
Public sector	4.0	4.0	4.2	4.4	3.7	3.9	0.6	+ 3.9	- 0.3
2. INDIRECT EFFECTS	495.8	566.4	546.0	565.2	584.3	600.6	-	+ 2.8	+ 3.9
MARITIME CLUSTER	34.3	26.0	41.2	55.6	40.4	41.1	-	+ 1.6	+ 3.7
NON-MARITIME CLUSTER	461.5	540.4	504.8	509.6	543.8	559.4	-	+ 2.9	+ 3.9
TOTAL VALUE ADDED	1,013.5	1,168.9	1,121.4	1,162.7	1,196.0	1,213.9	-	+ 1.5	+ 3.7

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

Highlights in the non-maritime cluster in 2009:

- In the trade sector, several major companies accounted for the decline. The turnover of Duferco Special Steels (Europe), a distributor of special steels, slumped as a result of a decline in sales and lower selling prices, owing to the economic crisis, though another reason was that a big supplier closed down. The volume of sales was also down at Ineos Sales Belgium and Solvin. Belgian Shell's turnover was adversely affected by the big price fluctuations on the international oil markets.
- The chemicals firm, Solvay, also recorded lower turnover, but succeeded in improving its operating result by cutting costs.
- The crisis had a serious impact on car manufacturing. Inergy Automotive Systems Research cut its research efforts and concentrated on activities generating a quicker return.
- Although Ceres produced fewer flowers and selling prices were down, value added increased on account of the "other operating expenses" item.
- George et Cie saw a steep decline in the volumes handled in the case of both ferrous and non-ferrous metals. Prices fluctuated widely throughout the year, sales to steel factories were very difficult because of low consumption levels and regular closures.
- The Brussels North sewage treatment plant operated by Aquiris was shut down for a time during 2009 owing to the presence of excess sand and debris in the installations. Aquiris saw its operating income halved. The value added of the other services sector fell by roughly the same amount.

TABLE 45 VALUE ADDED TOP 10 AT THE PORT OF BRUSSELS IN 2009

Ranking	Company name	Sector
1	SOLVAY	Chemicals
2	BELGIAN SHELL	Trade
3	TOTAL BELGIUM	Trade
4	INEOS SERVICES BELGIUM	Other services
5	AQUIRIS	Other services
6	SPIE BELGIUM	Construction
7	CERES	Food industry
8	BRUXELLES ENERGIE	Other services
9	INERGY AUTOMOTIVE SYSTEMS RESEARCH	Car manufacturing
10	SITA RECYCLING SERVICES	Other services

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

7.3 Employment⁶²

Employment in the port of Brussels was down by 2.2 % in 2009. The maritime cluster was affected the most, with a 12.5 % fall. The cargo handling segment lost almost a third of its workers. The non-maritime cluster suffered less, with a 1 % fall in employment. The trade sector recorded a 1.2 % increase. In contrast, industry saw a decline, with a fairly marked fall in chemicals, and the same applied to land transport. Employment was stable in other logistic services.

Highlights in the maritime cluster in 2009:

- The workforce of firms in the shipping agents and forwarders sector stagnated or declined.
- TRW's combined transport activities were transferred to Inter Ferry Boats at the port of Antwerp. Job losses due to the departure of TRW are the main factor in the decline in employment in the cargo handling segment.

⁶² For the calculation of the employment figures data from the annual accounts and the results of the enquiries done by the "Observatoire bruxellois du marché du travail et des qualifications" for the study "*Poids socio-économique des entreprises implantées sur le site du port de Bruxelles*" (2010) were used.

TABLE 46 EMPLOYMENT AT THE PORT OF BRUSSELS FROM 2004 TO 2009
(FTE)

Sectors	2004	2005	2006	2007	2008	2009	Share in 2009 (in p.c.)	Change from 2008 to 2009 (in p.c.)	Annual average change from 2004 to 2009 (in p.c.)
1. DIRECT EFFECTS	4,442	4,743	4,509	4,567	4,662	4,559	100.0	- 2.2	+ 0.5
MARITIME CLUSTER	428	416	437	458	470	411	9.0	- 12.5	- 0.8
Shipping agents and forwarders	152	166	166	164	169	156	3.4	- 7.9	+ 0.4
Cargo handling	137	131	137	163	171	116	2.5	- 32.4	- 3.3
Shipping companies	0	0	0	0	1	5	0.1	+ 475.0	n.
Shipbuilding and repair	0	0	3	3	2	0	0.0	- 100.0	n.
Port construction and dredging	0	0	0	0	0	0	0.0	n.	n.
Fishing	0	0	0	0	0	0	0.0	n.	n.
Port trade	22	6	6	6	5	5	0.1	+ 0.0	- 24.1
Port authority	117	114	124	123	122	130	2.9	+ 6.4	+ 2.2
Public sector	0	0	0	0	0	0	0.0	n.	n.
NON-MARITIME CLUSTER	4,014	4,327	4,072	4,109	4,191	4,148	91.0	- 1.0	+ 0.7
TRADE	1,150	1,386	1,346	1,311	1,356	1,373	30.1	+ 1.2	+ 3.6
INDUSTRY	1,919	1,842	1,678	1,716	1,678	1,632	35.8	- 2.7	- 3.2
Energy	0	0	0	0	0	0	0.0	n.	n.
Fuel production	0	0	0	0	0	0	0.0	n.	n.
Chemicals	1,078	996	802	815	785	738	16.2	- 6.0	- 7.3
Car manufacturing	39	44	47	50	56	54	1.2	- 3.4	+ 6.6
Electronics	0	0	0	0	0	0	0.0	n.	n.
Metalworking industry	17	17	18	18	18	18	0.4	+ 3.7	+ 1.9
Construction	514	524	553	579	572	575	12.6	+ 0.6	+ 2.3
Food industry	207	186	182	162	150	151	3.3	+ 0.8	- 6.1
Other industries	64	73	77	92	98	96	2.1	- 2.0	+ 8.4
LAND TRANSPORT	393	367	356	368	366	350	7.7	- 4.4	- 2.3
Road transport	377	350	342	357	356	338	7.4	- 5.2	- 2.2
Other land transport.....	16	17	14	12	10	12	0.3	+ 26.0	- 5.2
OTHER LOGISTIC SERVICES	552	733	691	714	791	793	17.4	+ 0.2	+ 7.5
Other services	452	633	591	614	709	711	15.6	+ 0.3	+ 9.5
Public sector	100	100	100	100	82	82	1.8	+ 0.0	- 3.9
2. INDIRECT EFFECTS	6,311	6,765	6,043	6,147	6,373	5,937	-	- 6.8	- 1.2
MARITIME CLUSTER	715	795	785	836	864	773	-	- 10.5	+ 1.6
NON-MARITIME CLUSTER	5,596	5,970	5,259	5,310	5,509	5,164	-	- 6.3	- 1.6
TOTAL EMPLOYMENT	10,753	11,508	10,552	10,714	11,034	10,496	-	- 4.9	- 0.5

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

Highlights in the non-maritime cluster in 2009:

- Employment in the trade sector expanded because Diamond Europe, the catering trade wholesaler, transferred its offices to the port area in order to start using its logistics centre.
- Chemicals were dominated by the Solvay group. Solvay cut its workforce at the Neder-Over-Heembeek site. Solvay is to make further job cuts under a 2010 restructuring plan. Peptisyntha, part of the Solvay group, restructured its activities following the loss of its biggest customer, and consequently made many of its staff redundant.
- The transport firm, Ziegler, adjusted its workforce in line with the lower transport volumes due to the economic crisis.

TABLE 47 EMPLOYMENT TOP 10 AT THE PORT OF BRUSSELS IN 2009

Ranking	Company name	Sector
1	SOLVAY	Chemicals
2	SPIE BELGIUM	Construction
3	SCANIA BELGIUM	Trade
4	INEOS SERVICES BELGIUM	Other services
5	SITA RECYCLING SERVICES	Other services
6	CERES	Food industry
7	BRUSSELS PORT AUTHORITY	Port authority
8	ZIEGLER	Road transport
9	SOLVIN	Trade
10	PUBLIC ADMINISTRATION	Public sector

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

7.4 Investment

Investment in the port of Brussels was down by 25 % in the maritime cluster and 29.7 % in the non-maritime cluster. In the maritime cluster, all segments saw a fall. In the non-maritime cluster, only the trade sector recorded an increase; in the other sectors, investment collapsed. The food industry replaced chemicals as the biggest investor in the industrial sector, where investment was down by 26 % in one year. Nevertheless, that figure is still higher than the levels recorded in land transport (-75.3 %) and in other services (-65.5 %).

Highlights in the maritime cluster in 2009:

- Reibel was the biggest investor in the shipping agents and forwarders sector. The forwarding company plans to build a new logistics centre at the port.
- The relocation of TRW and halting of the Brussels International Logistics Center project meant the loss of the biggest investors in the cargo handling sector.
- The Brussels port authority is the biggest investor in the port area. The clean-up of the polluted Carcoke site continued in 2009. Renovation of the Anderlecht and Molenbeek locks began in 2009. One major project concerns the construction of a passenger terminal in the outer port.

Highlights in the non-maritime cluster in 2009:

- In the trade sector, the biggest investors were Havelange and Diamond Europe. Havelange, a firm hiring out lift trucks and other cargo handling and storage machinery, expanded its stock of equipment for hire. Diamond Europe brought its new logistics centre into use.
- The confectionery manufacturer, Sebahat, accounted for almost all the investment in the food industry in 2009. At the end of 2007 the production hall and storage area were destroyed by fire. In 2009, the firm inaugurated its new warehouses at the site of the Brussels port.
- Practically all transport firms cut back their investment.
- There were no new major investment projects in the other services sector either. The biggest investors were Sita Recycling Services, Loxam and Seamar.

TABLE 48 INVESTMENT AT THE PORT OF BRUSSELS FROM 2004 TO 2009

(in € million - current prices)

Sectors	2004	2005	2006	2007	2008	2009	Share in 2009 (in p.c.)	Change from 2008 to 2009 (in p.c.)	Annual average change from 2004 to 2009 (in p.c.)
MARITIME CLUSTER	7.4	6.1	5.7	7.0	18.8	14.1	25.0	- 25.0	+ 13.8
Shipping agents and forwarders	1.0	1.2	0.8	0.6	0.9	0.6	1.1	- 31.1	- 8.1
Cargo handling	3.3	0.4	0.8	0.8	2.0	0.2	0.4	- 89.4	- 42.0
Shipping companies	0.0	0.0	0.2	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Port trade	1.5	0.0	0.1	0.1	0.0	0.0	0.0	n.	- 58.1
Port authority	1.7	4.5	3.8	5.5	15.8	13.2	23.4	- 16.5	+ 51.4
Public sector	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
NON-MARITIME CLUSTER	123.4	71.7	88.6	53.8	60.2	42.3	75.0	- 29.7	- 19.3
TRADE	13.0	22.7	28.6	19.0	22.5	23.1	40.9	+ 2.4	+ 12.1
INDUSTRY	17.1	17.7	16.7	14.7	17.0	12.6	22.3	- 26.0	- 5.9
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	6.4	6.8	6.1	6.1	8.5	3.8	6.8	- 54.9	- 9.9
Car manufacturing	0.8	2.3	3.1	2.5	0.4	0.2	0.3	- 58.5	- 25.9
Electronics	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
Metalworking industry	0.0	0.1	0.1	0.2	0.2	0.1	0.2	- 29.7	+ 33.6
Construction	2.1	2.7	2.6	3.7	3.6	3.1	5.5	- 13.5	+ 8.0
Food industry	6.9	4.1	3.6	1.2	0.7	4.3	7.7	+ 520.5	- 9.0
Other industries	0.7	1.7	1.2	1.0	3.6	1.0	1.8	- 72.0	+ 6.3
LAND TRANSPORT	3.1	2.4	1.8	1.9	4.6	1.1	2.0	- 75.3	- 18.3
Road transport	3.1	2.3	1.8	1.9	4.6	0.9	1.6	- 80.1	- 21.6
Other land transport.....	0.0	0.1	0.0	0.0	0.0	0.2	0.4	n.	+ 43.4
OTHER LOGISTIC SERVICES	90.1	28.9	41.4	18.3	16.1	5.6	9.9	- 65.5	- 42.7
Other services	90.1	28.9	41.4	18.3	16.1	5.6	9.9	- 65.5	- 42.7
Public sector	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.	n.
DIRECT INVESTMENT	130.8	77.7	94.3	60.8	79.0	56.4	100.0	- 28.6	- 15.5

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

TABLE 49 INVESTMENT TOP 10 AT THE PORT OF BRUSSELS IN 2009

Ranking	Company name	Sector
1	BRUSSELS PORT AUTHORITY	Port authority
2	SEBAHAT	Food industry
3	HAVELANGE	Trade
4	SOLVAY	Chemicals
5	MACIMMO	Trade
6	DIAMOND EUROPE	Trade
7	LOXAM	Other services
8	SITA RECYCLING SERVICES	Other services
9	VAN WAASDIJK	Trade
10	DUFERCO SPECIAL STEELS (EUROPE)	Trade

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

8 SUMMARY

Owing to the global economic crisis which led to a marked decline in international trade, traffic at the Belgian ports was down by practically 15 % in 2009. Subsequently, during 2010 there was a revival in traffic. The decline affected a broad range of types of maritime transport. For example, in container traffic only the port of Zeebrugge recorded growth. The port of Antwerp, where container traffic is well represented, lost almost 14 % of its traffic⁶³. In the case of ro/ro traffic, the decline in the Flemish ports amounted to just over 27 %. Ostend was the worst affected, losing two-fifths of its traffic. Conventional freight traffic was maintained at Ostend and Zeebrugge but declined sharply at Ghent and Antwerp. Liquid bulk is the only type of cargo to record growth. It remained stable at Antwerp, declined at Ghent and increased strongly at Zeebrugge. Conversely, dry bulk was down at all the Flemish ports, but the biggest fall was at Antwerp: -36 %. Taking all Flemish ports together, dry bulk was down by 32 %. Traffic at the Liège port complex recorded a 20 % decline, the figure being greatly affected by the reduction in transport of building materials and products related to the steel industry. Traffic at the port of Brussels was 18 % down, with the construction sector again accounting for part of the decline.

CHART 16 CHANGE IN DIRECT VALUE ADDED
(in € million, by volume)

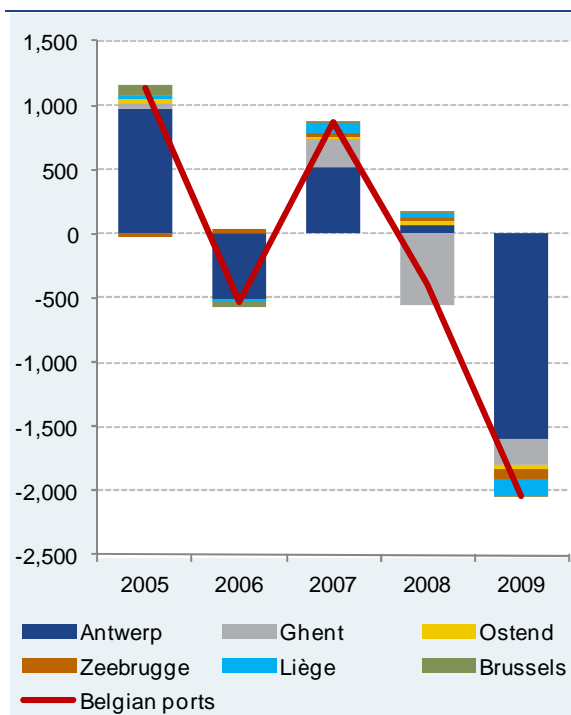
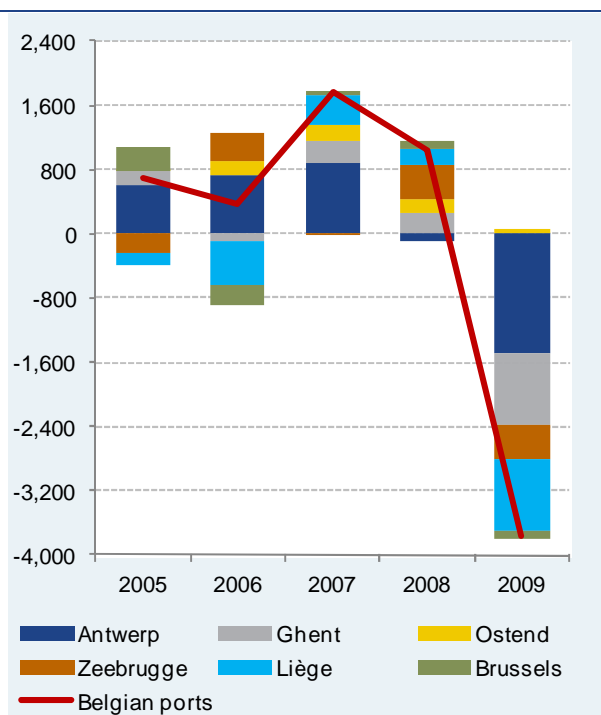


CHART 17 CHANGE IN DIRECT EMPLOYMENT
(FTE)



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

After a year of stagnation, the value added produced by the Belgian ports displayed a clear downward trend. The maritime cluster lost over 28 %, mainly in the case of shipping companies and cargo handling, but other activities also contributed to this decline. In the non-maritime cluster, industry and trade had recorded a reduction in their value added in 2008, and the decline persisted in 2009. Nevertheless, the fall was weaker for industry, a sector where value added had already contracted sharply in 2008. Fuel production, car manufacturing and metalworking industry recorded the biggest falls. In contrast, energy is continuing to expand, and chemicals recovered slightly. Road transport also suffered from the reduction in transport volumes. Value added was also down in other services.

The value added of the port of Brussels remained stable, supported mainly by the recovery of the chemical industry. The other five ports recorded a reduction in value added at current prices ranging

⁶³ Traffic expressed in tonnes, not TEU.

between 4.2 % at Ostend and 14.8 % at Antwerp. However, this is consistent with the picture for the national economy, where gross domestic product exceptionally declined in 2009⁶⁴. Overall, the value added of the non-maritime cluster was down by just under 4 %, and direct value added fell by 11 % altogether.

In the light of the decline in value added at the ports, one might fear the worst for employment. However, job losses in the firms located at the ports came to only 3 %. Shipping agents and forwarders and cargo handling were the main segments accounting for the decline in the maritime cluster. In the non-maritime cluster, it was industry that recorded the sharpest fall. There was a slump in employment in car manufacturing and metalworking industry. Chemicals and other industries also contracted, but to a much lesser extent. In trade and land transport, there was little change in employment, whereas the public sector recorded an increase.

Looking at employment in each port, Ostend was the only one to create jobs. The ports of Brussels, Antwerp, Ghent and Zeebrugge saw employment decline by between 2 and 4 %. The Liège port complex was more seriously affected, with job losses amounting to practically 8 %.

Once again, the conclusion is that the Belgian ports are following the trend for Belgium as a whole. However, being country's key entry and exit points for international trade, they are particularly affected by the global crisis.

Investment in the Belgian ports declined in 2009. That is hardly surprising in a period of scarce credit and an economic recession. In the maritime cluster, practically all activities saw a reduction. Overall, investment in this cluster was down by 19 %. In the non-maritime cluster, investment increased in other logistic services. Conversely, in land transport it was almost halved. Investment in the industry was 21 % down. Energy was the only industrial sector with growth. The trade segment contracted by 17 %.

Looking at the individual ports, investment in the Liège port complex expanded following strong growth in other services. At all the other ports, investment declined by an amount ranging between 15 % at the port of Ghent and 37 % at the port of Ostend.

⁶⁴ Publication of the indicators for Belgium on 1 June 2011 indicates that the volume of GDP declined by 2.7 % in 2009. See the website of the National Bank of Belgium (www.nbb.be).

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
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

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

ANNEX 1: DETAILED SOCIAL BALANCE SHEET IN 2009

TABLE 50 DETAILED SOCIAL BALANCE SHEET OF THE BELGIAN PORTS - 2009

Sectors	AVERAGE NUMBER OF EMPLOYEES										At the enterprise's disposal				
	Number		Hours actually worked (1)		Personnel costs (2)		Hired temporary staff		costs		hours		costs		
	full-time	part-time	total	full-time	part-time	total	full-time	part-time	total	full-time	part-time	total	full-time	part-time	total
	1001	1002	1003	1011	1012	1013	1021	1022	1023	1501	1511	1502	1512	1522	
MARITIME CLUSTER	26,622	2,470	28,418	38.7	2.6	41.3	1,517.4	107.5	1,624.9	1,639	3,715	6,650	14,06	471.4	
Shipping agents and forwarders	5,856	1,149	6,693	9.4	1.3	10.7	348.7	51.2	399.9	426	0.81	18.8	465	27.8	
Cargo handling	15,122	951	15,818	19.7	0.9	20.5	774.2	37.7	811.9	1,122	2.17	66.5	6,167	442.6	
Shipping companies	1,004	85	1,064	2.4	0.1	2.5	77.5	5.6	83.1	6	0.01	0.4	0	0.0	
Shipbuilding and repair	650	70	698	1.0	0.1	1.1	36.6	2.4	39.0	25	0.05	1.4	5	0.3	
Port construction and dredging	1,570	87	1,634	2.8	0.1	2.9	122.1	5.0	127.1	20	0.04	1.2	0	0.0	
Fishing	249	29	272	0.3	0.0	0.4	10.3	1.1	11.4	20	0.04	0.9	0	0.0	
Port trade	105	11	114	0.2	0.0	0.2	7.2	0.5	7.7	5	0.01	0.2	0	0.0	
Port authority	2,066	89	2,126	3.0	0.1	3.1	140.8	4.0	144.9	14	0.02	0.7	12	0.7	
Public sector	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.
NON-MARITIME CLUSTER	67,239	7,288	72,553	97.1	8.4	105.5	4,849.8	395.9	5,230.6	1,916	3,62	105.2	537	37.7	
TRADE	4,914	716	5,423	7.8	0.8	8.6	355.0	32.0	387.0	303	0.59	15.5	98	7.6	
INDUSTRY	52,045	4,794	55,538	73.0	5.6	78.7	3,893.1	290.0	4,167.9	1,231	2.32	71.1	192	15.8	
Energy	2,726	216	2,881	4.0	0.2	4.2	275.7	17.6	293.3	39	0.08	2.0	0	0.0	
Fuel production	2,602	305	2,830	4.2	0.4	4.6	365.4	30.2	381.6	25	0.05	1.9	1	0.4	
Chemicals	13,516	1,560	14,612	19.6	1.8	21.4	1,260.5	114.8	1,375.3	203	0.36	13.4	3	0.6	
Car manufacturing	11,545	1,033	12,311	15.0	1.1	16.0	618.6	44.2	662.8	406	0.76	21.6	3	0.3	
Electronics	1,181	214	1,338	1.7	0.2	2.0	84.6	10.1	94.7	29	0.06	1.6	0	0.0	
Metalworking industry	14,032	870	14,693	18.7	1.3	20.0	903.8	47.9	951.6	138	0.27	10.1	89	8.3	
Construction	3,582	267	3,777	5.4	0.4	5.9	205.1	12.2	216.1	93	0.18	6.0	3	0.2	
Food industry	1,488	187	1,621	2.3	0.2	2.5	95.9	7.7	103.5	187	0.36	8.9	88	5.7	
Other industries	1,373	142	1,475	2.0	0.1	2.2	83.6	5.4	89.0	109	0.21	5.6	4	0.3	
LAND TRANSPORT	5,192	829	5,835	8.1	1.0	9.1	261.3	35.2	296.5	128	0.24	6.0	102	5.3	
Road transport	2,962	216	3,116	4.9	0.2	5.1	137.9	7.8	145.7	124	0.23	5.8	101	5.2	
Other land transport	2,230	613	2,719	3.2	0.7	3.9	123.4	27.4	150.9	4	0.01	0.2	1	0.1	
OTHER LOGISTIC SERVICES	5,087	948	5,756	8.1	1.0	9.2	340.3	38.7	379.1	254	0.48	12.6	145	8.9	
Other services	5,087	948	5,756	8.1	1.0	9.2	340.3	38.7	379.1	254	0.48	12.6	145	8.9	
Public sector	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.
TOTAL	93,861	9,758	100,971	135.8	11.1	146.9	6,367.2	503.4	6,855.5	3,555	6,77	195.3	7,187	509.1	

Source: NBB.

TABLE 50 (continued) DETAILED SOCIAL BALANCE SHEET OF THE BELGIAN PORTS - 2009

Sectors	NUMBER OF PERSONS EMPLOYED AT THE END OF THE YEAR														
	Number				Men				Women						
	full-time	part-time	total (in FTE)	1201	1202	1203	1211	1212	1213	total (in FTE)	White-collar	Blue-collar	primary	secondary	higher university
MARITIME CLUSTER	25,942	2,375	27,673	21,508	859	22,123	4,435	1,516	5,550	11,745	15,453	6,293	12,043	2,595	1,128
Shipping agents and forwarders	5,649	1,118	6,463	3,482	222	3,640	2,167	895	2,823	5,634	752	300	2,093	967	235
Cargo handling	14,777	896	15,437	13,260	483	13,614	1,517	413	1,823	3,413	11,889	5,397	7,013	861	329
Shipping companies	960	83	1,018	798	17	809	162	66	209	551	344	152	359	189	109
Shipbuilding and repair	631	66	676	609	57	648	22	9	28	126	549	81	501	59	7
Port construction and dredging	1,583	89	1,649	1,447	32	1,469	137	57	180	748	896	253	416	412	388
Fishing	171	28	193	127	7	132	44	22	61	70	114	34	65	23	6
Port trade	96	11	104	72	3	74	24	8	30	78	24	2	40	23	10
Port authority	2,074	84	2,132	1,712	38	1,736	362	46	396	1,126	885	75	1,555	61	45
Public sector	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.
NON-MARITIME CLUSTER	65,211	7,184	70,428	57,241	3,763	59,983	7,973	3,423	10,446	29,750	37,927	8,328	35,762	10,611	5,077
TRADE	4,759	721	5,270	3,643	238	3,807	1,117	481	1,464	3,253	1,859	296	2,146	865	398
INDUSTRY	50,395	4,660	53,779	44,822	2,630	46,724	5,573	2,035	7,055	20,992	30,445	5,075	29,455	8,151	3,942
Energy	2,649	260	2,847	2,024	74	2,080	625	186	767	1,949	0	23	830	646	581
Fuel production	2,675	308	2,905	2,329	191	2,470	346	117	434	2,318	524	131	870	891	578
Chemicals	13,288	1,585	14,414	12,000	944	12,664	1,289	641	1,750	7,507	6,023	693	7,776	2,968	1,227
Car manufacturing	11,270	919	11,925	9,949	615	10,393	1,320	301	1,532	1,997	9,735	1,594	7,511	986	253
Electronics	1,117	194	1,259	898	86	961	219	108	298	507	742	175	528	198	60
Metalworking industry	13,095	785	13,685	11,993	427	12,316	1,102	358	1,369	4,545	8,962	1,669	8,036	1,641	971
Construction	3,489	275	3,692	3,279	150	3,387	210	125	304	1,198	2,442	519	2,148	533	136
Food industry	1,459	193	1,597	1,197	76	1,250	263	124	347	580	973	133	844	172	102
Other industries	1,353	142	1,455	1,154	66	1,202	199	76	253	391	1,044	138	914	117	33
LAND TRANSPORT	5,071	836	5,722	4,614	608	5,097	458	228	625	1,786	3,832	2,216	2,393	352	137
Road transport	2,841	220	3,000	2,591	103	2,665	250	118	335	655	2,298	1,056	1,490	102	17
Other land transport	2,230	616	2,723	2,022	506	2,432	208	110	291	1,131	1,534	1,160	903	249	120
OTHER LOGISTIC SERVICES	4,986	967	5,657	4,162	288	4,355	825	679	1,302	3,719	1,791	741	1,768	1,243	600
Other services	4,986	967	5,657	4,162	288	4,355	825	679	1,302	3,719	1,791	741	1,768	1,243	600
Public sector	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.
TOTAL	91,154	9,559	98,101	78,749	4,623	82,106	12,408	4,939	15,996	41,495	53,380	14,621	47,805	13,206	6,205

Source: NBB.

TABLE 50 (continued) DETAILED SOCIAL BALANCE SHEET OF THE BELGIAN PORTS - 2009

Sectors	NUMBER OF PERSONS EMPLOYED						TRAINING			ENTERED			RESIGNED		
	primary	Women		Men	Women	costs (2)	number	hours (1)	costs (2)	number (in FTE)	Indefinite period	Number (in FTE)	Indefinite period	Number (in FTE)	Indefinite period
		secondary	higher												
12103	12113	12123	12133	5801	5802	5803	5811	5812	5813	2053	2103	3053	3103		
MARITIME CLUSTER	655	3,504	1,246	337	7,020	14.5	2,201	0.06	2.9	4,777	3,312	6,162	4,686		
Shipping agents and forwarders	140	1,817	699	148	1,393	0.8	951	0.02	0.6	991	774	1,570	1,368		
Cargo handling	478	1,142	323	93	3,456	9.6	772	0.03	1.5	1,863	1,534	2,585	2,255		
Shipping companies	7	84	85	33	222	0.4	92	0.00	0.2	878	96	935	123		
Shipbuilding and repair	3	18	7	0	137	0.2	5	0.00	0.0	82	70	126	111		
Port construction and dredging	2	74	68	37	1,137	2.9	136	0.00	0.4	781	691	783	688		
Fishing	15	34	9	2	75	0.0	42	0.00	0.0	30	28	17	16		
Port trade	0	9	16	5	11	0.0	1	0.00	0.0	18	15	27	24		
Port authority	10	326	41	20	589	0.5	202	0.00	0.2	134	104	119	100		
Public sector	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.		
NON-MARITIME CLUSTER	578	4,574	3,624	1,643	39,072	83.2	6,456	0.20	11.9	7,446	4,916	11,826	8,643		
TRADE	69	772	446	158	1,673	2.3	810	0.02	0.9	950	720	1,044	797		
INDUSTRY	358	2,924	2,542	1,223	32,932	68.8	4,807	0.15	9.5	4,241	2,793	8,238	6,141		
Energy	2	178	381	206	1,835	10.8	782	0.03	2.7	281	167	281	186		
Fuel production	2	48	230	155	2,134	11.1	262	0.01	1.2	331	261	209	178		
Chemicals	36	461	853	400	10,688	20.1	1,439	0.04	2.8	686	423	1,340	1,081		
Car manufacturing	179	931	319	99	5,455	9.8	892	0.04	1.4	601	325	1,656	1,037		
Electronics	50	178	47	24	310	0.3	60	0.00	0.1	80	68	223	197		
Metalworking industry	47	634	425	263	9,432	13.0	979	0.02	1.0	1,168	755	3,329	2,561		
Construction	6	118	142	34	1,820	2.0	140	0.00	0.2	608	538	663	592		
Food industry	25	215	82	25	713	0.7	127	0.00	0.1	271	150	271	150		
Other industries	11	162	63	18	545	1.1	126	0.00	0.1	214	106	266	159		
LAND TRANSPORT	119	325	126	55	2,626	9.5	288	0.02	0.7	1,012	658	1,181	829		
Road transport	79	172	68	16	543	0.6	132	0.01	0.1	744	503	921	680		
Other land transport	40	152	58	39	2,083	8.9	156	0.01	0.6	267	155	260	148		
OTHER LOGISTIC SERVICES	33	553	510	207	1,841	2.6	551	0.01	0.8	1,243	744	1,363	876		
Other services	33	553	510	207	1,841	2.6	551	0.01	0.8	1,243	744	1,363	876		
Public sector	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.		
TOTAL	1,233	8,078	4,869	1,981	46,092	97.8	8,657	0.26	14.8	12,223	8,228	17,988	13,329		

Source: NBB.

- (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 ⁶⁵

TABLE 51 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.
09A	09900	IN	AI	*						Support activities for other mining and quarrying
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
21A	21201	IN	CH	*						Manufacture of medicines
22A	22110	IN	CH	*						Manufacture of rubber tyres and tubes; retreating and rebuilding of rubber tyres
22A	22190	IN	CH	*	*		*			Manufacture of other rubber products
22B	22210	IN	CH	*				*		Manufacture of plastic plates, sheets, tubes and profiles
22B	22220	IN	CH	*	*			*		Manufacture of plastic packing goods
22B	22290	IN	CH		*	*	*	*	*	Manufacture of other plastic products
23A	23110	IN	CS		*		*			Manufacture of flat glass
23A	23120	IN	CS		*		*		*	Shaping and processing of flat glass
23B	23322	IN	CS					*		Manufacture of tiles and construction products, in baked clay

⁶⁵ The nomenclature in this list is in accordance with the NACE-Bel revision having taken place in 2008 (Rev.2).

TABLE 51 (continued) LIST OF NACE-BEL BRANCHES (NACE-BEL 2008)

SUT	NACE-BEL	Cluster	Sector	AN	GN	OO	ZB	LG	BR	Definition
23C	23510	IN	CS	*	*			*	*	Manufacture of cement
23C	23520	IN	CS					*		Manufacture of lime and plaster
23D	23610	IN	CS		*		*	*		Manufacture of concrete products for construction purposes
23D	23620	IN	CS	*						Manufacture of plaster products for construction purposes
23D	23630	IN	CS	*	*	*	*	*	*	Manufacture of ready-mixed concrete
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	ME					*		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	28291	IN	ME					*		Manufacture of packing-machines
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	AI	*	*			*		Manufacture of other parts and accessories for motor vehicles
30A	30110	IN	AI	*		*				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	AU	*			*			Repair of fabricated metal products
33A	33120	LO	AD	*	*			*		Repair of machinery
33A	33150	MA	SB	*	*	*	*	*	*	Repair and maintenance of ships and boats
33A	33170	IN	AI	*						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	LO	AD	*					*	Sewerage
38A	38110	LO	AD					*		Collection of non-hazardous waste
38A	38219	LO	AD	*	*	*	*	*	*	Other processing and disposal of non-hazardous waste
38B	38310	IN	AI					*	*	Dismantling of wrecks

TABLE 51 (continued) LIST OF NACE-BEL BRANCHES (NACE-BEL 2008)

SUT	NACE-BEL	Cluster	Sector	AN	GN	OO	ZB	LG	BR	Definition
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	LO	AD	*			*			Remediation activities and other waste management services
41A	41102	LO	AD	*	*	*	*			Non-residential development projects
41A	41203	IN	CS	*				*		Construction of other non-residential buildings
42A	42110	IN	CS	*	*	*	*	*	*	Construction of roads and motorways
42A	42130	IN	CS		*	*				Construction of bridges and tunnels
42A	42211	LO	AD		*					Construction of water and gas supply networks
42A	42219	LO	AD	*						Civil engineering works relating to fluids n.e.c.
42A	42220	IN	CS	*						Construction of utility projects for electricity and telecommunications
42A	42911	MA	CS	*	*	*	*			Dredging
42A	42919	MA	CS	*		*	*			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 (≤ 3,5 ton)
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 (> 3,5 ton)
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

TABLE 51 (continued) LIST OF NACE-BEL BRANCHES (NACE-BEL 2008)

SUT	NACE-BEL	Cluster	Sector	AN	GN	OO	ZB	LG	BR	Definition
46A	46694	CO	CO	*					*	Wholesale trade in lifting and transport equipment
46A	46695	CO	CO	*			*			Wholesale trade in pumps and compressors
46A	46699	CO	CO	*	*	*	*	*	*	Wholesale of other machinery and equipment n.e.c
46B	46710	CO	CO	*	*	*	*	*	*	Wholesale of solid, liquid and gaseous fuels and related products
46A	46720	CO	CO	*	*		*	*	*	Wholesale of metals and metal ores
46A	46731	CO	CO	*	*	*	*	*	*	Wholesale of construction materials, general assortment
46A	46732	CO	CO	*	*	*		*	*	Wholesale of wood
46A	46733	CO	CO						*	Wholesale trade in wallpapers, paints and household textiles
46A	46741	CO	CO	*	*		*			Wholesale of hardware
46A	46751	CO	CO	*	*	*	*	*	*	Wholesale of industrial chemical products
46A	46769	CO	CO	*	*		*			Wholesale trade in other intermediate products n.e.c.
46A	46772	CO	CO		*		*	*	*	Wholesale trade in iron and steel scrap and non-ferrous scrap metals
46A	46900	MA	CO	*	*	*	*		*	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
49B	49390	TR	TP	*	*	*	*			Other passenger land transport n.e.c.
49C	49410	TR	WE	*	*	*	*	*	*	Freight transport by road, except removal
49C	49420	TR	TP	*					*	Removal services
49C	49500	TR	TP	*			*			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	TP	*			*		*	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	MA	RE	*	*	*	*		*	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

TABLE 51 (continued) LIST OF NACE-BEL BRANCHES (NACE-BEL 2008)

SUT	NACE-BEL	Cluster	Sector	AN	GN	OO	ZB	LG	BR	Definition
81B	81210	LO	AD	*			*			General cleaning of buildings
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
94A	94110	LO	AD	*	*	*				Activities of business and employers membership organisations

Source: BNB.

The asteriks denote the presence of the activity branches in the ports for at least one year over the period 2004 - 2009. 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 2004 and 2009, while the branch 29100 (Manufacture of motor vehicles) was only present in Antwerp and Ghent.

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
		CS	Port construction and dredging
		VI	Fishing
		CO	Port trade
		HB	Port authority
		PU	Public sector
CO	Trade	CO	Trade
IN	Industrie	EN	Energy
		PE	Fuel production
		CH	Chemicals
		AU	Car manufacturing
		MP	Electronics
		ME	Metalworking industry
		CS	Construction
		VO	Food industry
		AI	Other industries
TP	Land transport	WE	Road transport
		TP	Other land transport
LO	Other logistic services	AD	Other services
		PU	Public sector

BIBLIOGRAPHY

AG Haven Oostende (2010), *Jaarverslag 2009*, Ostend.

Amerini G., *European port activity in 2009 hit by the general economic crisis*, December 2010, Eurostat, Statistics in Focus 65/2010, Luxembourg.

Amerini G., *Maritime transport of goods - 4th quarter 2009*, November 2010, Eurostat, Data in Focus 44/2010, Luxembourg.

DPVNI, *Promotion des voies navigables et de l'intermodalité, les infos 2010*, SPW, Liège

Duisburger Hafen AG, Press Release, *Duisport investments confirm strategy of sustainability*, February 2010, Duisburg.

European Union, the European Parliament and of the Council, *REGULATION (EC) No 1893/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 20 December 2006 establishing the statistical classification of economic activities NACE Revision 2 and amending Council Regulation (EEC) No 3037/90 as well as certain EC Regulations on specific statistical domains*, Official Journal of the European Union, 30 December 2006, Luxembourg.

Heuse P., Zimmer H. (2010), *The 2009 social balance sheet*, BNB, Economic review, December 2010, Brussels.

Gemeentelijk Havenbedrijf Antwerpen (2010), *Jaarverslag 2009*, Antwerp.

Havenbedrijf Gent GAB (2010), *Jaarverslag 2009*, Ghent.

Havenbedrijf Rotterdam (2010), *Jaarverslag 2009*, Rotterdam, Netherlands.

Institute of National Accounts, *Input-Output Tables for Belgium. 2000 and 2005*, Federal Planning Bureau, Brussels.

Institute of National Accounts, *National accounts. Supply and use tables 2004, 2005 and updated data*, Brussels.

Institute of National Accounts (2010), *Regional accounts 2000 - 2009*, Brussels.

Institute of National Accounts (2010), *National accounts. Part 2 - Detailed accounts and tables 2000 - 2009*, Brussels.

International Monetary Fund (2010). European Dept. *Regional Economic Outlook: Europe--Building Confidence*, October 2010, IMF, Washington DC (USA).

International Monetary Fund (2011), *World Economic Outlook (April 2011)*, IMF, Washington DC (USA).

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

Le Lloyd, newspaper articles between 2008 and 2010, Antwerp.

Le Lloyd (2009), *Lloyd Special Report - Yearbook Liège Port Authority 2009-2010*, Antwerp.

Maatschappij Linkerscheldoever (2010), *Jaarverslag 2009*, Beveren.

Maatschappij van de Brugse Zeevaartinrichtingen (2010), *Jaarverslag 2009*, Zeebrugge.

- Merckx J.-P., D. Neyts, Vlaamse Havencommissie (2010), *Jaaroverzicht Vlaamse havens 2009*, SERV Brussels.
- NBB (2011), *Annual Report 2010 - Economic and financial developments*, NBB, Brussels.
- NBB, Central Balance Sheet Office, Annual accounts submitted to the Central Balance Sheet Office, from 2004 to 2009, Brussels.
- NBB, General Statistics Department, *Belgostat - Online Database*, Brussels.
- Observatoire bruxellois du Marché du Travail et des Qualifications (2010), *Poids socio-économique des entreprises implantées sur le site du port de Bruxelles*, November 2010, Brussels.
- Port of Brussels (2010), *Rapport annuel 2009*, Brussels.
- Port of Hamburg (2010), *Annual Port of Hamburg Press Conference 2010*, Hafen Hamburg, Germany.
- United Nations Conference on Trade and Development (2010), *Review of Maritime Transport 2010*, UNCTAD New York and Geneva.
- Vennix S. (2008), *Economic importance of the Belgian ports: Flemish maritime ports, Liège port complex and the port of Brussels – Report 2006*, NBB, Working Paper n°134 (Document series), Brussels.
- Vivet D. (2010), *Results and financial structure of firms in 2009*, NBB, Economic review, December 2010, Brussels.
- World Trade Organization (2010), *Trade to expand by 9.5 % in 2010 after a dismal 2009*, WTO reports, March 2010, Geneva.

NATIONAL BANK OF BELGIUM - WORKING PAPERS SERIES

1. "Model-based inflation forecasts and monetary policy rules", by M. Dombrecht and R. Wouters, *Research Series*, February 2000.
2. "The use of robust estimators as measures of core inflation", by L. Aucremanne, *Research Series*, February 2000.
3. "Performances économiques des Etats-Unis dans les années nonante", by A. Nyssens, P. Butzen and P. Bisciari, *Document Series*, March 2000.
4. "A model with explicit expectations for Belgium", by P. Jeanfils, *Research Series*, March 2000.
5. "Growth in an open economy: Some recent developments", by S. Turnovsky, *Research Series*, May 2000.
6. "Knowledge, technology and economic growth: An OECD perspective", by I. Visco, A. Bassanini and S. Scarpetta, *Research Series*, May 2000.
7. "Fiscal policy and growth in the context of European integration", by P. Masson, *Research Series*, May 2000.
8. "Economic growth and the labour market: Europe's challenge", by C. Wyplosz, *Research Series*, May 2000.
9. "The role of the exchange rate in economic growth: A euro-zone perspective", by R. MacDonald, *Research Series*, May 2000.
10. "Monetary union and economic growth", by J. Vickers, *Research Series*, May 2000.
11. "Politique monétaire et prix des actifs: le cas des États-Unis", by Q. Wibaut, *Document Series*, August 2000.
12. "The Belgian industrial confidence indicator: Leading indicator of economic activity in the euro area?", by J.-J. Vanhaelen, L. Dresse and J. De Mulder, *Document Series*, November 2000.
13. "Le financement des entreprises par capital-risque", by C. Rigo, *Document Series*, February 2001.
14. "La nouvelle économie" by P. Bisciari, *Document Series*, March 2001.
15. "De kostprijen van bankkredieten", by A. Bruggeman and R. Wouters, *Document Series*, April 2001.
16. "A guided tour of the world of rational expectations models and optimal policies", by Ph. Jeanfils, *Research Series*, May 2001.
17. "Attractive prices and euro - Rounding effects on inflation", by L. Aucremanne and D. Cornille, *Documents Series*, November 2001.
18. "The interest rate and credit channels in Belgium: An investigation with micro-level firm data", by P. Butzen, C. Fuss and Ph. Vermeulen, *Research series*, December 2001.
19. "Openness, imperfect exchange rate pass-through and monetary policy", by F. Smets and R. Wouters, *Research series*, March 2002.
20. "Inflation, relative prices and nominal rigidities", by L. Aucremanne, G. Brys, M. Hubert, P. J. Rousseeuw and A. Struyf, *Research series*, April 2002.
21. "Lifting the burden: Fundamental tax reform and economic growth", by D. Jorgenson, *Research series*, May 2002.
22. "What do we know about investment under uncertainty?", by L. Trigeorgis, *Research series*, May 2002.
23. "Investment, uncertainty and irreversibility: Evidence from Belgian accounting data" by D. Cassimon, P.-J. Engelen, H. Meersman and M. Van Wouwe, *Research series*, May 2002.
24. "The impact of uncertainty on investment plans", by P. Butzen, C. Fuss and Ph. Vermeulen, *Research series*, May 2002.
25. "Investment, protection, ownership, and the cost of capital", by Ch. P. Himmelberg, R. G. Hubbard and I. Love, *Research series*, May 2002.
26. "Finance, uncertainty and investment: Assessing the gains and losses of a generalised non-linear structural approach using Belgian panel data", by M. Gérard and F. Verschueren, *Research series*, May 2002.
27. "Capital structure, firm liquidity and growth", by R. Anderson, *Research series*, May 2002.
28. "Structural modelling of investment and financial constraints: Where do we stand?", by J.-B. Chatelain, *Research series*, May 2002.
29. "Financing and investment interdependencies in unquoted Belgian companies: The role of venture capital", by S. Manigart, K. Baeyens, I. Verschueren, *Research series*, May 2002.
30. "Development path and capital structure of Belgian biotechnology firms", by V. Bastin, A. Corhay, G. Hübner and P.-A. Michel, *Research series*, May 2002.
31. "Governance as a source of managerial discipline", by J. Franks, *Research series*, May 2002.
32. "Financing constraints, fixed capital and R&D investment decisions of Belgian firms", by M. Cincera, *Research series*, May 2002.

33. "Investment, R&D and liquidity constraints: A corporate governance approach to the Belgian evidence", by P. Van Cayseele, *Research series*, May 2002.
34. "On the origins of the Franco-German EMU controversies", by I. Maes, *Research series*, July 2002.
35. "An estimated dynamic stochastic general equilibrium model of the euro area", by F. Smets and R. Wouters, *Research series*, October 2002.
36. "The labour market and fiscal impact of labour tax reductions: The case of reduction of employers' social security contributions under a wage norm regime with automatic price indexing of wages", by K. Burggraeve and Ph. Du Caju, *Research series*, March 2003.
37. "Scope of asymmetries in the euro area", by S. Ide and Ph. Moës, *Document series*, March 2003.
38. "De autonijverheid in België: Het belang van het toeleveringsnetwerk rond de assemblage van personenauto's", by F. Coppens and G. van Gastel, *Document series*, June 2003.
39. "La consommation privée en Belgique", by B. Eugène, Ph. Jeanfils and B. Robert, *Document series*, June 2003.
40. "The process of European monetary integration: A comparison of the Belgian and Italian approaches", by I. Maes and L. Quaglia, *Research series*, August 2003.
41. "Stock market valuation in the United States", by P. Bisciari, A. Durré and A. Nyssens, *Document series*, November 2003.
42. "Modeling the term structure of interest rates: Where do we stand?", by K. Maes, *Research series*, February 2004.
43. "Interbank exposures: An empirical examination of system risk in the Belgian banking system", by H. Degryse and G. Nguyen, *Research series*, March 2004.
44. "How frequently do prices change? Evidence based on the micro data underlying the Belgian CPI", by L. Aucremanne and E. Dhyne, *Research series*, April 2004.
45. "Firms' investment decisions in response to demand and price uncertainty", by C. Fuss and Ph. Vermeulen, *Research series*, April 2004.
46. "SMEs and bank lending relationships: The impact of mergers", by H. Degryse, N. Masschelein and J. Mitchell, *Research series*, May 2004.
47. "The determinants of pass-through of market conditions to bank retail interest rates in Belgium", by F. De Graeve, O. De Jonghe and R. Vander Venet, *Research series*, May 2004.
48. "Sectoral vs. country diversification benefits and downside risk", by M. Emiris, *Research series*, May 2004.
49. "How does liquidity react to stress periods in a limit order market?", by H. Beltran, A. Durré and P. Giot, *Research series*, May 2004.
50. "Financial consolidation and liquidity: Prudential regulation and/or competition policy?", by P. Van Cayseele, *Research series*, May 2004.
51. "Basel II and operational risk: Implications for risk measurement and management in the financial sector", by A. Chapelle, Y. Crama, G. Hübner and J.-P. Peters, *Research series*, May 2004.
52. "The efficiency and stability of banks and markets", by F. Allen, *Research series*, May 2004.
53. "Does financial liberalization spur growth?", by G. Bekaert, C.R. Harvey and C. Lundblad, *Research series*, May 2004.
54. "Regulating financial conglomerates", by X. Freixas, G. Lóránth, A.D. Morrison and H.S. Shin, *Research series*, May 2004.
55. "Liquidity and financial market stability", by M. O'Hara, *Research series*, May 2004.
56. "Economisch belang van de Vlaamse zeehavens: Verslag 2002", by F. Lagneaux, *Document series*, June 2004.
57. "Determinants of euro term structure of credit spreads", by A. Van Landschoot, *Research series*, July 2004.
58. "Macroeconomic and monetary policy-making at the European Commission, from the Rome Treaties to the Hague Summit", by I. Maes, *Research series*, July 2004.
59. "Liberalisation of network industries: Is electricity an exception to the rule?", by F. Coppens and D. Vivet, *Document series*, September 2004.
60. "Forecasting with a Bayesian DSGE model: An application to the euro area", by F. Smets and R. Wouters, *Research series*, September 2004.
61. "Comparing shocks and frictions in US and euro area business cycle: A Bayesian DSGE approach", by F. Smets and R. Wouters, *Research series*, October 2004.
62. "Voting on pensions: A survey", by G. de Walque, *Research series*, October 2004.
63. "Asymmetric growth and inflation developments in the acceding countries: A new assessment", by S. Ide and P. Moës, *Research series*, October 2004.
64. "Importance économique du Port Autonome de Liège: rapport 2002", by F. Lagneaux, *Document series*, November 2004.
65. "Price-setting behaviour in Belgium: What can be learned from an ad hoc survey", by L. Aucremanne and M. Druant, *Research series*, March 2005.

66. "Time-dependent versus state-dependent pricing: A panel data approach to the determinants of Belgian consumer price changes", by L. Aucremanne and E. Dhyne, *Research series*, April 2005.
67. "Indirect effects – A formal definition and degrees of dependency as an alternative to technical coefficients", by F. Coppens, *Research series*, May 2005.
68. "Noname – A new quarterly model for Belgium", by Ph. Jeanfils and K. Burggraeve, *Research series*, May 2005.
69. "Economic importance of the Flemish maritime ports: Report 2003", by F. Lagneaux, *Document series*, May 2005.
70. "Measuring inflation persistence: A structural time series approach", by M. Dossche and G. Everaert, *Research series*, June 2005.
71. "Financial intermediation theory and implications for the sources of value in structured finance markets", by J. Mitchell, *Document series*, July 2005.
72. "Liquidity risk in securities settlement", by J. Devriese and J. Mitchell, *Research series*, July 2005.
73. "An international analysis of earnings, stock prices and bond yields", by A. Durré and P. Giot, *Research series*, September 2005.
74. "Price setting in the euro area: Some stylized facts from Individual Consumer Price Data", by E. Dhyne,
- L. J. Álvarez, H. Le Bihan, G. Veronese, D. Dias, J. Hoffmann, N. Jonker, P. Lünnemann, F. Ruml and J. Vilmunen, *Research series*, September 2005.
75. "Importance économique du Port Autonome de Liège: rapport 2003", by F. Lagneaux, *Document series*, October 2005.
76. "The pricing behaviour of firms in the euro area: New survey evidence", by S. Fabiani, M. Druant, I. Hernando, C. Kwapił, B. Landau, C. Loupias, F. Martins, T. Mathä, R. Sabbatini, H. Stahl and A. Stokman, *Research series*, November 2005.
77. "Income uncertainty and aggregate consumption", by L. Pozzi, *Research series*, November 2005.
78. "Crédits aux particuliers - Analyse des données de la Centrale des Crédits aux Particuliers", by H. De Doncker, *Document series*, January 2006.
79. "Is there a difference between solicited and unsolicited bank ratings and, if so, why?", by P. Van Roy, *Research series*, February 2006.
80. "A generalised dynamic factor model for the Belgian economy - Useful business cycle indicators and GDP growth forecasts", by Ch. Van Nieuwenhuyze, *Research series*, February 2006.
81. "Réduction linéaire de cotisations patronales à la sécurité sociale et financement alternatif", by Ph. Jeanfils, L. Van Meensel, Ph. Du Caju, Y. Saks, K. Buysse and K. Van Cauter, *Document series*, March 2006.
82. "The patterns and determinants of price setting in the Belgian industry", by D. Cornille and M. Dossche, *Research series*, May 2006.
83. "A multi-factor model for the valuation and risk management of demand deposits", by H. Dewachter, M. Lyrio and K. Maes, *Research series*, May 2006.
84. "The single European electricity market: A long road to convergence", by F. Coppens and D. Vivet, *Document series*, May 2006.
85. "Firm-specific production factors in a DSGE model with Taylor price setting", by G. de Walque, F. Smets and R. Wouters, *Research series*, June 2006.
86. "Economic importance of the Belgian ports: Flemish maritime ports and Liège port complex - Report 2004", by F. Lagneaux, *Document series*, June 2006.
87. "The response of firms' investment and financing to adverse cash flow shocks: The role of bank relationships", by C. Fuss and Ph. Vermeulen, *Research series*, July 2006.
88. "The term structure of interest rates in a DSGE model", by M. Emiris, *Research series*, July 2006.
89. "The production function approach to the Belgian output gap, estimation of a multivariate structural time series model", by Ph. Moës, *Research series*, September 2006.
90. "Industry wage differentials, unobserved ability, and rent-sharing: Evidence from matched worker-firm data, 1995-2002", by R. Plasman, F. Rycx and I. Tojerow, *Research series*, October 2006.
91. "The dynamics of trade and competition", by N. Chen, J. Imbs and A. Scott, *Research series*, October 2006.
92. "A New Keynesian model with unemployment", by O. Blanchard and J. Gali, *Research series*, October 2006.
93. "Price and wage setting in an integrating Europe: Firm level evidence", by F. Abraham, J. Konings and S. Vanormelingen, *Research series*, October 2006.
94. "Simulation, estimation and welfare implications of monetary policies in a 3-country NOEM model", by J. Plasmans, T. Michalak and J. Fornero, *Research series*, October 2006.
95. "Inflation persistence and price-setting behaviour in the euro area: A summary of the Inflation Persistence Network evidence", by F. Altissimo, M. Ehrmann and F. Smets, *Research series*, October 2006.

96. "How wages change: Micro evidence from the International Wage Flexibility Project", by W.T. Dickens, L. Goette, E.L. Goshen, S. Holden, J. Messina, M.E. Schweitzer, J. Turunen and M. Ward, *Research series*, October 2006.
97. "Nominal wage rigidities in a new Keynesian model with frictional unemployment", by V. Bodart, G. de Walque, O. Pierrard, H.R. Sneessens and R. Wouters, *Research series*, October 2006.
98. "Dynamics on monetary policy in a fair wage model of the business cycle", by D. De la Croix, G. de Walque and R. Wouters, *Research series*, October 2006.
99. "The kinked demand curve and price rigidity: Evidence from scanner data", by M. Dossche, F. Heylen and D. Van den Poel, *Research series*, October 2006.
100. "Lumpy price adjustments: A microeconomic analysis", by E. Dhyne, C. Fuss, H. Peseran and P. Sevestre, *Research series*, October 2006.
101. "Reasons for wage rigidity in Germany", by W. Franz and F. Pfeiffer, *Research series*, October 2006.
102. "Fiscal sustainability indicators and policy design in the face of ageing", by G. Langenus, *Research series*, October 2006.
103. "Macroeconomic fluctuations and firm entry: Theory and evidence", by V. Lewis, *Research series*, October 2006.
104. "Exploring the CDS-bond basis", by J. De Wit, *Research series*, November 2006.
105. "Sector concentration in loan portfolios and economic capital", by K. Düllmann and N. Masschelein, *Research series*, November 2006.
106. "R&D in the Belgian pharmaceutical sector", by H. De Doncker, *Document series*, December 2006.
107. "Importance et évolution des investissements directs en Belgique", by Ch. Piette, *Document series*, January 2007.
108. "Investment-specific technology shocks and labor market frictions", by R. De Bock, *Research series*, February 2007.
109. "Shocks and frictions in US business cycles: A Bayesian DSGE approach", by F. Smets and R. Wouters, *Research series*, February 2007.
110. "Economic impact of port activity: A disaggregate analysis. The case of Antwerp", by F. Coppens, F. Lagneaux, H. Meersman, N. Sellekaerts, E. Van de Voorde, G. van Gastel, Th. Vanellander, A. Verhetsel, *Document series*, February 2007.
111. "Price setting in the euro area: Some stylised facts from individual producer price data", by Ph. Vermeulen, D. Dias, M. Dossche, E. Gautier, I. Hernando, R. Sabbatini, H. Stahl, *Research series*, March 2007.
112. "Assessing the gap between observed and perceived inflation in the euro area: Is the credibility of the HICP at stake?", by L. Aucremanne, M. Collin and Th. Stragier, *Research series*, April 2007.
113. "The spread of Keynesian economics: A comparison of the Belgian and Italian experiences", by I. Maes, *Research series*, April 2007.
114. "Imports and exports at the level of the firm: Evidence from Belgium", by M. Muûls and M. Pisu, *Research series*, May 2007.
115. "Economic importance of the Belgian ports: Flemish maritime ports and Liège port complex - Report 2005", by F. Lagneaux, *Document series*, May 2007.
116. "Temporal distribution of price changes: Staggering in the large and synchronization in the small", by E. Dhyne and J. Konieczny, *Research series*, June 2007.
117. "Can excess liquidity signal an asset price boom?", by A. Bruggeman, *Research series*, August 2007.
118. "The performance of credit rating systems in the assessment of collateral used in Eurosystem monetary policy operations", by F. Coppens, F. González and G. Winkler, *Research series*, September 2007.
119. "The determinants of stock and bond return comovements", by L. Baele, G. Bekaert and K. Inghelbrecht, *Research series*, October 2007.
120. "Monitoring pro-cyclicality under the capital requirements directive: Preliminary concepts for developing a framework", by N. Masschelein, *Document series*, October 2007.
121. "Dynamic order submission strategies with competition between a dealer market and a crossing network", by H. Degryse, M. Van Achter and G. Wuyts, *Research series*, November 2007.
122. "The gas chain: Influence of its specificities on the liberalisation process", by C. Swartenbroekx, *Document series*, November 2007.
123. "Failure prediction models: Performance, disagreements, and internal rating systems", by J. Mitchell and P. Van Roy, *Research series*, December 2007.
124. "Downward wage rigidity for different workers and firms: An evaluation for Belgium using the IWFPP procedure", by Ph. Du Caju, C. Fuss and L. Wintr, *Research series*, December 2007.
125. "Economic importance of Belgian transport logistics", by F. Lagneaux, *Document series*, January 2008.

126. "Some evidence on late bidding in eBay auctions", by L. Wintr, *Research series*, January 2008.
127. "How do firms adjust their wage bill in Belgium? A decomposition along the intensive and extensive margins", by C. Fuss, *Research series*, January 2008.
128. "Exports and productivity – Comparable evidence for 14 countries", by The International Study Group on Exports and Productivity, *Research series*, February 2008.
129. "Estimation of monetary policy preferences in a forward-looking model: A Bayesian approach", by P. Ilbas, *Research series*, March 2008.
130. "Job creation, job destruction and firms' international trade involvement", by M. Pisu, *Research series*, March 2008.
131. "Do survey indicators let us see the business cycle? A frequency decomposition", by L. Dresse and Ch. Van Nieuwenhuyze, *Research series*, March 2008.
132. "Searching for additional sources of inflation persistence: The micro-price panel data approach", by R. Raciborski, *Research series*, April 2008.
133. "Short-term forecasting of GDP using large monthly datasets - A pseudo real-time forecast evaluation exercise", by K. Barhoumi, S. Benk, R. Cristadoro, A. Den Reijer, A. Jakaitiene, P. Jelonek, A. Rua, G. Rünstler, K. Ruth and Ch. Van Nieuwenhuyze, *Research series*, June 2008.
134. "Economic importance of the Belgian ports: Flemish maritime ports, Liège port complex and the port of Brussels - Report 2006", by S. Vennix, *Document series*, June 2008.
135. "Imperfect exchange rate pass-through: The role of distribution services and variable demand elasticity", by Ph. Jeanfils, *Research series*, August 2008.
136. "Multivariate structural time series models with dual cycles: Implications for measurement of output gap and potential growth", by Ph. Moës, *Research series*, August 2008.
137. "Agency problems in structured finance - A case study of European CLOs", by J. Keller, *Document series*, August 2008.
138. "The efficiency frontier as a method for gauging the performance of public expenditure: A Belgian case study", by B. Eugène, *Research series*, September 2008.
139. "Exporters and credit constraints. A firm-level approach", by M. Muûls, *Research series*, September 2008.
140. "Export destinations and learning-by-exporting: Evidence from Belgium", by M. Pisu, *Research series*, September 2008.
141. "Monetary aggregates and liquidity in a neo-Wicksellian framework", by M. Canzoneri, R. Cumby, B. Diba and D. López-Salido, *Research series*, October 2008.
142. "Liquidity, inflation and asset prices in a time-varying framework for the euro area", by Ch. Baumeister, E. Durinck and G. Peersman, *Research series*, October 2008.
143. "The bond premium in a DSGE model with long-run real and nominal risks", by G. D. Rudebusch and E. T. Swanson, *Research series*, October 2008.
144. "Imperfect information, macroeconomic dynamics and the yield curve: An encompassing macro-finance model", by H. Dewachter, *Research series*, October 2008.
145. "Housing market spillovers: Evidence from an estimated DSGE model", by M. Iacoviello and S. Neri, *Research series*, October 2008.
146. "Credit frictions and optimal monetary policy", by V. Cúrdia and M. Woodford, *Research series*, October 2008.
147. "Central Bank misperceptions and the role of money in interest rate rules", by G. Beck and V. Wieland, *Research series*, October 2008.
148. "Financial (in)stability, supervision and liquidity injections: A dynamic general equilibrium approach", by G. de Walque, O. Pierrard and A. Rouabah, *Research series*, October 2008.
149. "Monetary policy, asset prices and macroeconomic conditions: A panel-VAR study", by K. Assenmacher-Wesche and S. Gerlach, *Research series*, October 2008.
150. "Risk premiums and macroeconomic dynamics in a heterogeneous agent model", by F. De Graeve, M. Dossche, M. Emiris, H. Sneessens and R. Wouters, *Research series*, October 2008.
151. "Financial factors in economic fluctuations", by L. J. Christiano, R. Motto and M. Rotagno, *Research series*, to be published.
152. "Rent-sharing under different bargaining regimes: Evidence from linked employer-employee data", by M. Rusinek and F. Rycx, *Research series*, December 2008.
153. "Forecast with judgment and models", by F. Monti, *Research series*, December 2008.
154. "Institutional features of wage bargaining in 23 European countries, the US and Japan", by Ph. Du Caju, E. Gautier, D. Momferatou and M. Ward-Warmedinger, *Research series*, December 2008.
155. "Fiscal sustainability and policy implications for the euro area", by F. Balassone, J. Cunha, G. Langenus, B. Manzke, J. Pavot, D. Prammer and P. Tommasino, *Research series*, January 2009.
156. "Understanding sectoral differences in downward real wage rigidity: Workforce composition, institutions, technology and competition", by Ph. Du Caju, C. Fuss and L. Wintr, *Research series*, February 2009.

157. "Sequential bargaining in a New Keynesian model with frictional unemployment and staggered wage negotiation", by G. de Walque, O. Pierrard, H. Sneessens and R. Wouters, *Research series*, February 2009.
158. "Economic importance of air transport and airport activities in Belgium", by F. Kupfer and F. Lagneaux, *Document series*, March 2009.
159. "Rigid labour compensation and flexible employment? Firm-Level evidence with regard to productivity for Belgium", by C. Fuss and L. Wintr, *Research series*, March 2009.
160. "The Belgian iron and steel industry in the international context", by F. Lagneaux and D. Vivet, *Document series*, March 2009.
161. "Trade, wages and productivity", by K. Behrens, G. Mion, Y. Murata and J. Südekum, *Research series*, March 2009.
162. "Labour flows in Belgium", by P. Heuse and Y. Saks, *Research series*, April 2009.
163. "The young Lamfalussy: An empirical and policy-oriented growth theorist", by I. Maes, *Research series*, April 2009.
164. "Inflation dynamics with labour market matching: Assessing alternative specifications", by K. Christoffel, J. Costain, G. de Walque, K. Kuester, T. Linzert, S. Millard and O. Pierrard, *Research series*, May 2009.
165. "Understanding inflation dynamics: Where do we stand?", by M. Dossche, *Research series*, June 2009.
166. "Input-output connections between sectors and optimal monetary policy", by E. Kara, *Research series*, June 2009.
167. "Back to the basics in banking? A micro-analysis of banking system stability", by O. De Jonghe, *Research series*, June 2009.
168. "Model misspecification, learning and the exchange rate disconnect puzzle", by V. Lewis and A. Markiewicz, *Research series*, July 2009.
169. "The use of fixed-term contracts and the labour adjustment in Belgium", by E. Dhyne and B. Mahy, *Research series*, July 2009.
170. "Analysis of business demography using markov chains – An application to Belgian data", by F. Coppens and F. Verduyn, *Research series*, July 2009.
171. "A global assessment of the degree of price stickiness - Results from the NBB business survey", by E. Dhyne, *Research series*, July 2009.
172. "Economic importance of the Belgian ports: Flemish maritime ports, Liège port complex and the port of Brussels - Report 2007", by C. Mathys, *Document series*, July 2009.
173. "Evaluating a monetary business cycle model with unemployment for the euro area", by N. Groshenny, *Research series*, July 2009.
174. "How are firms' wages and prices linked: Survey evidence in Europe", by M. Druant, S. Fabiani and G. Kezdi, A. Lamo, F. Martins and R. Sabbatini, *Research series*, August 2009.
175. "Micro-data on nominal rigidity, inflation persistence and optimal monetary policy", by E. Kara, *Research series*, September 2009.
176. "On the origins of the BIS macro-prudential approach to financial stability: Alexandre Lamfalussy and financial fragility", by I. Maes, *Research series*, October 2009.
177. "Incentives and tranche retention in securitisation: A screening model", by I. Fender and J. Mitchell, *Research series*, October 2009.
178. "Optimal monetary policy and firm entry", by V. Lewis, *Research series*, October 2009.
179. "Staying, dropping, or switching: The impacts of bank mergers on small firms", by H. Degryse, N. Masschelein and J. Mitchell, *Research series*, October 2009.
180. "Inter-industry wage differentials: How much does rent sharing matter?", by Ph. Du Caju, F. Rycx and I. Tojerow, *Research series*, October 2009.
181. "Empirical evidence on the aggregate effects of anticipated and unanticipated US tax policy shocks", by K. Mertens and M. O. Ravn, *Research series*, November 2009.
182. "Downward nominal and real wage rigidity: Survey evidence from European firms", by J. Babecký, Ph. Du Caju, T. Kosma, M. Lawless, J. Messina and T. Rõõm, *Research series*, November 2009.
183. "The margins of labour cost adjustment: Survey evidence from European firms", by J. Babecký, Ph. Du Caju, T. Kosma, M. Lawless, J. Messina and T. Rõõm, *Research series*, November 2009.
184. "Discriminatory fees, coordination and investment in shared ATM networks" by S. Ferrari, *Research series*, January 2010.
185. "Self-fulfilling liquidity dry-ups" by F. Malherbe, *Research series*, March 2010.
186. "The development of monetary policy in the 20th century - some reflections", by O. Issing, *Research series*, April 2010.
187. "Getting rid of Keynes? A survey of the history of macroeconomics from Keynes to Lucas and beyond", by M. De Vroey, *Research series*, April 2010.

188. "A century of macroeconomic and monetary thought at the National Bank of Belgium", by I. Maes, *Research series*, April 2010.
189. "Inter-industry wage differentials in EU countries: What do cross-country time-varying data add to the picture?", by Ph. Du Caju, G. Kátay, A. Lamo, D. Nicolitsas and S. Poelhekke, *Research series*, April 2010.
190. "What determines euro area bank CDS spreads?", by J. Annaert, M. De Ceuster, P. Van Roy and C. Vespro, *Research series*, May 2010.
191. "The incidence of nominal and real wage rigidity: An individual-based sectoral approach", by J. Messina, Ph. Du Caju, C. F. Duarte, N. L. Hansen, M. Izquierdo, *Research series*, June 2010.
192. "Economic importance of the Belgian ports: Flemish maritime ports, Liège port complex and the port of Brussels - Report 2008", by C. Mathys, *Document series*, July 2010.
193. "Wages, labor or prices: how do firms react to shocks?", by E. Dhyne and M. Druant, *Research series*, July 2010.
194. "Trade with China and skill upgrading: Evidence from Belgian firm level data", by G. Mion, H. Vandebussche, and L. Zhu, *Research series*, September 2010.
195. "Trade crisis? What trade crisis?", by K. Behrens, G. Corcos and G. Mion, *Research series*, September 2010.
196. "Trade and the global recession", by J. Eaton, S. Kortum, B. Neiman and J. Romalis, *Research series*, October 2010.
197. "Internationalization strategy and performance of small and medium sized enterprises", by J. Onkelinx and L. Sleuwaegen, *Research series*, October 2010.
198. "The internationalization process of firms: From exports to FDI?", by P. Conconi, A. Sapir and M. Zanardi, *Research series*, October 2010.
199. "Intermediaries in international trade: Direct versus indirect modes of export", by A. B. Bernard, M. Grazzi and C. Tomasi, *Research series*, October 2010.
200. "Trade in services: IT and task content", by A. Ariu and G. Mion, *Research series*, October 2010.
201. "The productivity and export spillovers of the internationalisation behaviour of Belgian firms", by M. Dumont, B. Merlevede, C. Piette and G. Rayp, *Research series*, October 2010.
202. "Market size, competition, and the product mix of exporters", by T. Mayer, M. J. Melitz and G. I. P. Ottaviano, *Research series*, October 2010.
203. "Multi-product exporters, carry-along trade and the margins of trade", by A. B. Bernard, I. Van Beveren and H. Vandebussche, *Research series*, October 2010.
204. "Can Belgian firms cope with the Chinese dragon and the Asian tigers? The export performance of multiproduct firms on foreign markets" by F. Abraham and J. Van Hove, *Research series*, October 2010.
205. "Immigration, offshoring and American jobs", by G. I. P. Ottaviano, G. Peri and G. C. Wright, *Research series*, October 2010.
206. "The effects of internationalisation on domestic labour demand by skills: Firm-level evidence for Belgium", by L. Cuyvers, E. Dhyne, and R. Soeng, *Research series*, October 2010.
207. "Labour demand adjustment: Does foreign ownership matter?", by E. Dhyne, C. Fuss and C. Mathieu, *Research series*, October 2010.
208. "The Taylor principle and (in-)determinacy in a New Keynesian model with hiring frictions and skill loss", by A. Rannenberg, *Research series*, November 2010.
209. "Wage and employment effects of a wage norm: The Polish transition experience" by A. de Crombrugge and G. de Walque, *Research series*, February 2011.
210. "Estimating monetary policy reaction functions: A discrete choice approach" by J. Boeckx, *Research series*, February 2011.
211. "Firm entry, inflation and the monetary transmission mechanism" by V. Lewis and C. Poilly, *Research series*, February 2011.
212. "The link between mobile telephony arrears and credit arrears" by H. De Doncker, *Document series*, March 2011.
213. "Development of a financial health indicator based on companies' annual accounts", by D. Vivet, *Document series*, April 2011.
214. "Wage structure effects of international trade: Evidence from a small open economy", by Ph. Du Caju, F. Rycx and I. Tojerow, *Research series*, April 2011.
215. "Economic importance of the Belgian ports: Flemish maritime ports, Liège port complex and the port of Brussels - Report 2009", by C. Mathys, *Document series*, June 2011.

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

Member of the Board of directors of the National Bank of Belgium

© Illustrations: National Bank of Belgium

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

Published in June 2011